STATE ENVIRONMENTAL QUALITY REVIEW

VILLAGE OF PAINTED POST – WEST WATER STREET PREDEVELOPMENT PROJECT
DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT

Project Location
450 West Water Street
Painted Post, NY 14870

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Lead Consultant
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List of Acronyms

amsl	above mean sea level
ac-feet	Acre-Feet
ADT	Average Daily Traffic
AQI	Air Quality Index
C&D	Construction and Demolition
dBA	Decibels
BMP	Best Management Practice
CAAA	Clean Air Act Amendments
CEA	Critical Environmental Area
CFR	Code of Federal Regulations
cfs	Cubic Feet Per Second
DGEIS	Draft Generic Environmental Impact Statement
ECL	Environmental Conservation Law
EPA	United States Environmental Protection Agency
ESDC	Empire State Development Corporation
FEMA	Federal Emergency Management Agency
FGEIS	Final Generic Environmental Impact Statement
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
GEIS	Generic Environmental Impact Statement
GFA	Gross Floor Area
GLA	Gross Leasable Area
GPD or gpd	Gallons per Day
GPM	Gallons per Minute
HVAC	Heating, Ventilation, and Air Conditioning
IECC	International Energy Conservation Code
ISO	Insurance Services Office
LEED	Leadership in Energy and Environmental Design
LOS	Level of Service
MGD	Million Gallons per Day
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NYCRR	New York Codes, Rules, and Regulations
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTCHS	National Technical Committee for Hydric Soils
NYSDAM	New York State Department of Agriculture and Markets
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
NYSERDA	New York State Energy Research and Development Authority
NYSOPRHP	New York State Office of Parks, Recreation, and Historic Places
NWI	National Wetlands Inventory
OSHA	Occupational Safety and Health Administration
SEQRA	State Environmental Quality Review Act
SHPO	State Historic Preservation Office
SPDES	State Pollutant Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan
TIS	Traffic Impact Study
USACE	United States Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
vph	Vehicles per Hour

Chapter 1
Introduction

CHAPTER 1: INTRODUCTION

The Village of Painted Post (Project Sponsor) has requested the preparation of a Draft Generic Environmental Impact Statement (DGEIS), pursuant to the State Environmental Quality Review Act (SEQRA) to assess the social, economic, and environmental effects of a generic commercial/industrial development proposal for the West Water Street Predevelopment Project.

The Project will transform an approximately 49-acre vacant parcel, formerly the Ingersoll-Rand foundry site, into a mixed-use commercial/industrial complex of 249,000 square feet in size. The Conceptual Site Layout Plan for the Project (Figure 1-1) visualizes a site layout for the multi-building commercial/industrial development.

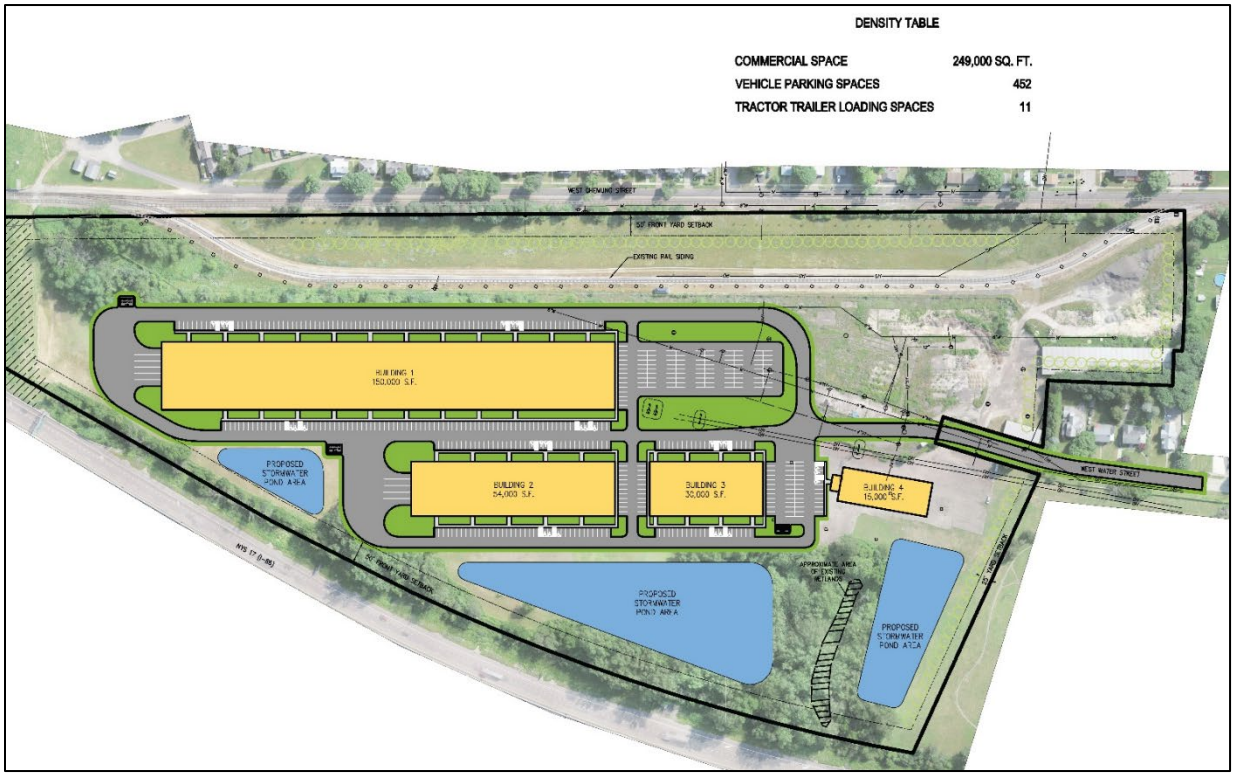

Figure 1-1: Overview of the West Water Street Predevelopment.

The Site is located at the end of West Water Street in Painted Post (Village), adjacent to the I-99 and I-86 highway interchange and a Norfolk Southern rail line with a rail siding running through a portion of the Site. The Site is currently zoned as its own district, West Water Street Development District (I-2), which generally aligns with industrial uses, with potential for some commercial uses. Deed restrictions were placed on the site by its former owners, Ingersoll-Rand, which prohibit specific uses on the Site, such as residential, food processing or preparation, medical, and cultural facilities or places of worship. These restrictions are generally reflected in the Painted Post Zoning Law (2019) for this district.

The Site was evaluated with the assumption that development would occur over a period of approximately two years, with construction of the entire multi-building facility occurring in one

phase and becoming operational simultaneously. A portion of the land will remain undeveloped and could potentially be developed for an additional use, or uses, at a future date.

The Site has seen development interest in the past, following the shuttering of the foundry and subsequent cleanup efforts, though those proposed projects did not move forward beyond Planning Board review. A Generic Environmental Impact Statement (GEIS) was selected to be prepared as part of a larger predevelopment/pre-permitting effort by the Village to make the Site more attractive to potential developers and streamline future permitting should a developer fall within the thresholds defined within the final GEIS. This project is based on a theoretical development on the Site to evaluate impacts of an Alternative of Choice (Conceptual Site Layout Plan) that reflects what is likely to be developed under current conditions and what has previously been considered “acceptable”. The Project involves some well-defined and specific elements such as items meeting lot requirements, zone ordinances and deed restrictions. Other analyses are more general or conceptual such as building usage, building/parking orientation and proposed stormwater practices. The preparation of a GEIS prior to any proposed development(s) helps address cumulative impacts and identify mitigation measures for any future development. It establishes thresholds and conditions that would trigger the supplemental need for any further determinations of significance and/or updates to, or preparation of a new, EIS as further described in Chapter 10. It aids in the establishment of a framework that fully addresses potential environmental impacts and may substantially reduce SEQR requirements for new construction. Potential significant adverse environmental impacts examined in Chapter 5 of this DGEIS include impacts to land, water, vegetation and fauna, public health and environment, historic and archaeological resources, transportation, utilities, air, aesthetic resources, community services, and open space, as well as construction impacts.

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Chapter 2
Project Description

CHAPTER 2: PROJECT DESCRIPTION

2.1 Introduction

This Chapter provides a comprehensive overview of the theoretical West Water Street Industrial Site development and serves as the basis for assessing potential environmental effects. It describes the background, history, and location of the Site; the Project purpose, need, and benefits; and the existing site requirements; and further explains the SEQR and GEIS processes and required approvals.

2.2 Overall Project Description

The Project Sponsor seeks to predevelop a vacant parcel in the Village for a mixed-use commercial/industrial complex. Figures 2.1-1 and 2.1-2 provide an overview and 3D depiction of the conceptual Site layout. The preparation of this GEIS supports the overall project goal of predeveloping/pre-permitting the Site for such development, setting thresholds and evaluating potential impacts. The Project is on the site of the former Ingersoll-Rand foundry and has remained generally undeveloped since the foundry was closed in 1985 and prescribed remedial work was completed.

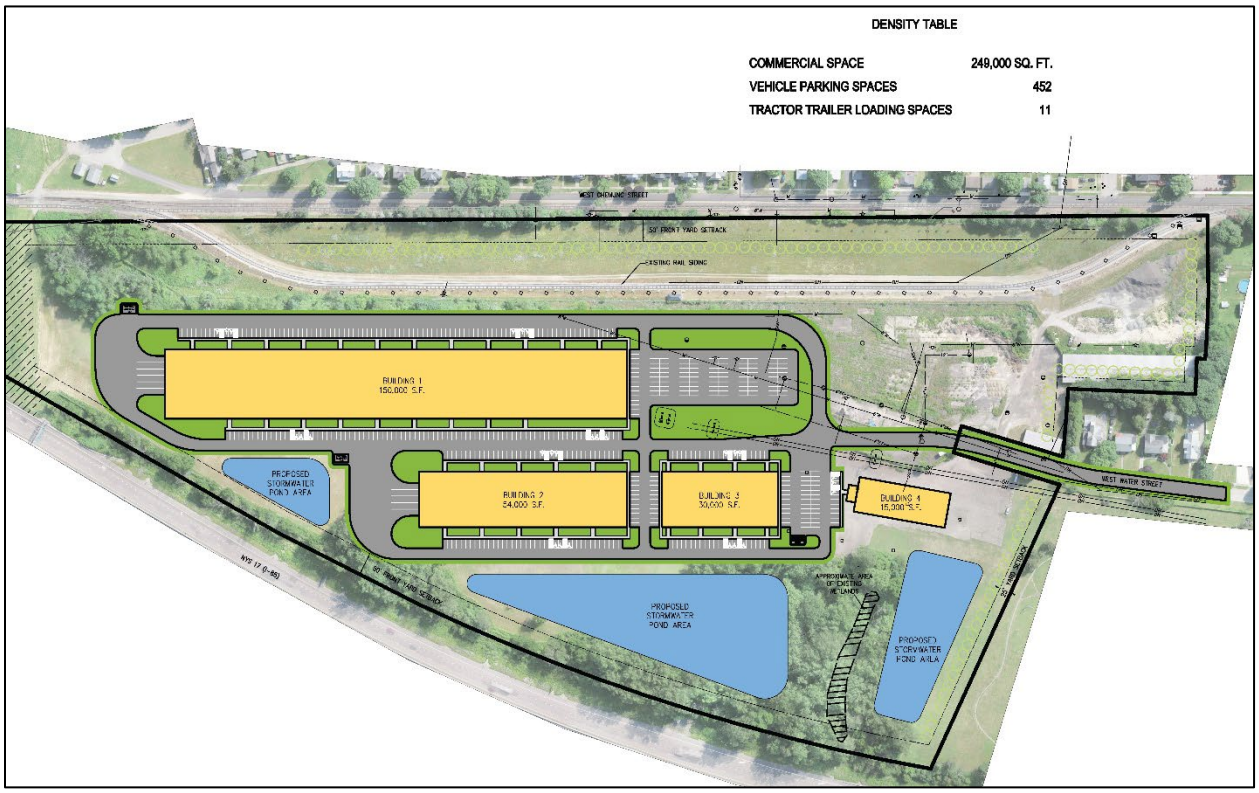

Figure 2.1-1: Overall Conceptual Site Layout Plan.

Figure 2.1-2: 3D Depiction of the Overall Site Layout.

Design standards were established based on existing zoning and input from Village officials, residents, and other stakeholders to focus the Project Sponsor's vision for the development of West Water Street Industrial Site concept plan. The design standards will provide Site and building standards including buffer areas, thoroughfare assemblies, lighting, plantings, bulk density requirements, building height(s), allowable usage, parking layouts and other typical development aspects.

The Site Plan included the following:

- 249,000 square feet of commercial/industrial space
- 452 parking spaces and 11 truck loading berths
- Stormwater management areas
- Associated infrastructure

2.3 Background and Location

The Site is located in Painted Post (Village), Erwin (Town), Steuben (County), situated West of Corning in the Southern Tier Region of New York State. The Project Site is bounded by Interstate I-86 to the west, which converges with I-99 to connect the Southern and Western Tiers to much of Pennsylvania; a Norfolk Southern rail line to the northeast, which runs north to the broader

Finger Lakes Region, west to Buffalo, and east to Binghamton; and residential West Water Street to the southeast. Hodgmans Creek runs along a small northern portion of the Site, with the Cohocton River separated from the Site by I-86. Hodgman Park is located south of the Site along West Water Street, a portion of which was formerly also part of the Ingersoll-Rand foundry site.

The Project involves a proposed theoretical development of a multi-building mixed-use commercial/industrial complex on the approximately 49-acre site. The GEIS provides an outline of social, economic, and environmental impacts of the site and the threshold of each component related to the proposed development. The Site is currently zoned as its own district, West Water Street Development District (I-2), which generally aligns with industrial uses, with the potential for some commercial uses. A deed restriction was placed on the site by its former owners, Ingersoll-Rand, which prohibit specific uses on the Site, such as residential, food processing or preparation, medical, and cultural facilities or places of worship. These restrictions are generally reflected in the Painted Post Zoning Law (2019) for this district.

In 2012, construction of a water transloading facility was initiated and a rail siding was built along an 11.48-acre northeast segment of the Site. The siding was completed in 2015 but closed shortly after due to changes in need related to the fracking industry. The remaining foundry foundation footprint, two storage structures, a paved lot, and the rail siding are all that remain on the Site, which is mostly vacant with some vegetated areas.

2.4 Project Purpose, Need, and Benefit

The West Water Street redevelopment will revitalize a dormant and historically significant site and transform it into an active complex. The resulting development has potential to include industrial and/or commercial uses as well as any permitted uses listed in Table 2-2. The renovation of the existing Site will entail one of the most comprehensive redevelopment projects to be initiated in the Village of Painted Post investment, and will create new jobs, during construction and beyond. The resulting benefits to the community, are immense, as the Site will contribute significant local and regional tax revenues as well as the likely increase in property values of surrounding areas. The benefits are a direct result of the remediation of the vacant Site, allowing it to be accessible and reclaimed for a variety of potential productive uses.

2.5 Site History

The Project Site was home to the former Ingersoll-Rand foundry, which operated as a primary industry in Painted Post, manufacturing drills, air compressors, gas compressors, engines, and other related machinery, even producing equipment used for the construction of Mount Rushmore. In 1905, Ingersoll-Sergeant Drill Company merged with Rand Drill Company to form Ingersoll-Rand Company. The 287,000 square foot foundry was located entirely within the Project boundary and was in operation for several decades before closing in 1985.

As part of their standard facility closure activities, Ingersoll-Rand conducted an environmental evaluation and cleanup in early 1986. At this time, evidence of petroleum and polychlorinated

biphenyl (PCB) contamination of soil and other surfaces inside the foundry building were identified, being a result of oil leakage and spills from transformers and capacitors. This was reported to the New York State Department of Environmental Conservation (NYSDEC) and an Interim Remedial Measures (IRM) work plan was approved and a consent order was signed by both parties. All work elements of the IRM work plan were implemented in 1989 and NYSDEC acknowledged completion of the activities in January 1990.

A revised work plan was designed, expanding to encompass off-site areas, following the detection of 1,1,1-trichloroethane (TCA) in Painted Post Municipal Well #4 which was approximately 500 feet northeast of the foundry. This effort was intended to determine the extent of impact of Ingersoll-Rand operations on groundwater quality and field work began for the groundwater quality assessment (GQA) in December 1991. An alleged drum disposal site was also investigated in 1992 following a complaint from a private citizen, though no evidence of a buried drum was found during that investigation. Groundwater sampling did not detect PCBs, the main contaminant of concern at the foundry under the IRM. Volatile organic compounds (VOCs), primarily TCA, were detected, though they generally fell below the State drinking water standard of 5 parts per billion (ppb), except for at one off-site well which was detected at 8 ppb. Trace levels of 1,1-dichloroethane, benzene, ethylbenzene, total xylene, and 1,4-dichlorobenzene were also detected in off-site monitoring wells and, ultimately, the GQA did not indicate the foundry as the source of TCA contamination.

Semi-volatile organic compounds (SVOCs), polynuclear aromatic hydrocarbons (PAHs), were detected on-site near one of the monitoring wells during the well drillings. Further analysis indicated that the PAHs in the fill material were petroleum-based and likely the result of treated wood debris disposal in on-site fill material and road oiling activities. The PAHs were determined to be stationary and not migrating. Ultimately, no environmental exposure pathways were identified for the foundry site, as the SVOCs detected in the soil were not exposed at the surface and were not migrating, and the very low levels of TCA did not constitute an environmental threat. The Village was required to continue monitoring Municipal Well #4 to oversee potential human exposure pathways from groundwater exposure. The SVOCs in the soil were noted to potentially pose an elevated risk to workers during “invasive activities” on the Site.

A Record of Decision (ROD) was issued and a remedy was selected, which involved placing a deed restriction to indicate the presence of in-place contaminated soil around one on-site monitoring well and preparing a sampling and analysis plan to continue monitoring groundwater quality at the site and immediately off-site for an additional 3 years, or 5 rounds. This chosen alternative included the NYSDEC reclassification of the Site from a Class 2, which indicated the confirmed presence of hazardous wastes or its components or breakdown products that represented a significant threat to public health or the environment, to a Class 4, which indicated that the Site was properly closed but required continuous monitoring. The results of the completed additional rounds of groundwater monitoring would be evaluated to determine if additional reclassification or delisting of the Site was appropriate.

The enactment of a deed restriction on the Site contributed to the eventual delisting of the Site in September of 2003, which indicated that remediation had been satisfactorily completed under a remedial program, though it may require ongoing maintenance and periodic certification of institutional/engineering controls.

2.6 Site Layout

The Painted Post Zoning Law defines the following values for the I-2 District:

Minimum Land Area per Principle Use	15,000 sq ft
Minimum Lot Width at the Building Line	100 ft
Minimum Yard Dimensions	50 ft front/rear; 25 ft side
Maximum Lot Coverage	30%
Maximum Building Stories	3
Maximum Building Height	45 ft

The deed restriction placed on the Site informed the permissions for the District within the Zoning Law, with some exceptions:

Table 2-2 below includes a list of Site permitted uses.

Permitted Uses
Commercial vehicle
Low-profile businesses
Offices – General
Offices – One practicing professional in existing building
Planned commercial (consistent with listed restrictions)
Retail business of service, not otherwise mentioned
Manufacturing, Fabrication, Extraction, Assembly Warehousing, etc.
Research labs
Storage facility, indoor
Trucking/Wholesale warehouse terminals (with PB approval)
Accessory use/building/structure on the same lot
Accessory use/building/structure on separate lot
Communication tower, new
Communication tower, co-location on existing site
Public utility or Transportation use – Office
Public utility or Transportation use – Repairs, service, or storage
Satellite dish, >3’ diameter and/or roof-mounted installations
Satellite dish, <3’ diameter ground-mounted installations
Mixed use (of any combination of allowed/permitted uses)

Table 2-3 below includes a list of Site restricted uses.

Restricted Uses
Golf course/Country club
Auto repair garage
Car wash station
Convenience/mini marts (with or without gas)

Daycare center
Drive-in
Equipment rental or sales yard
Gas filling station
Grocery
Laundry or dry-cleaning plant
News rack
Church/place of worship
Crematory
Cultural facility (library, art, museum)
Newspaper offices and print shops
Restaurant
Roadside stand
Storage yards for equipment
Theater/concert hall
Veterinary office, hospital or kennels
Contractor's yard and equipment
Nursing/convalescent home
Agriculture use for manufacture
Cemetery
Club, membership
Hospital/sanitarium
Institutional or philanthropic use
Private, public or parochial school

2.7 SEQR Process

The format and content of this GEIS is prepared in accordance with the regulations under 6 NYCRR 617.9(b). A GEIS was prepared as part of a larger effort to predevelop and pre-permit the Site prior to any new development being proposed. In order to adequately prepare for future development interest, this GEIS is based on a Conceptual Site Layout Plan that represents the most likely development scenario under current conditions and involves less defined components that will be designed and developed as part of any future development interest on the Site. This GEIS presents site-specific analysis for components of the Project that are well defined at the time of its development, as is typical of an EIS, and assesses a variety of impacts based on a theoretical development project with a focus on long-term and cumulative impacts and how any of adverse significant impacts may be mitigated to the extent feasible. This GEIS also establishes thresholds and conditions (Chapter 11) that if exceeded or met, may require additional environmental review.

2.7.1 Overview

The SEQR process involves the following sequential stages: Scoping; Draft GEIS; Public/ Agency Comment Period; SEQR Public Hearing; Final GEIS (FGEIS); and Findings Statement. In accordance with SEQR implementation regulations, the Lead Agency classified the Project as a Type 1 Action for the purposes of environmental review, based on the Project resulting in physical alteration of greater than 10 acres ((6)(i)). The Painted Post Planning Board was established as

the Lead Agency for the purpose of carrying out the obligations of SEQR on April 9, 2025. The Lead Agency issued a Positive Declaration of Environmental Significance on April 9, 2025.

The Project underwent a Scoping process for the content of the GEIS in Spring 2025, and the Village of Painted Post Planning Board adopted the Final Scope on June 4, 2025. The DGEIS was reviewed for adequacy by the Lead Agency and was determined to meet the substantive content requirements set forth in the Final Scoping Document. The DGEIS was released to the public for review and comment during a public comment period which included a public hearing to accept both written and oral comments. Following the close of the public comment period, substantive comments are summarized, assessed and responded to by the Lead Agency in an FGEIS. The FGEIS may contain additional studies and analyses to the extent required to adequately respond to the comments. When complete, the FGEIS will be filed by the Lead Agency and distributed to Interested and Involved agencies. Once the FGEIS has been filed and after the minimum legally required waiting period of 15 days has elapsed, the Lead Agency will issue its Findings Statement. The Findings Statement is a written document prepared by the Lead Agency that identifies the social and economic, as well as environmental, considerations that have been weighed in making a decision to approve or disapprove the Project. If approved, the Lead Agency must set forth its balancing of adverse environmental impacts against the needs for and benefits of the Project. Each Involved Agency must prepare its own Findings Statement following the filing of the FGEIS and prior to approving or disapproving that aspect of the Project before it.

2.7.2 Generic Environmental Impact Statement

The format and content of the GEIS for this Project will be prepared in accordance with the provisions of 6 NYCRR 617.9(b) and Article XIV of the Village of Painted Post Zoning Law (“Code”). The GEIS is clearly and concisely written in English that can be understood by the general public.

Narrative descriptions will incorporate graphic illustrations and representations such as tables, charts, and maps to describe the Project, its location, the affected environment, potential impacts, and mitigation measures. Qualitative descriptions will be supplemented with quantitative data, where appropriate, to thoroughly identify, describe, and evaluate potential environmental impacts.

The GEIS process involved the following sequential stages: Scoping; Draft GEIS; Public/Agency Comment Period; SEQR Public Hearing; Final GEIS; and Findings Statement.

The identified Involved and Interested review agencies are:

- Village of Painted Post Planning Board
- Steuben County Planning Department
- New York State Department of Transportation (NYSDOT)
- New York State Department of Environmental Conservation (NYSDEC)
- New York State Department of Health (NYS DOH)
- New York State Office of Parks, Recreation and Historic Places (NYS OPRHP)

Identified Interested Agencies:

- Village of Painted Post Department of Public Works
- Village of Painted Post Board of Trustees
- Steuben County Industrial Development Agency (IDA)
- Empire State Development (ESD)
- Appalachian Regional Commission (ARC)

2.8 Required Approvals

This section of the DGEIS will outline and describe the approvals and respective agencies required for the development of the Project to occur. The Project will involve approvals by the following agencies:

- Village of Painted Post Planning Board
- Steuben County Planning Department
- New York State Department of Transportation (NYS DOT)
- New York State Department of Environmental Conservation (NYS DEC)
- New York State Department of Health (NYS DOH)
- New York State Office of Parks, Recreation and Historic Places (NYS OPRHP)

Table 2-4 below includes a list of potential permits, reviews and approvals.

	Permit	Activity	Agency	Comments	SEQRA Involved Agency Contact
1	Section 401 of the Clean Water Act (401 Water Quality Certification) Wetlands Jurisdictional Determination (Joint Application)	Certification is used to ensure that federal agencies issuing permits or carrying out direct action, which may result in discharge to water of the United States do not violate New York State's water quality standards or impair designated uses.	NYSDEC	Potential use of NYSDEC's "Blanket" Water Quality certification of the USACE's NWP Program.	Mr. Thomas Haley Regional Permit Administrator NYSDEC Region 8 6274 East Avon-Lima Rd. Avon, NY 14414-9519 (585) 226-5400
2	SPDES General Permit for Storm Water Discharges from Construction Activity (GP-0-25-001)	Storm water discharges form construction phase activities disturbing one-acre of greater. Includes preparation and implementation of SWPPP.	NYSDEC	NOI submitted at least 5 days before construction start-up. NOT submitted after site restoration completed. Up to 60-day review of SWPPP by NYSDEC if SWPPP is not in conformance with General Permit.	Mr. Jeff Parker Steuben County Soil and Water Conservation District 415 W Morris Street Bath, NY 14810 (607) 776-7398, ext. 3
3	Road Work Permit	Work within road rights-of-way (road improvements).	Village of Painted Post Department of Public Works	Village of Painted Post – Road improvements or utility extensions within right-of-way of West Water St	Mr. Larry Smith Department of Public Works 261 Steuben Street P.O. Box 110 Painted Post, NY

	Permit	Activity	Agency	Comments	SEQRA Involved Agency Contact
4	SEQRA (Article 8 of the ECL; 6 NYCRR Part 617)	Environmental impact assessment of project components.	Village of Painted Post Planning Board Involved Agencies	Preparation of Generic Environmental Impact Statement (GEIS) Lead Agency issues Final GEIS with written findings approving or disapproving the Project.	Village of Painted Post Planning & Development Board
5	Federal & State Preservation Laws (36 CFR 800;9 NYCRR Part 428; Sections 3.09 and 14.09 of the NYS Parks, Recreation and Historic Preservation Law)	Completion of Project Review Form (project descriptions and location, photographs, and documentation of prior disturbance) and/or cultural resource investigation. Goal is to obtain "No Effect" letter from SHPO.	NYSOPRHP – Field Services Bureau (SHPO)	Consultation with SHPO regarding sites/facilities listed or eligible for listing on the State and National Registers of Historic Places. Potential impacts on areas deemed by SHPO as sensitive for the presence of archaeological resources.	New York State Division for Historic Preservation New York State Office of Parks, Recreation & Historic Preservation Peebles Island State Park P.O. Box 189
6	Site Plan Approval	Approval of future site development by Project Sponsor	Village of Painted Post		Village of Painted Post Planning Board
7	General Municipal Law (GML) § 239-m	County Planning review of activities located within 500-foot of State or County highway, municipal boundary or park.	Steuben County Planning Department		Steuben County Planning Department
8	Water and Wastewater System Improvements Approval of Plans	Approval of water and wastewater infrastructure improvements and connections.	Village of Painted Post NYS DEC NYS DOH	Village of Painted Post – Water connections Village of Painted Post – Sanitary connections SC DOH – Water/Sewer System Improvements NYS DOH – Water/Sewer System Improvements	Mr. Larry Smith Department of Public Works 261 Steuben Street P.O. Box 110 Painted Post, NY Ms. Darlene Smith Public Health Director Steuben County 607-664-2438 State Department of Health (518) 402-7650 bpwsp@health.ny.gov
9	Building Permits	Building code compliance	Village of Painted Post		Code Enforcement Officer 117 W Water St Painted Post, NY (607) 936-4645
10	DEC Part 182 Permit (NYCRR Part 182)	Approval to develop an area with potential of any taking or modification of habitat of threatened or endangered species.	NYSDEC	Submitted once full project description completed with assessment to avoid and minimize impacts to listed species	Mr. Thomas Haley Regional Permit Administrator NYSDEC Region 8 6274 East Avon-Lima Rd. Avon, NY (585) 2226-5400

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Chapter 3

Reasonable Alternatives

CHAPTER 3: REASONABLE ALTERNATIVES

3.1 Introduction

SEQR requires that the DGEIS contains a description and evaluation of the range of reasonable alternatives to the Project that are feasible, considering the objectives and capabilities of the Project Sponsor. Reasonable alternatives are limited to parcels owned by or under option to the Project Sponsor, as the Project Sponsor cannot make commitments concerning properties it does not control. This Chapter describes alternatives whose potential to reduce or avoid specific impacts are evaluated and compared to the Project in Chapter 5.

3.2 No Action

Analysis of a No Action Alternative is required under 6 NYCRR 617.9(b)(5) and Section 176-9(B)(5)(e) of the Code to provide a baseline for evaluation and comparison of impacts. The No Action Alternative discussion evaluates the adverse or beneficial Site changes that are likely to occur in the reasonably foreseeable future, in the absence of the Project.

Since the closing of the Ingersoll-Rand foundry, the Site has remained vacant and underutilized, despite occasional development interest throughout the years. Buildings and structures associated with foundry operations have been demolished or removed, with the building footprint, paved lot, two storage structures utilized by Village DPW and rail infrastructure remaining. The No Action Alternative would result in the continued underutilization of the approximately 49-acre Site. The remnants of former building foundations and pavement would remain in place. The Site's Soil-Fill Management Plan would remain in place and the natural topography within the Site would remain unchanged.

The following table is a summary of land-use for the No Action Alternative:

Table 3.1-1: No Action and current land-use

Land use or Covertype	Current Acreage
Roads, buildings, and other paved or impervious surfaces	8
Forested	10
Meadows, grasslands or brushlands	30
Surface water features	0.2
Wetlands	0.14

3.3 Development in Accordance with Existing Zoning (Alternative of Choice)

This alternative reflects the development of the Site in accordance with the existing Zoning Law. The Site's zoning generally aligns with Industrial uses, with some restricted commercial uses permitted (either explicitly listed as such by the deed restriction or by exclusion from the deed restriction). Tables 2-2 and Tables 2-3 list the permitted and restricted uses per the Village Zoning

Law, respectively. The deed restriction strictly forbids residential uses and most “business” uses, as outlined in the Zoning Law.

The density requirements for the zone include:

- Minimum lot size is 15,000 square feet.
- Minimum width at the building line is 100 feet.
- Maximum building height is 45 feet.
- Maximum percentage of lot coverage by buildings is 30%.
- Minimum front/rear yard dimensions are 50 feet.
- Minimum side yard dimension is 25 feet.

The ‘Alternative of Choice’ meets the existing density requirements for the district, including the under 30% lot coverage requirement, and adheres to existing permitted uses through zoning and deed restriction requirements (Figure 3.2-1).

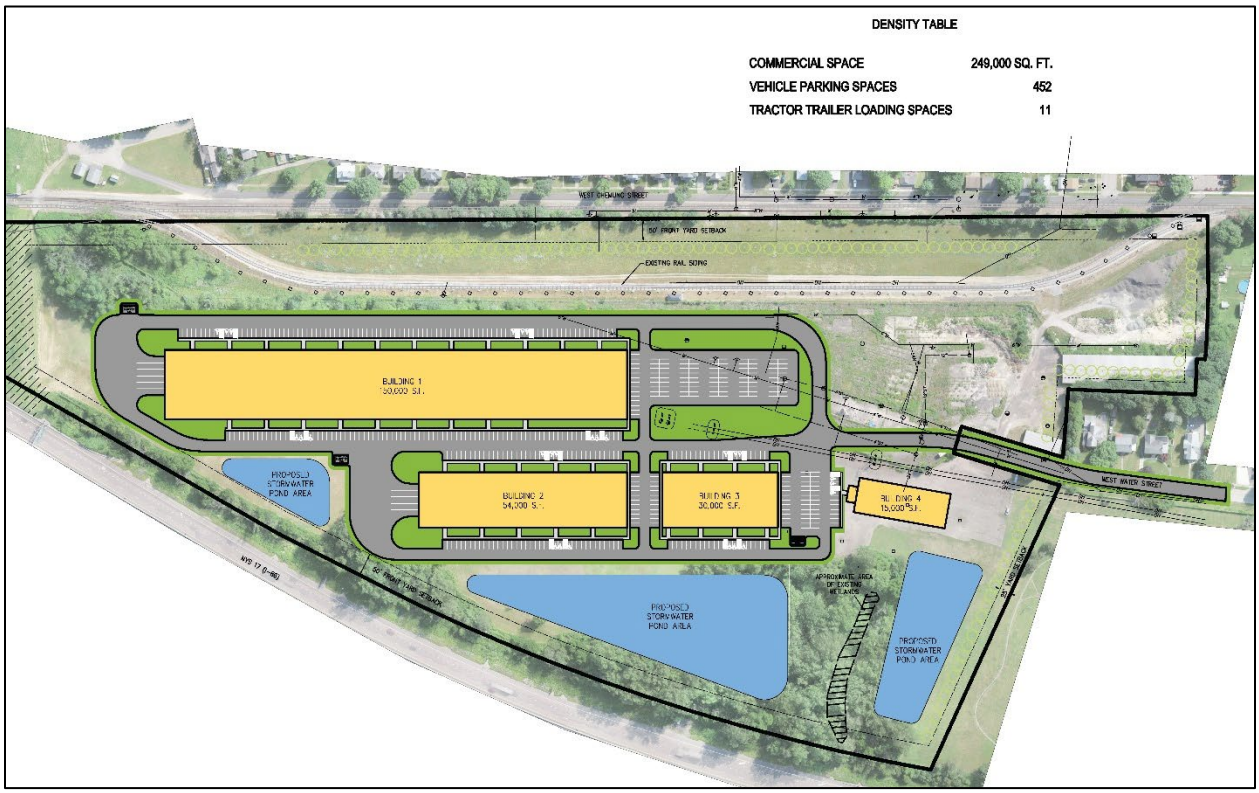

Figure 3.2-1: Conceptual Development Plan for Accordance with Existing Zoning Alternative. (FE)

The Alternative of Choice proposes the buildings for commercial and/or industrial uses with ancillary office space. The proposed arrangement is intended to support a multi-tenant facility. A Traffic Impact Study (TIS) was completed (detailed in Chapter 5) and estimates 350 vehicles per hour during the peak hour, which serves as the basis for determining the required parking capacity for the site. The following table is a summary of the development in accordance with the Alternative of Choice:

Table 3.2-1: Development in Accordance with Existing Zoning Bulk & Density (FE)

Bulk & Density Item	Estimate
Building Area	249,000 sf
Building Coverage Rate	11.7%
Vehicle Spaces Proposed	452 spaces
Truck Loading Spaces Proposed	11 spaces
Lot Coverage Rate	26.3%

3.4 Maximum Development Alternative

This alternative is the development of the Site utilizing the maximum build-out scenario (most intensive use). The “Maximum Development” alternative still abides by uses currently permitted in the district and assumes the same general site layout and approach as the Alternative of Choice, but at a greater density and would result in a greater lot coverage than is permitted. The development density for the Site would be increased by 40%, compared to the Alternative of Choice, from a site build-out of approximately 560,000 sf (lot coverage of 26.3%) to a maximum site build-out of about 800,000 sf (lot coverage of 37.3%). This scenario is compared to the Project

in terms of benefits and environmental impacts in Chapter 5. Figure 3.3-1 depicts a concept plan of the maximum development alternative.

Figure 3.3-1: Conceptual Development Plan for Maximum Development Alternative. (FE)

The following table is a summary of the maximum development alternative:

Table 3.3-1: Maximum Development Alternative Bulk & Density (FE)

Bulk & Density Item	Estimate
Building Area	352,800 sf
Building Coverage Rate	16.5%
Vehicle Spaces Proposed	555 spaces
Truck Loading Spaces Proposed	16 spaces
Lot Coverage Rate	37.3%

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Chapter 4
Public Participation

CHAPTER 4: PUBLIC PARTICIPATION

4.1 Introduction

Southern Tier Central Regional Planning & Development Board (STC), on behalf of the Village of Painted Post, organized and led two (2) public participation meetings to gather resident and community stakeholder input. The intention of the public meetings was to relay information about the site's status and limitations, understand the community's vision for the future of the Site, evaluate the level of concern surrounding impacts of new development, and determine what impacts required further studies.

The data collected in these meetings helped define thresholds for the preparation of the scoping document, draft Generic Environmental Impact Statement (DGEIS) and, ultimately, Final Generic Environmental Impact Statement (FGEIS). Final values often exceeded the preferred values provided by residents and stakeholders to encompass the greatest extent of impact under the generic EIS; though, their preferences informed potential site plans and were integrated into what will be a final recommendations document prepared by STC for the Village.

4.2 Project Vision

The development of the GEIS for the former Ingersoll-Rand foundry site is intended to support the pre-permitting and predevelopment process, as well as inform potential zoning code changes.

4.3 Project Website

STC has maintained a digital repository of documents pertaining to this Project, on behalf of the Village of Painted Post, on their website (located at: https://www.stcplanning.org/west-water-street-industrial-site-painted-post/). The STC project webpage contains project information, summaries of public participation sessions and associated materials, and documents for SEQR.

4.4 Public Involvement and Outreach

Due to the site's turbulent history, STC took care to ensure residents and community stakeholders had the opportunity to voice their thoughts and concerns about the current status of the site, as well as future potential. STC organized and hosted two public engagement sessions in Summer 2024 to gather information that would inform the development of the GEIS and a recommendations document. These sessions were held in-person at the Village Hall; the first was held at a traditional evening time slot, while the second was held at a non-traditional time to try to capture the greatest engagement. These sessions were advertised via traditional media, social media, and through physical flyers posted and available at the Village Hall. The Village Clerk-Treasurer was engaged in this process, as they interface frequently with Village residents and were able to disperse meeting notices in these instances. The Village hosts a Colonial Days event which occurred prior to the public meetings; small flyers were provided to staff to hand out and to

include in meal boxes. Additionally, Planning Board, Zoning Board of Appeals, and Village Board members were encouraged to invite their neighbors through word of mouth.

The first session included a brief presentation to orient attendees to the project and relay the scope and limitations. Attendees were provided sticky dots to indicate which potential impacts were of the greatest concern. Following the presentation, STC led attendees through open discussion about the identified top impacts. This discussion was transcribed to ensure the proper capture of input and for reference throughout the remainder of the project.

The second session was a drop-in format informed by the results of the first session and sought to dive deeper into the identified impacts, as well as gather more specific feedback on potential aspects of site design to guide thresholds and inform what would become the alternative of choice. The project scope and limitations were available during this session for attendees to consider; however, the primary focus of this session was to collect preferences for a predefined set of prompts (that were informed by the first session discussions).

Both sessions also welcomed ‘big ideas’, opinions and data that were not otherwise being collected from each session’s prompts. While these often fell outside of this project’s scope, that feedback was considered in the recommendations document, which will provide guidance to Village officials on possible avenues following the close of this project. The materials displayed for these meetings, as well as the results of the dot activities were made available on the project webpage. Discussions from the first meeting were compiled and summarized, and answers for the frequently asked questions throughout that meeting, that did not fall within the topics, were similarly compiled and shared on the project webpage. Comments, questions, and concerns were welcomed throughout the project duration, even if they were not directly associated with public engagement sessions or other public comment periods.

4.5 Public Scoping Process

STC held public meetings on Tuesday, June 18, 2024, 6-7 PM and Saturday, July 13, 2024 12:30-2 PM to seek public input on concerns and issues that should be addressed in the DGEIS.

The first session sought attendees’ top three potential impacts from a total of eleven. A three-way tie on the third highest impact concern brought the total impacts discussed to five. Unsurprisingly, truck traffic was the number one impact of concern; this has been a consistent issue that has arose with each proposed development of the site following the closure of the former foundry. The second highest scoring impact was hours of operation. Concerns surrounding this impact primarily came from potential evening and late-night, with most residents desiring hours of operation that occurred only when people were ‘away’. Both truck traffic and hours of operation concerns were particularly impactful, as the currently permitted uses of the site tend to bring greater amounts of truck traffic and operate in two shifts which begin early in the morning and extend through the late evening.

The three impacts that tied were visual changes, contaminants, and municipal resources. Based on the discussion that followed, it appeared that many of these concerns were adequately addressed in the meeting or could be addressed in the preparation of the GEIS. The discussion surrounding contaminants was heavily focused on existing levels of contamination on the site, rather than concerns surrounding impacts created through future uses.

The second session sought to gather more quantitative data on preference for truck traffic and hours of operation, and identify more specific preferences on aesthetics to address visual change. Impacts on municipal resources and contaminants were sufficiently addressed as part of the first session's discussions and did not receive emphasis in the second session. While sound and vibration did not score highly in the first session as an impact of concern, associated concerns were brought up as part of the truck traffic and hours of operation discussions. For this reason, these impacts were reevaluated in the second session.

The Project Sponsor submitted a Draft Scoping Document by letter dated May 7, 2025, which was made available to the public via the Project webpage and a social media post. All public comments received at the meeting and during the comment period are provided as an Appendix to Final Scoping Document.

4.6 DGEIS Public Comment Period

After the Lead Agency determines that the DGEIS is adequate for public review, a Notice of Completion for the DGEIS will be distributed by the Lead Agency in accordance with requirements of SEQR and published in the Environmental Notice Bulletin (ENB). Copies of the DGEIS will be made available pursuant to 6 NYCRR 617.12(b) and Section 176-12(A)(2)(c) of the Code and placed on the internet and the Project Sponsor's website. A Public Hearing will be held to solicit comments on the DGEIS, and the proposed Project and a minimum 30-day long public comment period will be initiated to receive written comments. Following the close of the comment period, all comments received will be reviewed and responded to in the Final GEIS. This document will also include all necessary revisions, additions and clarifications to the DGEIS.

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Chapter 5
Environmental Setting, Potential Impacts, and Mitigation

CHAPTER 5: ENVIRONMENTAL SETTING, POTENTIAL IMPACTS, AND MITIGATION

5.1 Introduction

This Chapter describes each existing component of the environment affected by the Project. These are aspects of the environment for which potential significant adverse impacts have been identified and required detailed impact analysis in the DGEIS. A description of each component of the environment is provided in sufficient detail to understand the potential impacts of the Project and the Alternatives identified in Chapter 3. Analysis of each component of the environment concludes with a discussion of mitigation measures for the Project.

The environmental components analyzed are:

- Land Use and Zoning
- Land / Geology
- Water Resources
- Vegetation and Animals
- Public Health and Environment
- Historic and Archaeological Resources
- Transportation and Circulation
- Utilities
- Air Quality
- Community Services
- Open Space and Recreation

Each environmental component for evaluation was determined during the Scoping process.

5.2 Land Use and Zoning

This section of the DGEIS summarizes the existing land use and zoning of the Site. It also summarizes the existing Village Comprehensive Plan as it relates to the redevelopment of the Site.

5.2.1 Existing Conditions

The Village of Painted Post is located in the southern tier of New York State, and the current zoning of the Village reflects a mix of residential, commercial, industrial, and recreational land uses. The primary zoning categories are:

- LDR – Low Density Residential: To delineate those areas where one-unit detached dwellings are located on large lots (12,000 square feet or larger) with public sewer and water services currently or potentially provided, while minimizing strip frontage development.
- MDR – Medium Density Residential: To delineate those areas suitable for the development of varied dwelling units, such as one and two-unit detached houses, townhouses and multi-unit dwellings while maintaining the style and character of the older Village residential areas (minimum lot size: 6,500 square feet).
- VC – Village Center: The purpose of a Village Center District is to establish, enhance and promote a cultural, social and commercial center in Painted Post with a downtown atmosphere that is pedestrian oriented. The VC District shall have a compact form that combines jobs, recreation, schools, residential types and neighborhood commercial opportunities. As an area of planned mixed-use zoning, the VC District is intended to discourage strip commercial development and encourage streetscapes, on-street parking and complementary residential and office uses located above and/or adjacent to retail and service commercial uses (minimum lot size: 6,500 square feet), compatible with the style and character of the older Village businesses and residences.
- B – Business: To delineate those areas suited for commercial use that serve primarily the residents of the community.
- I – Industrial: To delineate those areas in the Village that are appropriately suited to manufacturing, process and industrial uses, and to preserve these areas for such uses and related uses that will not create a detrimental or significant adverse impact on the environment and the welfare of the community.
- I-2 – West Water Street Development: To delineate those areas in the Village with special provisions and restrictions set by various groups. The zoned district requires individual development processes and permits specifically allowed uses.
- CL – Conservation Land: To delineate those existing substantially undeveloped portions of the Village that exhibit a rural character due to the lack of services and serious natural limitations to development, to preserve a cohesive network of open space, stream corridors, wetlands, Painted Post Zoning Law August 2019 Page 31 steep slopes and other natural habitats and to limit the use of the remaining buildable land to less intensive, agricultural, forestry, and recreational uses in conformance with the natural and man-made limitations.

- FPPO – Floodplain Protection/Recreation (Overlay): To regulate floodplain development within the Special Flood Hazard Area, as shown on the Federal Emergency Management Administration's (FEMA) Flood Insurance Rate Map (FIRM). See Local Law No. 1 for 2000, Local Law for Flood Damage Prevention (as amended.)

The Project is located entirely within the West Water Street Development district (I-2) zone, due to its particular set of restrictions and requirements related to historic uses and the deed restriction (included in Appendix C). This district was generally informed by the allowances and forbiddances of the deed restriction placed on the Project Site which allows for primarily industrial uses, with some instances of permitted commercial uses.

Under the existing zoning, the Village's requirements for land development in this district are as follows:

- Permitted Uses: Manufacturing, processing, warehousing, distribution, and related activities are allowed. Research laboratories, which are classified under Industrial Uses, are also permitted in this district. Certain commercial and accessory uses may also be permitted, such as office space or public utility or transportation use, and business uses not expressly prohibited by the deed restriction.
- Special Use Permits: Several uses within the I-2 district may require a special use permit, which involves additional review by the Village Planning Board or Zoning Board of Appeals. The types of uses that require a special use permit typically involve activities that could have significant impacts on the environment or surrounding community.
- Building Height and Setbacks: Districts have specific requirements for building heights, setbacks from property lines, and lot coverage. These requirements are designed to ensure there are adequate provisions of open space(s) for access of light and circulation of air, the facilitation for prevention and fighting of fires, the prevention of undue concentration of population, and the reduction of congestion on streets.
- Parking and Loading: The Zoning Law includes off-street parking and loading requirements under the Development Guidelines and General Provisions article based on the use and scale of operations (e.g., employees, dwelling units, or gross floor area).
- Environmental Considerations: The Zoning Law includes requirements related to stormwater management and erosion control.

The Alternative of Choice refers to development that is allowed under the existing zoning regulations without requiring special approvals, variances, or zoning changes. For the Project site, the existing zoning as Heavy Industrial (I-2) provides for development within the parameters set by the Village's comprehensive plan and zoning code. Key factors supporting the Alternative of Choice for the site:

1. Compliance with I-2 Zoning: Since the parcel is already zoned as Heavy Industrial (I-2), redevelopment or new development of the site for industrial uses (including manufacturing, warehousing, or other heavy industrial activities) is allowed by right under the existing zoning. This means no further zoning change is required to proceed with these types of uses.

2. Permitted Uses: The I-2 zoning permits a broad range of industrial activities, which aligns with the planned redevelopment for industrial or mixed-use development. If the project falls within the limits of these permitted uses, it can proceed without the need for variances or rezoning.
3. Consistency with Comprehensive Plan: The existing zoning for the site aligns with the Village's Comprehensive Plan, which identifies the area as suitable for industrial and related uses. The plan supports revitalizing and redeveloping industrial sites to enhance the local economy, making the Alternative of Choice compatible with both zoning and the Village's long-term vision.
4. No Need for Special Use Permits: Since industrial activities are allowed under the zoning law, the development does not require special use permits, provided the proposed project conforms to other specific zoning requirements like setbacks, height restrictions, and environmental controls.
5. No Need for Rezoning: The Alternative of Choice avoids the need for a lengthy and costly rezoning process, streamlining development timelines. As long as the project complies with the zoning regulations, it can move forward without additional approvals.

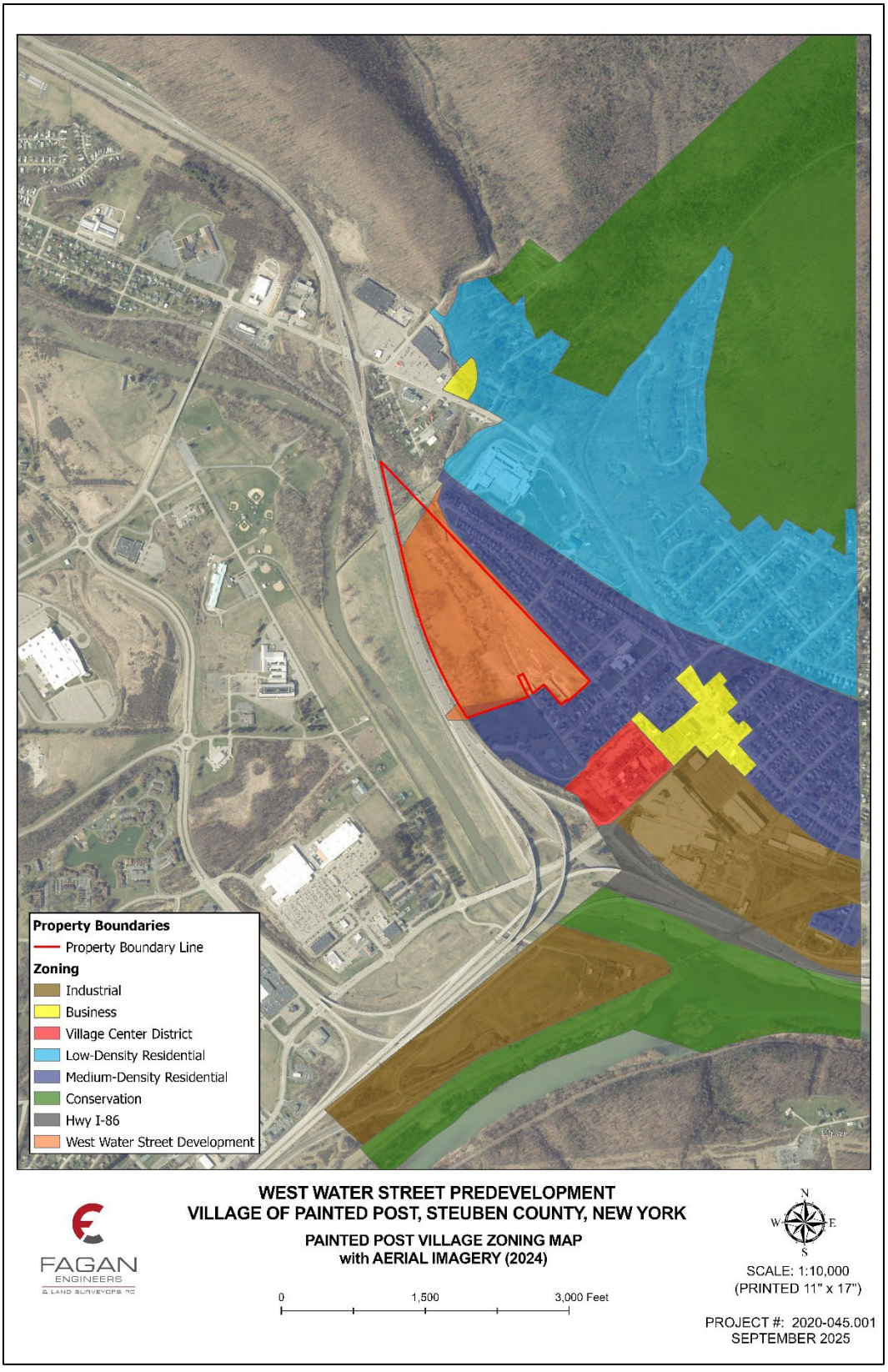

Figure 5-1: Village Zoning Districts.

5.2.2 Comprehensive Plan and Zoning

The Village Comprehensive Plan recognizes the Project Site as a strategic location that has the potential to become a “catalytic development that will transform the economy of Painted Post”. The Village is built-out, making a large parcel like the Project Site a unique opportunity to bolster economic development in the area. The Site is mentioned specifically in the Community Vision in relation to economic development and job growth. Key aspects of the vision for the site include:

- The Parcel is identified as a strategic location for economic development, with a strong emphasis on repurposing the site for industrial and mixed-use development. The site, previously used for heavy industrial purposes (notably by Ingersoll Rand), is viewed as a valuable asset that can accommodate modern industrial businesses. It is defined as the most significant developable site in the Village of Painted Post.
- The plan classifies the Site as a “Strategic Site C” meaning it is identified as an area with potential to drive community-wide revitalization. The Site has strong potential to attract businesses that can contribute to the local economy, including manufacturing and warehouse operations, as well as supporting commercial uses that complement the industrial focus. The development of this site is expected to enhance job creation, attract investment, and provide a foundation for future growth in the region.
- The Plan states that it is the goal of the Southern Tier to attract higher paying jobs with high potential from developing the foundry site. Should employees of the new development relocate to the Village, this provides opportunity to increase the median household income.
- Given the site's historic industrial contamination, the Comprehensive Plan stresses the determination if environmental remediation is necessary. This includes outlining Site restrictions with the DEC and DOH. The redevelopment process will need to address contamination issues and incorporate sustainable practices, including the management of stormwater, energy efficiency, and waste reduction. This aligns with broader regional goals for sustainable development.
- The results of a 2016 survey completed by Village residents states that one of the biggest economic issues felt in Painted Post is the lack of jobs. The Plan envisions development of the West Water Street Site as a strong opportunity to address this issue in the form of skilled jobs.
- The Plan emphasizes the need to better promote the Site, due to the strong potential the Site has to positively impact the Village of Painted Post.

5.2.3 Potential Impacts and Mitigation

The Land Use and Zoning impacts associated with the project would likely include the following:

Zoning Consistency and Modifications

- The site's current zoning supports the Alternative of Choice, which is focused on mixed-use industrial and commercial development. A considerable number of the allowable uses still require a special use permit at this time and one may be required depending on the eventual use(s) ultimately proposed on the Site. However, the Conceptual Site Layout Plan meets setbacks, lot coverage, and other bulk and density requirements, which should reduce the need for variances.
- While the Site is currently suitable for most industrial uses, there is potential for some commercial uses, as well, such as low-profile businesses, personal service establishments, and retail. The I-2 district allows mixed-use developments of the existing permitted/allowable uses; therefore, the concept plan could reflect an entirely industrial or commercial campus with a single tenant, a mix of just industrial or just commercial uses with multiple tenants, or a mix of both industrial and commercial uses.

Changes in and Compatibility with Surrounding Land Uses and Character

- Should the Site be developed with an industrial focus, the land use would likely align more with the historic use of the Site. With the incorporation of commercial uses, the land use may offer an avenue to blend better with surrounding land uses. While residential land uses existed around the former foundry while it was in operation for several decades, the subsequent period of inactivity has shifted the perception of the Site among newer generations.
- A Siemens Energy facility is active at the opposite end of West Water Street, where another former Dresser-Rand facility once operated. Village Square, considered to be the retail center of the Village and also explicitly mentioned in the Village Comprehensive Plan as a potential driver for economic development for the Village alongside the former foundry site, falls between the Project Site and the Siemens Energy industrial operations. The square was built shortly after Tropical Storm Agnes in 1972 and was an active site while the foundry was still in operation. Similarly to the former foundry site, Village Square saw eventual decline over the subsequent decades, despite community interest in its revitalization.
- Reintroducing activity on the Project Site may also reintroduce impacts such as noise, traffic congestion, and truck traffic that had been mitigated by general inactivity over several decades. These impacts may conflict with the current level of existing land uses, though the proposed action is not misaligned with historic land uses or activity in the area. Particularly for reintroducing industrial operations at the Site, mitigation measures such as, ensuring adequate buffer zones, soundproofing, and promoting incentive zoning may alleviate perceived impacts.
- Due to the period of inactivity on the Site and reduced activity in the surrounding residential and commercial areas, increased traffic as a result of a new development may necessitate improvements to transportation infrastructure, such as roadways and sidewalks, traffic management systems, and public transit facilities, to meet demand.

Environmental Remediation and Green Practices

- Though the Site has satisfactorily completed its prescribed remediation and has been delisted from the Registry of Inactive Hazardous Waste Disposal Sites, it is still subject to a Soil-Fill Management Plan and the conditions of the deed restriction. The Project aligns with the allowable uses per the deed restriction, though NYSDEC and NYSDOH should be engaged in the process for any future development to ensure proper procedure is followed to mitigate impacts to human and environmental health.
- To maximize reduction of impacts on the environment and surrounding community, stormwater management and green infrastructure practices will be utilized. The Conceptual Site Layout Plan introduces more impervious surface than what currently exists on the Site, which can increase stormwater runoff and erosion potential, as well as pose the potential for an increased heat index. Sustainable practices, such as rain gardens and bioswales can mitigate runoff while providing opportunities to add more green to absorb heat and improve air quality, and pervious pavements can promote better infiltration of stormwater.

Future Development and Long-Term Growth

The development of this critical site in the Village could help diversify the economic base and bolster future growth.

The Alternative of Choice proposes a portion of the Site to be left undeveloped to allow room for the Site to adapt to future needs or changing in demand. This will likely create a need to amend the lot coverage regulations in place depending on what those future needs are.

The rail siding also poses additional opportunity for future development and long-term growth. The approximately 2,500 feet of siding offers opportunity to distribute and receive material via rail directly adjacent to the proposed Site infrastructure. This provides the developer with an efficient method of distribution without the need of significant additional construction.

5.2.4 Alternatives to Proposed Action

The compatibility of each of the alternatives relative to the existing conditions is discussed below. These conditions include but are not limited to the existing residential, commercial and industrial land use.

5.2.4.1 No Action

Land use, zoning, and the existing remnants of the formerly active industrial buildings would remain unchanged if No Action were taken. The site would likely continue to be vacant while remaining idle and occupying a prominent setting on the entrance to the Village.

5.2.4.2 Alternative of Choice

The proposed development of the Site will result in minimal to moderate impacts on land use and zoning, as the site is already designated as its own district, West Water Street Development District (I-2). No direct negative impacts are expected from a zoning compliance standpoint, as the proposed uses fall within the parameters of what is permitted under the I-2 zoning. To minimize potential conflicts, any mixed-use components would need to be carefully designed to

ensure that the site maintains its industrial character while addressing community needs. This includes implementing buffer zones, noise control measures, and traffic management strategies to minimize impacts on adjacent properties. Careful planning and design can ensure that the industrial operations are properly screened from adjacent land uses, particularly through landscaping, buffer zones, and building placement. Additionally, traffic control measures, noise reduction strategies, and operating hours limitations can help mitigate potential impacts on surrounding communities.

5.2.4.3 Maximum Development Scenario

Increasing the density of buildings could shift the land use balance, making the site more densely developed and potentially altering its compatibility with surrounding residential, recreational, or commercial areas. While the site is zoned for (I-2), higher-density development could bring the site's operations closer to neighboring areas, raising concerns about traffic, noise, and aesthetic impacts on surrounding properties, such as Hodgman Park.

5.3 Land

This subsection of the DGEIS inventories the land features of the Site. The site is mostly open and flat. This includes grassland, paved, former foundry foundation and the rail with a few structures. Otherwise there are a few natural features including some small, wooded sections scattered throughout the Site with a 0.14 acre wetland in the center of one forested area. The Project will result in some minor physical changes to the land within the Project Site. To properly address concerns associated with changes to the land, this section will include a discussion of the soils, surface geology, and topography as well as the erosion potential and cut/fill implications for the existing site.

5.3.1 Soils

This subsection of the DGEIS inventories the existing on-site soil data. Soils on the Project Site are identified and mapped based upon soils data and mapping from USGS soil inventory data and a geotechnical study performed by Haley & Aldrich in June 2020. The existing fill is not suitable for foundation support in its current condition due to its structural properties but also because of potential contaminants present. Below the existing fill, which was found to be 2 to 13 ft thick, competent naturally deposited glaciolacustrine and glacial outwash are suitable for foundation support. The following are recommended:

- Building foundations can bear on naturally deposited soils which were encountered 2 to 13 ft below ground surface. The existing fill should be removed and replaced with imported structural fill material within the zone of influence of the foundations. The zone of influence consists of an imaginary line 1 ft beyond the bottom edge of the footing and down and out on a 1 horizontal to 1 vertical slope extending to the bearing stratum.
- Ground improvement of the existing fill, such as through Rapid Impact Compaction (RIC) or Deep Dynamic Compaction (DDC) could be implemented as an alternative to removal and replacement, so that building foundations could bear at frost depth on the improved existing fill. This would need to be implemented with additional mitigation of the potential contaminants present coinciding with the deed restrictions, Record of Decision (discussed further in Section 5.6.1) and Soil-Fill Management Plan.

These reports are included in Appendix D.

5.3.2 Surface Geology

This subsection of the DGEIS documents the existing surface geology. Surface geology on the Site was identified and mapped based upon geological data and mapping from the same geotechnical report (Haley & Aldrich, 2020). The report also describes the suitability, in general, of on-site geology to support the construction of roads, buildings, earthworks, and stormwater management facilities. Information from previously completed geologic studies include soil and bedrock classifications, rock qualities, and known fracture and joint networks summaries. These reports are provided in the DGEIS Appendix D.

5.3.3 Topography

In general, the property topography is relatively flat, with an elevation ranging from 938' to 945' across the entire site and slope slightly downwards to the west. The portion of the 48.8 acres which will be developed generally has a grade of 5% or less.

5.3.4 Erosion Potential

This subsection of the DGEIS describes the potential for short- and long-term erosion impacts. According to the 2020 geotechnical study, the Site contains mostly cut and fill, fine clay and Tioga silt loam soil which is typical of areas extending from the Cohocton River. The 2 to 13 ft of cut and fill at the surface consists of very loose fine to coarse grain sand and silt and may contain brick, wood fragments and some foundry sands. Directly under the fill material is 1 to 20 ft of native fine-grained clay material with the Tioga silt loam underlaying the clay. The Tioga silt loam consists of coarse-loamy, well-drained soil formed through flood plains. The depth of bedrock is approximately 135 to 150 ft across the site. Silt-loam soils such as those present on site, typically have a moderate K value, between 0.25 to 0.4, because they are moderately susceptible to detachment/erosion, and they produce moderate runoff. The hydrologic soil classification for these soils is A meaning the soil has a high infiltration rate, is well drained and would result in low runoff potential.

5.3.5 Potential Impacts and Mitigation

This Subsection describes potential impacts to land. An evaluation of how soils were impacted by historic uses is presented in Section 5.6, Public Health and Environment. The Project Sponsor shall employ the following additional mitigation measures to avoid or minimize impacts due to the development of the land including:

- Develop Demolition and Grading Plans as part of all Site Plan submissions. Grading plans will be developed to balance cut and fill requirements with the design intent of disposing of all excess material on-site. Excess soils created by the excavation for foundations will be utilized as fill around adjacent structures and, if structurally and environmentally suitable, in pavement areas.
- Complete construction specifications for earthwork and erosion control will be developed for each phase.
- Obtain coverage under the NYSDEC SPDES GC Permit (GP-0-025-001) for erosion and sediment control that requires the development of a Full SWPPP that includes:
    - Specific limits of disturbance (LOD) will be defined for each Phase to maintain impacts within the permitted area.
    - Develop Erosion & Sediment Control Plans as part of all Site Plan submissions.
    - Minimize wetland impacts from erosion by minimizing earthwork within 100 feet of the limits as well as protecting from excess stormwater runoff during construction.
    - Inspect for site stabilization by a qualified inspector as part of the SPDES GC Permit to achieve same.

  - Obtain written approval from NYSDEC prior to the disturbance of five acres or more at any one time. This requires additional minimum requirements including at least two site inspections every seven days by a qualified inspector.
  - Follow requirements established by the NYSDEC Soil-Fill Management Plan for the Site.
  - Adhere to any restrictions placed on the Site through the deed.
  - Obtain certification by a licensed professional engineer that attests to the construction and implementation of the SWPPP upon completion of the site construction portion for the individual phases.
  - Establish an Operation & Maintenance Manual to ensure the long-term efficacy of the stormwater management system.
- Follow any applicable excavation management plan approved by NYSDEC to manage appropriately any impacted soils encountered during construction. See Section 5.6, Public Health and Environment.

5.3.5.1 No Action

The No Action Alternative would result in no land-related impacts since no disturbance would occur.

5.3.5.2 Alternative of Choice

This alternative effectively redevelops the existing site. Therefore, there will be limited land disturbance such as erosion and potential subgrade removal to construct building foundations. These impacts would be mitigated with the establishment of typical demolition and erosion control plans. The mitigation strategies outlined above (Section 5.3.5) or this scenario.

5.3.5.3 Maximum Development Scenario

The impacts associated with this scenario are essentially the same as the Alternative of Choice but at a greater scale. Greater development would mean more ground disturbance increasing erosion potential, mitigating additional removed soil fill, a longer construction timeline and all associated additional costs.

5.4 Water Resources

This section of the DGEIS describes the existing conditions of water resources in relation to the Site. This section includes a discussion of existing surface water, the Site's hydrogeologic setting, and stormwater.

5.4.1 Surface Water and Hydrogeological Setting

This subsection of the DGEIS describes the existing water features within and adjacent to the site and pre-development conditions including on-site and off-site watershed mapping, hydrologic characteristics of the watershed, and drainage patterns. There is a small 0.14-acre freshwater pond within the Site boundaries which is classified as PUBF wetland (Palustrine, Unconsolidated Bottom, Semi-permanently Flooded). Hodgmans Creek, classified as a riverine wetland, runs adjacent to the northern boundary of the Site, separated by a levee. The Cohocton River runs to the west of the Site, separated by I-86, and converges with the Tioga River a mile southeast of site. A consultation was held with NYSDEC and US Army Corps of Engineers concerning regulatory status of all streams that may be affected by the proposed development.

5.4.2 Groundwater

According to the Haley & Aldrich investigation, groundwater was observed in the test borings during and/or shortly after drilling at depths ranging between 12.5 to 44 ft below ground surface. Three groundwater observation wells are planned for the final investigation phase so that long term static groundwater levels can be measured. Water levels can be expected to vary with seasonal change, precipitation, construction activities, and other factors. The local geology, topography, and presence of wetlands can also impact groundwater levels at the site. Water levels encountered during and following construction may differ from those encountered in the explorations and reported herein. The impacts to groundwater from historic uses are presented under Section 5.6, Public Health and Environment.

5.4.3 Stormwater

The existing stormwater conditions are modelled in accordance with the NYS Stormwater Management Design Manual to develop a baseline model. The analysis takes a watershed approach, including upstream tributary areas, to the point of discharge at the property boundary. The existing drainage conditions were modeled using the USDA NRCS Technical Release 55 (TR-55) titled Urban Hydrology for Small Watersheds and HydroCAD. This drainage area consists of mainly meadow, with some pavement and wooded areas. The Point of Study (POS) for this drainage area is a low spot located towards the south end of the property. The curve numbers, times of concentration, and areas are summarized on the following table:

Table 5.3-1
Existing Conditions Drainage Properties

Drainage Area	Area (acres)	Runoff Curve Number	Time of Conc. (min)
Existing (EDA-1)	44.80	45	22.1
Total	**44.80**		

Table 5.3-2
Existing Drainage Peak Runoff Rates

Design Storm	1-Year Storm	10-Year Storm	100 Year Storm
Existing (EDA-1)	0.00 cfs	0.31 cfs	20.23 cfs

cfs: Cubic Feet per Second

The drainage area for the developed conditions consists of the meadow and all the proposed impervious surfaces. The stormwater estimates for the project depict an increase in the peak runoff rate in the developed condition as seen below. Mitigation will be required for this drainage area. The following table describes the developed drainage areas for the Alternate of Choice and the Maximum Development scenario:

Table 5.3-3
Developed Conditions Drainage Properties

Drainage Area	Area (acres)	Runoff Curve Number	Time of Conc. (min)
Proposed (PDA-1)	44.80	62	1.9
Proposed (PDA Max Dev)	44.80	69	1.9

The estimated developed condition design storm peak runoff rates for the two development alternatives are as follows:

Table 5.3-4
Developed Drainage Peak Runoff Rates

Design Storm	1-Year Storm	10-Year Storm	100 Year Storm
Proposed (PDA-1)	0.90 cfs	44.40 cfs	170.73 cfs
Proposed (PDA Max Dev)	13.53 cfs	79.16 cfs	218.80 cfs

cfs: Cubic Feet per Second

5.4.4 Potential Impacts and Mitigation

Many of the mitigation measures incorporated into the Project to address potential impacts relate to all aspects of water resources. Therefore, the following discussion will have some overlap between surface water, groundwater and stormwater.

Since the proposed project will disturb more than 1 acre, stormwater quality and quantity mitigation measures are required under the NYSDEC SPDES program (GP-0-25-001). The proposed forebay and infiltration basin will provide water quality mitigation as required in Chapter 4 of the New York State Stormwater Management Design Manual.
The Generic SWPPP for the entire site provides specific mitigation measures for surface water / hydrogeological resources. Mitigation of stormwater will include:

- Addition of more diversion swales.
- Use of the guidance for redevelopment projects in the NYS SWMDM Chapter 9. • Runoff reduction practices in accordance with the NYS SWMDM Chapter 3.
- Traditional stormwater infrastructure such as curb, gutter, and storm sewers for collection/conveyance. Mitigation of stormwater velocity to ensure protection from erosive flows including proper groundcover protection (biological as well as structural).
- Green infrastructure mitigation which may include bioretention, planters, rain gardens, green roofs, and other infiltration practices depending on the suitability of the in-situ soils to mitigate both stormwater quantity and quality impacts.

5.4.4.1 No Action

The No Action Alternative would result in no change in surface water, hydrogeological, groundwater, or stormwater impacts.

5.4.4.2 Alternative of Choice

The proposed infiltration basin will exceed the NYSDEC requirements for mitigation compared to the existing condition. The HydroCAD output for the mitigation analysis is included in the Generic SWPPP as part of the Mitigated Condition.

The proposed infiltration basin is designed to accommodate the 100-year storm, or 1-percent-annual-chance flood event, without the need for an outlet structure. As seen in the table below, the max elevation reached by the 100-year storm is 98.27 feet for the infiltration basin. This will provide the required one foot of freeboard below the top of the proposed infiltration basin. The following table estimates the performance of the basin under the Alternative of Choice scenario:

Table 5.3-5
Stormwater BMP Summary – Infiltration Basin

Design Storm	Stormwater Inflow	Basin Discharge	Peak Elevation (ft)
1-Year Storm	0.90 cfs	0.00 cfs	96.00
10-Year Storm	44.80 cfs	0.00 cfs	96.31
100-Year Storm	170.73 cfs	0.00 cfs	98.27

cfs: Cubic Feet per Second Max Elev. = 100 ft
Infiltration Rate = 5.0 inch/hr Basin Volume = 5.944 ac-ft

5.4.4.3 Maximum Development Scenario

The following table estimates the performance of the basin under the Maximum Development scenario:

Table 5.3-6
Stormwater BMP Summary – Max Dev Infiltration Basin

Design Storm	Stormwater Inflow	Basin Discharge	Peak Elevation (ft)
1-Year Storm	13.53 cfs	0.00 cfs	96.03
10-Year Storm	76.16 cfs	0.00 cfs	96.48
100-Year Storm	218.80 cfs	0.00 cfs	98.18

cfs: Cubic Feet per Second Max Elev. = 100 ft
Infiltration Rate = 5.0 inch/hr Basin Volume = 8.194 ac-ft

5.5 Vegetation and Animals

This section of the DGEIS describes the existing flora and fauna on-site and addresses information provided by the New York State Natural Heritage Program (NYSNHP). The current site conditions consist of the following descriptions: thirty-two acres, or approximately 66% of the Site, are currently forested (14 acres/29%) or vegetated state (23 acres/47%), while 12 acres, or 24%, is comprised of the footprint where the foundry stood, roads, railway or paved areas.

NYSNHP indicated the following species of rare plants and animals identified in the vicinity of the Site:

Northern Long-Eared Bat (*Myotis septentrionalis)* – Listed as Endangered

Tricolored Bat (*Perimyotis subflavus)* – Listed as Proposed Endangered

Green Floater (*Lasmigona subviridis)* – Listed as Proposed Threatened

Bald Eagle (*Haliaeetus leucocephalus)* – Listed as Threatened

Timber Rattlesnake (*Crotalus horridus*) – Listed as Threatened

Yellow Lampmussel (*Lampsilis cariosa)* – Listed as Vulnerable (Documented 2017)

Monarch Butterfly (*Danaus plexippus)* – Listed as Proposed Vulnerable

Wild Hydrangea (*Hydrangea arborescens)* – Listed as Threatened (Documented 2003)

5.5.1 Potential Impacts and Mitigation

The project has the potential to impact a variety of flora and fauna, particularly threatened species like the timber rattlesnake and northern long-eared bat, as well as the surrounding wetlands and stream corridors.

5.5.1.1 No Action

The No Action Alternative would result in no impacts to threatened or endangered flora and animals.

5.5.1.2 Alternative of Choice

The DEC has required several mitigation strategies, including restrictions on tree cutting during sensitive periods, the creation of a Timber Rattlesnake Response Plan, and measures to protect wetlands and mussel populations. By following these requirements, the project can minimize its environmental impact and comply with environmental protection laws.

5.5.1.3 Maximum Development Scenario

Impacts associated with development are similar in scale for both development scenarios.

5.6 Public Health and Environment

This section of the DGEIS summarizes the impacts of historical uses on the Site, prior and future investigations, and identified Areas of Concern.

5.6.1 Site History and Identification of Areas of Concern

This subsection of the DGEIS provides a detailed discussion of the Site history and how historic uses have resulted in environmental contamination. Within the timeline, areas of concern are addressed and explain how studies have been completed to determine the extent of contamination in scale and frequency on site.

December 1985 – As part of the site closure, Ingersoll-Rand hired a third party to identify areas on site containing PCBs. Based on the results of samples taken, a cleanup plan was prepared to remove underground storage tanks, clean equipment, remove spent raw materials, remove wastes generated during the cleanup and studies to determine if further remedial work was necessary.

October 1987 –A Consent Order between Ingersoll-Rand and the NYSDEC is signed to meet requirements following the closing of the site.

June – August 1988 – The cleanup is completed in two phases. Phase 1 included further investigation of contaminated areas and subsequent disposal of waste material. Phase 2 included the removal of existing underground storage tanks containing Linocure A.W., Linoil 742, kerosene, gasoline and diesel fuel. Contaminated machinery and excavation of contaminated soil containing PCBs, oil, grease and lead was also performed during this phase.

January 1992 – A Phase I Groundwater Quality Assessment was performed and two borings were drilled to a depth of 82 feet to determine subsurface conditions and confirm groundwater monitoring well details for future testing.

September 1992 – A Groundwater Quality Assessment was completed including the installation of 13 groundwater monitoring wells at seven locations (some installed in same location at multiple depths). These purpose of these wells was to monitor the groundwater flow and quality at various depths and characterize the overburden and chemical composition of the soil. Some findings included elevated PAHs (especially around MW-2B), the presence of tuolene, petroleum and benzene all above NYSDEC standards.

February 1993 – A subsurface investigation is performed including a soil trenching and sampling program. Four trenches were excavated and two drums were encountered and removed. Neither of the drums included any hazardous material disposed of by Ingersoll-Rand.

1993 – Quarterly groundwater monitoring begins the second quarter of 1993 and continued for the following two years. References indicate that there are no exceedances of NYS groundwater

standards or Federal MCLs.

August 1993 – Eight soil borings are drilled around the monitoring well which indicated the presence of PAHs. Samples were taken in the fill soil (~3 foot depth) as well as below the fill in native soil. The results indicated the presence of PAHs in the fill soil and no significant presence in the native soil. This concluded that the PAHs are not vertically migrating and are not impacting the groundwater.

February 1994 – A focused feasibility study is performed and focused on the presence of trichloroethane (TCA, a groundwater contaminant). The study concluded that the groundwater beneath the site is in compliance with state and federal regulations and is unlikely to pose any health concerns to the community. The study also recommended:

- Limited groundwater monitoring at the Site
- Fencing to limit access to the Site
- A deed restriction to notify future property owners of the presence of contaminants in the vicinity of MW-2B (where PAHs were initially discovered in 1992).

March 1994 – A Record of Decision (ROD) is signed between Ingersoll-Rand and the NYSDEC. Based on the removal action completed by Ingersoll-Rand, the NYSDEC deemed the Site as no longer a significant threat to the public health or environment. The Site is reclassified from a NYSDEC Class 2 to Class 4 meaning the site is properly closed but requires continuous monitoring. This monitoring includes three years of groundwater testing for volatile organic compounds to ensure concentrations remain below the NYS drinking water standard. The criteria also includes maintaining the existing Site fencing and placing a deed restriction within a 300-foot radius around MW-2B to minimize potential for future human exposure.

August 1994 – A groundwater sampling plan is submitted to follow the aforementioned ROD agreement.

September 1997 – The groundwater monitoring report is complete and presents results indicating that the VOCs of the monitoring wells sampled are below the required NYS drinking water standard.

May 2004 – Painted Post, LLC performs an environmental investigation for property acquisition. Soil borings are completed to test the presence of PAHs within the deed restricted radius of MW-2B. Results indicate elevated concentrations of PAHs which exceed the NYSDEC TAGM (Technical and Administrative Guidance Memorandum) soil clean-up objectives. The fill also contains elevated nickel, magnesium and zinc.

September 2004 - 14 additional soil borings are drilled and samples are taken at surface, subsurface (fill and native) and groundwater. See below for a summary of the 2004 site environmental assessment:

Contaminant Tested	Number of Samples with any Contamination Found	Range of Contamination Levels (ppm)
Polychlorinated biphenyl (PCBs)	3 of 7	0.13 – 11.0
Benzo(a)pyrene (surface soil)	4 of 7	0.38 – 3.5
Benzo(a)pyrene (shallow soil)	6 of 6	0.31 – 11.0
Benzo(a)pyrene (deep soil)	4 of 10	0.38 – 11.0
Benzo(b)fluoranthene (shallow soil)	6 of 6	0.31 – 15.0
Benzo(b)fluoranthene (deep soil)	4 of 10	0.44 – 11.0

2012 - Construction of a water transloading facility began with a rail line which covered over 11 acres of the site. The purpose was to transport water to Pennsylvania for the fracking industry. Completed in 2015, it closed shortly after due to changes in need.

2015 - A Phase II Environmental Site Assessment was performed by Moody Associates (Job No. 15-107-TE). The environmental investigation of the property was performed on March 26, 2015. Ten (10) soil borings were advanced on the property using direct push equipment. Based on field detections with a photo ionization detector (“PID”) and visual and olfactory evidence, one (1) soil sample was collected from each of the soil borings. A summary of detections is:

- Detected SVOC concentrations were below the respective NYSDEC Commercial Use Standards (“NYSDEC CUS”), except for Benzo(a)pyrene in TB-10. Also note that the detection limit for TB-11 was higher than the NYSDEC CUS for two (2) parameters, Benzo(a)pyrene and Dibenz(a,h)anthracene due to matrix interference in the sample.
- Metals were detected below the respective NYSDEC CUS.
- Detected PCBs concentrations were below the respective NYSDEC CUS.

Appendix G contains copies of all environmental reports referenced in the DGEIS.

5.6.2 Potential Impacts and Mitigation

The site has been previously impacted by polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs), with certain areas exceeding NYSDEC’s soil cleanup objectives. These contaminants could pose a risk during site excavation and development activities, particularly if disturbed soils are not properly handled or disposed of.
Adherence to the existing deed restrictions and the Record of Decision (ROD) is crucial to preventing the exposure of these contaminants. If soil removal is required, contaminated material should be contained or treated on-site to prevent off-site contamination, following appropriate environmental guidelines.
Dust suppression techniques (e.g., water sprays or covering soil piles) and erosion control measures (e.g., silt fences) should be implemented to prevent the spread of contaminants into the surrounding environment during construction activities.

5.6.2.1 No Action

The No Action Alternative would not introduce any impacts to public health and the environment; however, the site will remain underdeveloped.

5.6.2.2 Alternative of Choice

The project has the potential to impact Public Health and Environment. By disturbing the Site through earth work and other construction activity, some potential impacts include:

- General construction activity creating dust which could contain contaminants such as PCBs and PAHs.
- Construction workers could come into contact with impacted media.
- Construction vehicles could transport impacted media off-site to unregulated areas.
- Stockpiled soils exposed to precipitation could transport contaminants through runoff.

All disturbances of soil (e.g., construction of new building(s), work on existing buildings, and/or utility work) would require the implementation of the Soil-Fill Management Plan and associated Excavation Work Plan and Groundwater Management Plan. All work would require monitoring excavations for potential impacted media and sampling of water and soil generated. These measures would address concerns related to transport of impacted media off-site and fugitive dust. All work would also be performed by appropriately trained personnel.

5.6.2.3 Maximum Development Scenario

Impacts associated with development are the same for both development scenarios.

5.7 Historic and Archaeological Resources

This section of the DGEIS discusses the historic and archeological resources at and around the Site. Some surrounding residences are eligible for inclusion on the State and National Registers of Historic Places. This section documents a consultation with NY State Office of Parks, Recreation and Historic Places (NYSOPRHP) to determine the existing historic and archaeological resources.

5.7.1 Potential Impacts and Mitigation

The project has little to no impact to the archaeological resources due to the majority of the site having large amounts of prior disturbance. No adjacent properties listed in or eligible on New York State and National Register of Historic Places will be impacted by this project.

5.7.1.1 No Action

The No Action Alternative would result in no impacts to historic and archaeological resources.

5.7.1.2 Alternative of Choice

There would be potential visual and audible impacts associated with the development related to the historic setting. These would be mitigated through the following:

- Visual: As described in Chapter 4, during the Village of Painted Post public forums for this project, the public was able to vote on several aesthetic options and provide their opinion on the appearance of the final development to adhere to the current Village character. These are recommended during the design to maintain the nature of the Village. Limitations on the building and lot sizes would follow the local zoning ordinances listed in Section 2.6. A vegetative buffer would also be implemented to improve the aesthetic of the development.
- Audible: Similarly to visual mitigation, a vegetated buffer zone would be used to reduce any noise created on Site. A significant increase in truck traffic is not expected for this development, should a developer require this, additional mitigation strategies will be revisited.

OPRHP has also provided the following mitigation strategies to offset any changes to the historic character of the surrounding area:

- Funding for local historic organizations and museums. Funding amounts should be commensurate with the scope and scale of long-term impacts on historic resources.
- Discuss other opportunities for historic preservation mitigation with impacted community members and historical organizations.

5.7.1.3 Maximum Development Scenario

Impacts associated with development are similar in scale for both development scenarios.

5.8 Transportation and Circulation

This section summarizes existing traffic and transportation conditions on the Site and at select intersections within the vicinity of the Site. An updated Traffic Impact Study (TIS) was prepared, building off of the 2020 TIS. The TIS assembles and reviews available traffic data from New York State Department of Transportation (NYSDOT), Steuben County, and the Village of Painted Post and describes the existing roadway system serving the Project Site, including roadway conditions, traffic controls, and signal timing. This section also includes discussion of existing multi-modal connectivity at the Site, including existing rail, pedestrian, transit, bicycle, emergency, and ADA access around and to the Site.

5.8.1 Daily Corridor Traffic Conditions

This subsection of the DGEIS describes all intersections connecting the Site to the existing street network. An inventory of existing roadway network, peak traffic volumes and associated Level of Service (LOS) has been completed and is updated. The 2020 TIS included the following intersections to be analyzed during peak hours:

- S Hamilton Street and NY 17 SB Ramp
- S Hamilton Street/N Hamilton Street and NY 17 NB Ramp
- N Hamilton Street and Water Street
- N Hamilton Street and E/W High Street
- Water Street and Village Square
- Water Street and Steuben Street
- Water Street and Charles Street

Upon review of the draft scoping document, NYSDOT requested an expansion of the traffic scope to include NYS I-86 Exit 44B and updated traffic counts for the TIS. Manual traffic counts were collected between 6/10/2025 and 6/24/2025. Traffic data was collected between the hours of 7-9AM and 2-4PM to encompass school and work traffic. This data was then used to calculate the Am and PM Peak Hour Traffic.

The study intersections were modelled for the following scenarios:

- Existing Traffic Condition (2025)
- Background Traffic Condition (2030) – Assumes a 1% Annual Growth Rate
- Developed Traffic Condition (2030) – Alternate of Choice
- Developed Traffic Condition (2030) – Maximum Development Scenario

The trips generated by both scenarios were estimated utilizing the Institute of Transportation Engineers (ITE), Trip Generation Manual, 8th Edition. The average rates for ITE Land Use #770 Business Park were referenced to calculate trips for daily conditions and for the AM and PM peak hour of adjacent street traffic. The Alternate of Choice is estimated to generate 350 vehicles per

hour (vph) during the AM Peak hour and 349 vph during the PM Peak hour. The Maximum Development Scenario is estimate to generate 492 vph and 481 vph, respectively. The distribution of new trips generated by the proposed Alternative were based on the proximity of nearby populations and the expected route taken to get to the proposed development.

Highway Capacity Analyses in the assessment were performed based on the methodology defined in the Transportation Research Board, Highway Capacity Manual, HCM 2010, using Trafficware's Synchro 12 software. Traffic operations are represented by a Level of Service (LOS) which is defined in terms of delay. It is a qualitative measure of speed and travel time, freedom to maneuver, traffic interruptions, and driver comfort and convenience. The LOS levels are defined as follows:

Level of Service	Average Control Delay (sec/vehicle)	Description
A	≤10	Free Flow
B	>10 - 20	Stable Flow (slight delay)
C	>20 - 35	Stable Flow (acceptable delays)
D	>35 - 55	Approaching Unstable Flow (tolerable delay)
E	>55 - 80	Unstable Flow (intolerable delay)
F	>80	Forced Flow (congested and queues fail to clear)

The tables below provide a summary of overall intersection LOS estimates. A review of the intersection LOS and delay between the no-build and build scenarios for the existing and future conditions suggests the following:

- The only decrease in LOS at any intersection was between the 2030 Background Condition and the developed Alternative, would be from an LOS A (free flow) to an LOS B (stable flow with unaffected speed) at I-86 Exit 44 and South Hamilton.

Table 5.7-1
AM Peak Hour Intersection LOS

AM Intersection LOS				
	Existing Condition (2025)	**Background Condition (2030)**	**Alternative of Choice (2030)**	**Maximum Development Alternative (2030)**
I-86 Exit 44/S. Hamilton	A	A	B	B
I-86 Exit 44/N. Hamilton	C	C	C	C
N. Hamilton/W. Water	A	A	A	B
High St./Steuben St. (ICU)	A	A	A	B
High St./N. Hamilton	B	B	B	B
Pulteney/Exit 45 Off-Ramp	B	B	B	B
Pulteney/Exit 45 On-Ramp	A	A	B	B

Table 5.7-2
PM Peak Hour Intersection LOS

PM Intersection LOS				
	Existing Condition (2025)	Background Condition (2030)	Alternative of Choice (2030)	Maximum Development Alternative (2030)
I-86 Exit 44/S. Hamilton	B	C	C	C
I-86 Exit 44/N. Hamilton	C	C	C	C
N. Hamilton/W. Water	A	A	B	B
High St./Steuben St. (ICU)	B	B	B	B
High St./N. Hamilton	C	C	C	C
Pulteney/Exit 45 Off-Ramp	B	B	B	B
Pulteney/Exit 45 On-Ramp	A	B	B	B

The full TIS with analyses are included in Appendix I.

5.8.2 Pedestrian and Bicycle Facilities

The adjacent roadway network (including West Water Street, North Hamilton Street, Steuben Street and Charles Street) contains four-foot, concrete sidewalks separated from the road with a six to eight foot wide green landscaped buffer. Pedestrian facilities on the adjacent network, including crosswalks and pedestrian signals, are located at every major intersection. There are no dedicated bicycle lanes except for sections of NYS Route 417, however the roadway widths are adequate to accommodate bicycle traffic.

The proposed sidewalks on the Site Plan accommodate employees and visitors from the parking area to the buildings. The recommendation for the future development is to ensure safe, accessible, and efficient movement for people traveling via alternative modes, such as on foot or by bicycle to the Site. Here are the key facilities recommended to the developer to add to the site plan:

- Provide continuous sidewalks along all main roadway and access points to ensure pedestrians can move safely throughout the Site.
- Ensure sidewalks connect major destinations within the site, such as entry points, buildings, and parking areas.
- Mark clear crosswalks at all intersections, entrances, exits, and within the parking lot(s). Make sure crosswalks are wide and well-lit to improve visibility for pedestrians.
- Install adequate lighting along pedestrian routes, particularly near entryways and high-traffic areas, to ensure safety during evening and night hours since the site will be active for two shifts.
- Use reflective or highly visible pavement markings for crosswalks and pedestrian pathways.

- Incorporate trees and benches or rest areas along longer pedestrian routes, especially in areas with heavy foot traffic or near public transit stops. These can enhance comfort and encourage walking.
- Provide ample bike racks at key locations such as building entrances. These should be placed in well-lit areas for safety.

5.8.3 Transit

The Corning Erwin Area Transit System (CEATS) is a flag-stop public transportation service for Corning, South Corning, Erwin, Painted Post, Riverside, Gang Mills, Gibson, and Coopers Plains. CEATS routes take riders to Corning Community College, work centers, health clinics, Guthrie Hospital, retirement homes, shopping centers, restaurants, and entertainment areas within the service area. The Site is not currently directly served by CEATS; however, the Route 5 bus can be flagged roughly 0.5 miles from the Project Site. Should the Site be developed and transit demand be generated, the Village may opt to work with CEATS to evaluate potential future stops that more directly service the Site.

5.8.4 Parking

The proposed development includes the provision of 452 parking spaces to accommodate the needs of employees, visitors, and service vehicles. The Traffic Impact Study (TIS) estimates 350 vehicles per hour during the peak hour, which serves as the basis for determining the required parking capacity for the site. The design of the parking areas has been planned to ensure that there is sufficient capacity to meet peak demand, while also addressing future flexibility and site efficiency.

In alignment with the principle of efficient land use, the site plan proposes parking areas designed with flexibility in mind. Rather than constructing the full complement of parking spaces immediately, the design includes undeveloped parking banks in areas where parking demand may not reach its peak during the initial phases of development. These "parking banks" will allow for the future expansion of parking facilities as needed, reducing the environmental and aesthetic impacts associated with unnecessary paved surfaces.

This approach allows the project to:

- Minimize impervious surface area, reducing the potential for stormwater runoff and enhancing the site's sustainability by preserving green space.
- Respond dynamically to changing parking needs, ensuring that additional parking is constructed only when demand justifies it, in compliance with the principles of smart growth and sustainable urban design.

The decision to include 452 parking spaces accounts for potential employee turnover, visitor traffic, and future expansion, ensuring that the site is adequately equipped to accommodate the traffic flow projected in the Traffic Impact Study. However, based on the TIS findings, it is anticipated that the full capacity of parking spaces will not be required immediately, and the

inclusion of parking banks will allow for the construction of additional spaces in response to actual demand over time.

In addition to careful parking planning, the project will incorporate transportation demand management (TDM) strategies to further mitigate the potential impact on traffic. These strategies may include promoting carpooling, incentivizing the use of public transportation, and offering bike facilities to reduce reliance on private vehicle use. These measures will help maintain a balanced parking-to-traffic ratio, reducing congestion and supporting the long-term sustainability of the site.

5.8.5 Emergency Access

The design of the Site Plan ensures full accessibility for emergency vehicles, including larger fire apparatus with substantial turning radii. The site plan incorporates wide access roads, clear turning radii, and unobstructed routes to allow safe and efficient access for emergency vehicles in all areas of the site. Roadways and entrances have been designed to accommodate the maneuverability of large fire trucks, emergency response vehicles, and other service vehicles. Additionally, turning templates have been used to confirm that the layout meets the required dimensions for emergency vehicle operations, ensuring that fire safety and emergency response capabilities are not compromised. These measures are integral to providing a safe environment for all users while maintaining swift and effective emergency access.

5.8.6 ADA Access

The proposed development will prioritize Americans with Disabilities Act (ADA) accessibility to ensure that all individuals, regardless of ability, can safely and easily access the site. The project will incorporate ADA-compliant pathways, including sidewalks, ramps, and crosswalks designed to accommodate individuals with mobility impairments. Additionally, all public areas, including entrances, restrooms, and parking areas, will be designed to meet or exceed ADA standards for accessibility. The site will also provide accessible parking spaces and ensure that signage and wayfinding systems are clear and easily navigable for individuals with disabilities. These measures will ensure that the site is inclusive and fully accessible to all users, in alignment with federal and state accessibility guidelines.

5.8.7 Potential Impacts and Mitigation

Overall, the traffic analysis indicates that the proposed development will not have significant negative impacts on local traffic or intersection performance, and recommended improvements will help maintain the smooth flow of traffic in the area. The TIS identifies the following potential impacts:

- The intersection of S. Hamilton Street & Highway I-86 Eastbound Ramps shows a drop from an LOS of D to F for the Eastbound Hamilton left turn approach during PM conditions due to the lack of a protected left turn phase. Although the LOS worsens with the development scenarios, the existing 2030 condition demonstrates unstable flow with considerable delay with no development in place.

- The intersection of N. Hamilton Street & Highway I-86 Westbound Ramps shows a drop in LOS from D to E for the Exit 44 Northbound left turn between the no build and build conditions.
- The 2030 maximum development alternative indicates an exceedance in storage capacity for two turns at the intersection of N. Hamilton and W. Water Street when analyzing the 95th percentile queue volumes. This is seen in the N. Hamilton Street north bound left turn in the AM conditions (119 feet) and the W. Water Street east bound right turn in the PM conditions (135 feet).

5.8.7.1 No Action

The No Action Alternative would result in no change in transportation and circulation.

5.8.7.2 Alternative of Choice

Intersection LOS for the key study areas were mostly unaffected, with some instances of a single level decrease in LOS from the Existing Condition (2025) to the Alternative of Choice (2030). However, when comparing the Background Condition (2030) to the Alternative of Choice (2030), the number of LOS decreases are reduced.

The following lane LOS impacts can be mitigated by applying the following:

- Evaluate a protected left turn phase at the intersection of S. Hamilton Street & Highway I-86 EB Ramps. There is a significant quantity of left turning traffic accumulated during the PM peak hour.
- Extend the left turn signal duration for the I-86 WB off-ramp. An evaluation of the Exit 44 NB left turn timing demonstrates an improvement in lane LOS when the signal is extended from the current 30-second interval to 45-seconds for both the No Build and Build Alternatives.

5.8.7.3 Maximum Development Scenario

The impact difference between the two development scenarios, Alternative of Choice (249,000 SF) and Maximum Development Alternative (352,800 SF), primarily lies in the volume of traffic generated and the corresponding effects on intersection performance, roadway capacity, and the Level of Service (LOS) at key intersections. Most intersections maintain an acceptable LOS, but there is a greater impact on LOS compared to the Alternative of Choice. The S. Hamilton Street & Highway I-86 EB Ramps intersection, for example, could see a decline to LOS B during PM conditions due to the increased number of vehicles.

The queue 95th percentile volume exceeding the storage capacity at the intersection of N. Hamilton and W. Water Street in the maximum development condition can be eliminated by extending the signal timing of the N. Hamilton Street protected left turn from 10-seconds to 15-seconds. As well as extending the signal timing for W. Water Street from 15-seconds to 20-seconds.

5.9 Utilities

This section of the DGEIS summarizes the existing conditions of water supply, sanitary sewers, storm sewers, gas, and electric, telephone, cable television and internet.

5.9.1 Water Supply

Consultation with the Village Department of Public Works indicated that there is adequate capacity and pressure in the water system. The Site contains significant public water infrastructure with 8-inch DIP CL 52 watermain bordering the south and west property lines and a 10-inch DIP CL 52 watermain along Chemung Street. The Alternate of Choice is estimated to consume between 24,900 and 48,300 gallons per day (gpd) based on the NYS Design Standards for Intermediated Sized Wastewater Treatment Systems Table B-3: Typical Per-Unit Hydraulic Loading Rates. The Site was formerly intended to provide transloading of public water at high volumes; as such, the existing infrastructure is sufficient to provide public water to the Site at the estimated consumption rate. The Village's water model estimates the on-site hydrant fire flow availability as over 3,800 gallons per minute (gpm).

5.9.2 Sanitary Sewers

Consultation with the Village Public Works Department indicates that there is adequate capacity with a connection to the existing terminal manhole located at the end of West Water Street within the project parcel.

5.9.3 Stormwater Infrastructure

There is little to no active storm sewer infrastructure located on-site. As per Chapter 5.4, a Generic Stormwater Pollution Prevention Plan (SWPPP) has been developed for the site. The SWPPP demonstrates that stormwater runoff can be wholly contained on-site for both development scenarios.

5.9.4 Natural Gas

The existing natural gas utilities on-site have been mapped. NYSEG will be consulted regarding system capacities and existing infrastructure conditions once the development is in the design phase.

5.9.5 Electric, Telephone, Cable TV, and High Speed Internet

The site is served by NYSEG for electric by a 3-phase line with an operating voltage of 4.9 kV and 1.29 MVA feeder load capacity. Verizon, Spectrum, and, in the near future, Empire Access, provide high speed broadband internet service to the Project Site.

5.10 Community Services

This section discusses how the Project area impacts the surrounding community services including government facilities; educational facilities (e.g., school, etc.); cultural facilities (e.g., libraries, etc.); religious facilities; hospitals, health and welfare facilities; and emergency services (police, fire and EMS).

5.10.1 Potential Impacts and Mitigation

The proposed development is expected to have minimal impact on local community services, particularly in areas such as government facilities, educational institutions, cultural and religious facilities, and healthcare services. Any potential impacts are outweighed by the substantial increase in the tax base generated by the project, which will help support and improve local services. Below is an assessment of how the development might affect these community services:

Government Facilities
The increase in population and business activity may slightly raise the demand for local government services such as permitting, public administration, and waste management. However, this demand is expected to be manageable given the industrial nature of the project.

The increase in tax revenue from the project will provide additional resources to local government operations, allowing for improved infrastructure and services to support the community. This enhanced funding will help ensure that any additional service demands are met effectively.

Educational Facilities
Given the industrial focus of the project, there is little to no direct impact on the Corning-Painted Post School District (CPPSD), as the development is not expected to bring significant new student enrollment. However, the arrival of new employees or residents in the area (if mixed-use components are included) could indirectly increase demand for local schools.

The increase in local property and business taxes will provide a strong financial base to support school funding and potential school expansions if necessary. The project's economic benefits will help ensure that educational services remain robust despite any slight increase in demand.

Cultural and Religious Facilities
The development is unlikely to place significant pressure on cultural and religious facilities. The increase in workforce and visitors will likely not affect the demand for such services directly.

The additional tax revenue generated from the development can be allocated to local cultural and community programs, ensuring continued support for these facilities and possibly expanding opportunities for community engagement and cultural activities.

Health and Welfare Facilities (Hospitals, Clinics, etc.)
Although the industrial focus of the project may increase demand on healthcare services,

especially in emergency care or routine medical services, the overall impact will likely be modest.

The growth in the tax base from the project will help local healthcare providers and emergency services maintain and expand their capacities, ensuring they are equipped to meet any increased demand. Additionally, the project could stimulate partnerships with health services, providing further opportunities for improvement.

Emergency Services (Police, Fire, EMS)
The increase in traffic, workforce, and activity may place a slight demand on police, fire, and emergency medical services (EMS). However, this demand will be manageable with adequate planning, as industrial developments typically do not have the same level of strain on emergency services as residential areas might.

The increase in tax revenue will support local emergency services, providing funding for necessary infrastructure upgrades and resources, such as fire apparatus access, emergency response equipment, and personnel training to address the needs of the new development. The development is expected to strengthen the local safety infrastructure in the long term.

5.10.1.1 No Action
The No Action Alternative would result in no construction or modification of the Site, reducing the tax base that would otherwise increase with the development of the Site. Although the population and number of employees in the Village may increase as a result of other current and future developments, the increase in tax base from the Project will provide is likely greater and more concentrated than on any other site in the Village due to the size of the Site and nature of the Project. The No Action Alternative would not introduce a population on Site who would utilize and require the existing emergency, government, educational, cultural, or religious services that currently exist and serve the Site.

5.10.1.2 Alternative of Choice
The development of the Alternative of Choice would entail transforming a vacant lot into an industrial/commercial complex. This alternative would result in an increase in the number of people employed at the Site and its visitors. This additional activity would have minimal impact on the local community services. However, this alternative would increase the tax base, thereby increasing the revenue for the Village and County Governments, as well as for CPPSD

This alternative would result in no significant impact on the existing educational facilities. There is potential for employees to relocate to the area and enroll their children in the school system. Some employees may also choose to partake in the extensive cultural or religious facilities during their non-work hours. This alternative would likely result in a low/moderate impact on the existing health care services depending on the number of employees and the type of work that would be conducted.

5.10.1.3 Maximum Development Scenario

The Maximum Development Scenario assumes an increased density to the employee population. This alternative would result in the greatest increase to the tax base, thereby having the largest increase in revenue for the Village and County Governments, as well as CPPSD. Impacts associated with development are similar in scale for both development scenarios.

5.11 Open Space and Recreation

This Section discusses existing open space and recreation areas within and adjacent to the Site, including parks, trails, and other resources. Open space in urban environments is generally characterized as encompassing publicly accessible vegetated areas suitable for passive or active recreation.

The Project Site is situated directly adjacent to Hodgman Park in the Town of Erwin, New York. This 13.25-acre park is a significant recreational resource for the local community and provides a wide range of amenities, including:

- Paved Trails for walking, jogging, and cycling provide a well-maintained recreational route for residents and visitors.
- Basketball Courts and Box Lacrosse Facilities support team sports and community events, providing active spaces for local youth and adults alike.
- Playground Area for children, offering a safe environment for recreational activities.
- Picnic Pavilion provides space for community gatherings, outdoor meals, and events, contributing to social interaction and leisure activities.

Given the proximity to Hodgman Park, the recreational and open space needs of the proposed development are well supported by the existing facilities. The park's amenities are within short walking distance from the site, connecting employees and visitors to convenient, high-quality outdoor recreation. Craig Park and the Painted Post/Riverside Trail are also within 1,000 feet of the Site providing an opportunity for recreational activities as well as a method to travel to the Site from the surrounding area via walking or cycling.

5.11.1 Potential Impacts and Mitigation

Open space currently exists within the Site; however, public access has historically not been permitted as a condition of the ROD. The proposed development does not pose impacts to public open space or recreational facilities. The Site's open space was integrated into the proposed layout and is intended to provide additional green space that can be utilized by employees and visitors, should the dedicated areas be deemed to not pose any health risk. No new recreational facilities are planned.

5.11.1.1 No Action

The No Action Alternative would result in no impacts to existing open space or recreation.

5.11.1.2 Alternative of Choice

Impacts associated with development are minimal to open space and recreation.

5.11.1.3 Maximum Development Scenario

Impacts associated with development are similar in scale for both development scenarios.

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Chapter 6
Irreversible and Irretrievable Commitment of Resources

CHAPTER 6: IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The following section outlines the irreversible and irretrievable commitment of environmental resources that will be lost, converted, or made unavailable as a result of the West Water Street Predevelopment Project. This assessment includes both the construction phase and the operating phase of the project and evaluates the long-term impacts of resource use.

Irreversible Commitments During Construction and Renovation

The construction, renovation, and reuse of the site will require the consumption and conversion of certain resources that cannot be reclaimed for other uses. These commitments include:

Materials: The project will necessitate the use of substantial quantities of materials such as fill, building supplies (e.g., concrete, steel, glass, wood), and construction aggregates. Once these materials are used in the construction process, their conversion to another form or use will be highly unlikely, making them irreversibly committed to the project.

Energy: The energy required to power construction equipment, including gasoline and diesel-powered machinery, will contribute to the irreversible commitment of non-renewable energy sources. The project's construction phase will also consume electricity for machinery, lighting, and facilities, further increasing demand for fossil fuel-based energy.

Water and Utilities: The water required for construction activities, including mixing, curing, and general use, will be irretrievably committed. Similarly, electricity and gas consumption during construction and operation will deplete resources, with energy from fossil fuels likely used to power equipment and systems. The construction phase will also lead to an irreversible commitment of sewage treatment capacity and solid waste disposal systems, as the waste generated during the process will require treatment and disposal.

Labor and Capital: The labor and capital investments required to develop, construct, and operate the project are irretrievably committed, as these resources (human and financial) are expended during the construction and operational processes. Although the labor force and financial capital may be directed toward other projects in the future, the specific human effort and capital allocated to this project cannot be recovered or redirected.

Resources Committed During Operation

The operational phase of the project will continue the commitment of resources that were initiated during construction and renovation. These include:

Energy: Once operational, the project will require ongoing energy to power lighting, heating,

cooling, machinery, and other systems. While efforts will be made to incorporate renewable energy sources and energy-efficient technologies, the operational phase will still rely on non-renewable energy sources such as electricity from fossil fuel-based grids.

Water: The continued use of water for daily operations, including domestic use, cooling, and landscaping, will constitute an ongoing commitment of resources. Water will be consumed by the buildings, tenants, and operations, and while water conservation strategies will be employed, the total demand will remain a committed resource.

Waste Management: The operation of the site will generate solid waste and sewage, which will require treatment and disposal, further committing waste management resources. The amount of waste will depend on the scale of operations, but ongoing commitments to waste management will be necessary for the project's life cycle.

Mitigation through Sustainability and Resource Efficiency

While the project requires the commitment of significant environmental and human resources, efforts will be made to minimize environmental impacts and optimize resource use through a Sustainability Program. This program will include:

Use of Renewable and Recyclable Resources: Efforts will be made to maximize the use of recyclable materials such as concrete, lumber, glass, ductile iron, and copper during construction and renovation. By prioritizing sustainable building practices and minimizing waste, the project aims to reduce the environmental burden of resource extraction and consumption.

Green Building and Energy Efficiency: The development will incorporate green building strategies, including energy-efficient designs, high-performance insulation, and low-emission materials. Additionally, renewable energy sources, such as solar panels and geothermal systems, will be explored to reduce reliance on non-renewable energy.

Stormwater Management and Open Space: The project will improve stormwater management systems, incorporating permeable surfaces, rain gardens, and bioswales to minimize the impact of runoff. The inclusion of parks and open spaces will help maintain ecological balance and enhance the community's quality of life.

Economic and Community Benefits

The financial commitment required for the project represents long-term beneficial effects rather than irretrievable commitments. The project is expected to generate:

Economic Growth: The redevelopment will stimulate job creation during both the construction and operational phases, benefiting the local workforce. New businesses in the park will create

additional jobs and economic opportunities, providing a boost to the local economy.

Tax Revenue: The project will increase the property tax base for the Village of Painted Post and Steuben County, providing much-needed revenue for local government services and infrastructure improvements. The increase in land values surrounding the site will further contribute to the economic vitality of the region.

Quality of Life: The project's focus on improving infrastructure, stormwater management, transportation access, and green spaces will enhance the quality of life for local residents and workers. The economic stimulus generated by the project will lead to improvements in public services, including education, healthcare, and recreational facilities, benefiting the broader community.

Conclusion

While the West Water Street Predevelopment Project will result in the irreversible and irretrievable commitment of certain environmental resources, these impacts will be minimized through sustainable development practices and resource-efficient technologies. The long-term economic and community benefits, including increased property values, job creation, and improved infrastructure, will outweigh the resource commitments required for the construction and operation of the site. Through thoughtful planning and mitigation efforts, the project will balance the need for development with a commitment to environmental stewardship and community well-being.

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Chapter 7
Unavoidable Adverse Impacts

CHAPTER 7: UNAVOIDABLE ADVERSE IMPACTS

While the Project aligns with many needs and goals of the Village Comprehensive Plan and would result in significant benefits, there are some adverse impacts that are likely to occur. However, because of Project design and the mitigation measures incorporated into the Project, the adverse impacts will not be significant.

7.1 Short-Term Unavoidable Adverse Impacts

Certain construction-phase impacts constitute short-term unavoidable adverse impacts and include:

- Soil Erosion – Clearing and grading of the Site will result in the removal or import of earth material. Disturbance to the ground cover and the movement of vehicles/equipment during construction pose the potential for soil erosion. This will be minimized with the development of a generic SWPPP for the entire Site. With this mitigation measure in place, adverse impacts from soil erosion will not be significant. See Sections 5.3 and 5.4.
- Solid Waste – Construction related solid waste will be generated even though the Project will emphasize reuse and recycling during the construction phase. The wastes that are not being reused or recycled will be handled in accordance with all local, state, and federal regulations. With minimal material being removed from site and an emphasis on reuse / recycling of construction this impact is not anticipated to be significant.
- Noise / Emissions – Noise, emissions and vibration will be generated during construction from construction and worker traffic, heavy equipment operation and delivery vehicles. Construction hours will be limited in accordance with Village Code.
- Traffic – Traffic volumes will increase from the movement of construction workers and off-site construction equipment. This impact will be minimized with the development staging areas, keeping the impact from being significant. See Section 5.8.

7.2 Long-Term Unavoidable Adverse Impacts

Overall, the Project will have significant positive long-term impacts. The Project will transform a vacant, underutilized parcel impacted by historical use into a useful mixed-use industrial/commercial site. However, as with any sizable development, there will be long-term impacts. For this Project, unavoidable impacts include:

- Topography – Site topography will be modified by grading. Due to the relatively flat nature of the site, this will be minimal. Any impacts will be minimized with proper mitigation measures defined in the SWPPP. See Sections 5.3 and 5.4.
- Ecology – Depending on the scale and location, the Project may result in a change of

habitats found on the Site and natural areas will be decreased. There is potential to impact a variety of flora and fauna, particularly threatened species like the timber rattlesnake and northern long-eared bat, as well as the surrounding wetlands and stream corridors. See Section 5.5 for more details.

- Traffic - There will be an increase in traffic volumes including truck traffic which will be limited to hours of operation. Minor intersection timing improvements are recommended to increase intersection capacity and minimize changes to traffic flow quality. Recommendation are also provided to promote alternate modes of travel such as walking and cycling. See Section 5.8 for more details.
- Public Water – Water consumption will increase. There is sufficient capacity in the public utility and buildings will be designed to incorporate green practices, which will reduce water consumption. Some of the recommended practices include: rain gardens and bioswales which can mitigate runoff while providing opportunities to add more green to absorb heat and improve air quality, and pervious pavements can promote better infiltration of stormwater. For additional details, see Section 5.9.
- Stormwater – Existing drainage patterns will be altered. A stormwater collection, conveyance, and mitigation system will be provided in accordance with the NYSDEC Stormwater Design Manual and will use green practices where practical. A SPDES General Construction Permit (GP-0-25-001) will be obtained. See Section 5.4.
- Wastewater – The Project will generate wastewater; however sufficient capacity exists in the downstream collection system. See Section 5.9.
- Emissions - With an increase in vehicle traffic, particularly with heavy vehicles, vehicle emissions will increase. Traffic mitigation measures will be put in place to prevent significant overall impacts to levels of service and increased idling time. Vehicle-related emissions will not be considerably different than existing conditions. Greenhouse gases from building and operational emissions will not be considerable and could be further mitigated through the use of renewable energy sources and efficiency techniques. See Sections 5.8 and 9.0.
- Energy Use – The Project will require energy use above existing levels; Energy providers will be consulted regarding system capacities and existing infrastructure conditions once the development is in the design phase.
- Community Services – There will be an increased need for community services (fire, police, and ambulance emergency services). Increased tax assessments can increase revenues to each community service provider. In consultations with providers, it was determined all services have sufficient capacity to serve the Project. See Section 5.10.
- Solid Waste – Solid waste will be generated; however sufficient capacity at permitted solid waste management facilities exists. The Project will incorporate green strategies to reduce

the generation of non-recyclable and non-reusable wastes. See Section 5.2.3.

- Community Character – The Project will alter the existing community character surrounding the Site with development on Site. However, the Project will incorporate green strategies to reduce the impacts and landscaping to blend the commercial character of the Site with the surrounding community character. See Chapter 8.

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Chapter 8
Growth Inducing Aspects and Character of Community

CHAPTER 8: GROWTH INDUCING ASPECTS AND CHARACTER OF COMMUNITY

"Growth Inducing Aspects" refers to the likelihood a proposed action sets into motion further development in the community that may be triggered by relocating or creating employment; or increasing the infrastructure capacity of the area thereby increasing development potential. The Project provides the opportunity for significant investment and growth within the Village. Through the development of a large, underutilized site, the West Water Street Industrial Site will function as a lively, mixed-use commercial/industrial park with extensive possibilities. The potential impacts of such growth and the effect on the character of the community are examined below.

8.1 Community Character / Urban Form / Visual Impacts

Some needed improvements to infrastructure, including water and sewer lines, open space, sidewalks, and parking will be limited to the Site. Other items such as roadway and traffic design may require off-site improvements. This expansion of infrastructure capacity beyond would be minimal to support development within the Site. As described in Section 5.4, the Project will update the Site's stormwater infrastructure by implementing a series of controls to filter and reduce the runoff. Currently, much of the runoff drains unfiltered into tributaries of the Cohocton River. As described in Sections 5.4 and 5.9, the Project will develop a full SWPPP. While the Project will offer amenities for workers, the increased Site presence will present a demand on existing community services. As set forth in Section 5.9, adequate capacity is expected to accommodate that demand and infrastructure in the surrounding neighborhoods are sufficiently developed. Thus, the on-site infrastructure improvements associated with the Project will not induce additional community demand.

The Project will affect the character of the surrounding neighborhood through the transformation of this sizable, undeveloped property into an active commercial/industrial area. As part of the transition from vacant to active, the Site will see a notable increase in its activity and hours of operation. Section 5.8 describes the Project's potential impact on traffic, including possible reductions from an emphasis on alternative modes of travel, such as the CEATS bus system, walking, and biking.

The Project is compatible with the Village's vision and desired community character, as described in the 2017 Comprehensive Plan. The Village is largely built out with limited opportunities for growth and there is a strong desire to focus development in areas that promote productive, sustainable spaces and support economic growth. The Village encourages the preservation of natural areas and integration of new developments with the community. Development of the Site should align with the needs of residents and enhance the overall livability of the area. The Plan classifies the Site as a "Strategic Site C" meaning it is identified as an area with potential to drive community-wide revitalization. The Plan states that it is the goal of the Southern Tier to attract higher paying jobs with high potential from developing the foundry site. Should employees of the new development relocate to the Village, this provides opportunity to increase the median household income. *This site is listed as strategic due to the potential of becoming a "catalytic development that will transform the economy of Painted Post" (BOA, 2017). This site is the most significant developable site in the Village of Painted Post.*

The Village sees the Site as an opportunity to help support economic growth within Steuben County. The Project meets these goals. While the surrounding neighborhood will experience increased activity, its nature will not change. By incorporating the Village's vision for the Site into the Project design standards, visual and community character will be maintained. This character is a blend of the residential area surrounding the Site and the existing commercial/industrial area represented by the Village Square and Siemens Facility along West Water Street. See Section 5.2.

The Project will also enhance recreational opportunities for workers and visitors of the Site. As Section 5.11 describes, given the proximity to Hodgman Park, the recreational and open space needs of the proposed development are well-supported by the existing facilities. The park's amenities are within walking distance from the Site, ensuring that employees and visitors will have convenient access to high-quality outdoor recreation.

8.2 Economy / Tax base

The Project will increase workers and visitors to the Site. This additional presence will support the local economy, including nearby commercial corridors such as the Village Square, downtown businesses and other shopping venues in the Village. The Project could also stimulate additional growth in Village and State economies, primarily due to employment and fiscal effects during the construction and operation of the Site.

The Project will have both direct and indirect economic effects. Direct effects include jobs created by construction efforts and the earnings of contractors and their employees hired to do the work or supply materials. It also includes an increase of tax base and revenue. These impacts are estimated based on the Project's anticipated construction cost of $50 million. At a rate of 6 to 10 construction jobs per $1 million in construction costs, the Project is projected to create an estimated 300 to 500 construction jobs over its duration. Using the NYS construction employment multiplier of 2.24, the total direct and indirect jobs that will be created or maintained is projected to be a total of up to 1,120 jobs (this number does not distinguish between full time and part time jobs over the construction period) or 224 jobs per year assuming a 5 year construction period. These estimates are based on rough construction costs and industry rules of thumb. They should be considered an order of magnitude estimate.

After construction, the Project will provide jobs and economic stimulus. Operational impacts are projected based on the number of jobs and salary levels derived from anticipated build-out. This analysis is based on Project usage, not specific tenants. It is estimated that approximately between 450 and 890 new jobs will be added following the construction phase as a result of the Project. The developed site is expected to include approximately 249,000 sq. ft. of mixed-use industrial and commercial space. On average, a fully utilized manufacturing space employs one person per 550 sq. ft.. (Nelson, Arthur C. 2004. *Planner's Estimating Guide: Projecting Land-Use and Facility Needs*. Chicago: Planners Press, American Planning Association.) Based on this rule of thumb, 453 jobs are projected for the Project for a fully industrial operation. Similarly, fully utilized office space allocates 280 sq. ft. per employee, thus fully leasing the Site as an office

component would include 89 0office workers. These estimates are based on averages that, of course, will vary widely from company to company but they provide an order of magnitude estimate that is useful for evaluating the potential impacts of the Project.

The Project is estimated to have a total mixed-use development of 249,000 sf; which will greatly increase the property value, to an estimated $50,000,000. The Project Sponsor will review and incorporate any appropriate programs available to the Project, from Village, County, State, or Federal programs, or any other available sources for grants, low interest loans, tax credits, and tax abatements. One such program is the Payment in Lieu of Taxes (PILT/PILOT) Program through the County IDA. Under the typical PILOT program, the sliding scale of tax abatements over a seven to ten year period will only impact improvements to the property and not taxes on the property itself. Project investment could also stimulate some additional private investment and economic growth outside of the Project in the Village and possibly other areas of the County.

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Chapter 9
Impacts on the Use and Conservation of Energy

CHAPTER 9: IMPACTS ON THE USE AND CONSERVATION OF ENERGY

This chapter evaluates the potential effects of the West Water Street Predevelopment Project on energy consumption and conservation, aligning with New York State's energy goals and policies.

Projected Energy Demand

The development of the approximately 49-acre former Ingersoll-Rand site into a mixed-use industrial/commercial facility will introduce new energy demands. The project's operational phase will require electricity for lighting, heating, cooling, and equipment, as well as natural gas for heating and hot water. The anticipated increase in energy demand is consistent with the state's broader trends in energy consumption due to urban development.

Alignment with New York State Energy Goals

New York State has established ambitious energy objectives under the Climate Leadership and Community Protection Act (CLCPA), aiming for:

- 70% renewable electricity by 2030
- 100% zero-emission electricity by 2040
- 85% greenhouse gas emissions reduction by 2050

The project will contribute to these goals by:

- Incorporating renewable energy sources, such as solar panels, into the development.
- Implementing energy-efficient building designs to reduce overall energy consumption.
- Utilizing smart grid technologies to optimize energy use and integrate with the state's Reforming the Energy Vision (REV) initiative .

Energy Conservation Measures

To minimize energy consumption and enhance sustainability, the project will incorporate:

- High-performance insulation and windows to reduce heating and cooling needs.
- LED lighting and energy-efficient HVAC systems to lower electricity usage.
- On-site renewable energy generation, including solar panels, to offset energy demand.
- Electric vehicle (EV) charging stations to promote the use of electric vehicles and reduce fossil fuel dependence.

These measures align with the state's objectives to decrease energy consumption and increase the use of renewable energy sources.

Potential Impacts and Mitigation Strategies

While the project aims to align with State energy goals, potential impacts include:

- Increased energy demand due to the development's size and operational needs.
- Strain on local energy infrastructure if demand exceeds current capacity.
- Engaging with local utilities to ensure infrastructure can accommodate increased demand.

- Implementing energy-efficient technologies to minimize additional energy consumption.
- Pursuing green building certifications, such as LEED, to demonstrate commitment to sustainability.

Conclusion

The West Water Street Predevelopment Project is designed to support New York State's energy conservation and renewable energy goals. Through the integration of energy-efficient technologies and renewable energy sources, the project will contribute to a sustainable energy future while meeting the needs of the new development.

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Chapter 10
Thresholds for Future Action

CHAPTER 10: THRESHOLDS FOR FUTURE ACTIONS

This section of the DGEIS provides information regarding the manner by which the lead agency and involved agencies will evaluate the potential environmental impacts of "future related actions". The SEQRA Regulations state that when a DGEIS and FGEIS has been prepared in connection with the environmental review of a proposed action, that the Findings Statement issued by the Lead Agency should set forth specific conditions or criteria under which future actions will be undertaken or approved, including requirements for any subsequent compliance with SEQRA. The same subsection of the SEQRA Regulations also states that a Findings Statement issued by a lead agency may include thresholds and criteria for supplemental EISs to reflect specific significant impacts, such as site specific impacts, that were not adequately addressed or analyzed in the generic EIS.

The establishment of thresholds for the future environmental review of related action is an important aspect of a project ("action") that has been the subject of an environmental review utilizing a DGEIS. Examples of possible future related actions for the proposed project include the development of specific components of the project in manner that is not entirely consistent with the Alternative of Choice. This may occur given that the layout of the project as the Alternative of Choice is conceptual in nature and not intended to represent the precise and final layout of all of the components of the mixed use project. Instead, the project layout as depicted as the Alternative of Choice is meant to depict the anticipated components of the project and potential development of the Project Site without the need for additional environmental review(s) pursuant to SEQRA. The precise layout of project components will be the subject of site plan applications to be filed with the Village in the future based upon the preparation and review of fully engineered plans and building plans for the various project components.

The thresholds for environmental review for future related actions are intended to provide a framework for the Lead Agency and interested agencies to utilize to ensure compliance with the procedural and substantive requirements of SEQRA. Upon receipt of the Village's, or an interested agency's, request for a discretionary approval or permit along with an Environmental Assessment Form ("EAF"), the Village and involved agencies will need to determine if the potential environmental impacts associated with the action have been adequately addressed within the DGEIS, the FGEIS and the Findings Statements. In making this determination, the agency will need to determine whether the application is consistent with the thresholds outlined in Section 10.2 below. In the event the Village or the relevant involved agency determines that:

1. The future action is consistent with the thresholds established in Section 10.2 below, then no further SEQRA compliance will be required;

2. If the future action is consistent with the thresholds established in Section 10.2 below, but is not addressed, or is not adequately addressed in the Findings Statement, then an amended Findings Statement must be prepared;

3. If the future action is not addressed in the Findings Statement and the proposal does not exceed

any of the thresholds established in Section 10.2 below and it will not result in any significant adverse environmental impact, then a negative declaration must be prepared and issued; or

4. If the future action is not addressed, or is not adequately addressed, in the Findings Statement and/or the application will exceed one of the thresholds established in Section 10.2 below and may have one or more significant adverse environmental impacts, then a supplement to the FGEIS must be prepared

10.2 Thresholds for the Development of the Project Site

The following thresholds have been established for the redevelopment of the Project Site as a mixed-use commercial/industrial Site to assist the Village and involved agencies in evaluating applications for future related actions for the Project. If a future related action is not consistent with the thresholds as provided below, the Village will need to conduct an environmental review of the future action.

1. Land Use: The Project Site will be developed to consist of up to 249,000 square feet of mixed-use commercial/industrial buildings in a manner consistent with the Alternative of Choice. Visual and landscape buffers to be consistent with Section 280.152 of the Village Zoning Law.
2. Lot Coverage and Stormwater: Future development shall not exceed 30% total impervious coverage rate.
3. Public Health: Future development shall follow the approved NYSDEC Record of Decision (ROD) and Deed Restrictions.
4. Transportation: The full development shall not exceed 249,000 sf of mixed-use commercial/industrial space with an estimated peak trip generation of 350 vehicles per hour.
5. Utilities: The water usage is estimated to not exceed 48,300 gpd.
6. Visual and Aesthetic Resources: Proposed maximum building height is 50 feet. Existing vegetative buffers to be maintained.
7. The Project Site will be developed and utilized in accordance with mitigation measures as contained in the Findings Statements issued by the Village Planning Board, in its capacity as the designated Lead Agency.
8. The Project Site will be developed in accordance with any conditions imposed by the Village Board or the Planning Board in connection with their review and approval of specific components of the project.

The thresholds for the environmental review of future related actions will be included in the Findings Statement to be issued by the Village Planning Board at the conclusion of the pending environmental review of the proposed development pursuant to SEQRA.

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Chapter 11
Cumulative Impacts

CHAPTER 11: CUMULATIVE IMPACTS

This section of the DGEIS consists of a discussion of cumulative impacts of the proposed mixed use neighborhood project. The SEQRA Regulations require that a DGEIS include an analysis of potential cumulative impacts resulting from a proposed project. The proposed development will not result in any potentially significant cumulative impacts. Cumulative impacts can result from a single action or a number of individually minor but collectively significant actions taking place over a period of time. Either the impacts or the actions themselves must be related. Cumulative impacts may result from separately minor but collectively significant actions that take place over an extended period time. It is an impact that could result from incremental impacts of a proposed action when added to other recently constructed, present, or reasonably foreseeable future actions by other entities separate from the Project.

The Project Sponsor elected to prepare this comprehensive DGEIS at the onset of the review of the proposed development in order to ensure that all potential adverse environmental impacts related to the proposed project have been identified and will be thoroughly evaluated pursuant to SEQRA. The proposed action consists of the redevelopment of the Project Site as a mixed-use commercial/industrial complex in a manner consistent with the Alternative of Choice. The proposed action has been intentionally defined as broadly as possible and thresholds for the environmental review of any future related action involving the development of the Project Site have been included.

In a consultation with the Lead Agency, it was determined the Study Area for the TIS to be used as the area to consider projects that have been approved and/or constructed in the last 24 months to consider cumulative impacts. The Project Sponsor is not aware of any reasonably foreseeable future actions by other entities within the Study Area not already approved, under construction, or recently completed.

Appendix A
Public Notices, Materials, Correspondence, and Comments

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: West Water Street Redevelopment Project		
Project Location (describe, and attach a general location map): W. Water Street, Village of Painted Post, Steuben County		
Brief Description of Proposed Action (include purpose or need): Development of an approximate 48.8 acre property into multiple commercial buildings (+/-249,000 sq. ft.) with associated utilities, parking, stormwater management facilities, site lighting, etc.		
Name of Applicant/Sponsor: Village of Painted Post	Telephone: (607) 962-4605 E-Mail: ppclerk@empireaccess.net	
Address: 261 Steuben St.		
City/PO: Painted Post	State: NY	Zip Code: 14870
Project Contact (if not same as sponsor; give name and title/role):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): Painted Post Development, LLC	Telephone: E-Mail:	
Address: PO Box 110		
City/PO: Painted Post	State: NY	Zip Code: 14870

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Council, Town Board, or Village Board of Trustees ☑Yes ☐No	Village Board of Trustees	Unknown
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Village Planning Board	Unknown
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	Village Department of Public Works	Unknown
e. County agencies ☐Yes ☑No		
f. Regional agencies ☑Yes ☐No	Appalachian Regional Commission (ARC)	Unknown
g. State agencies ☑Yes ☐No	NYS DOH, NYS DEC	Unknown
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

NYS Major Basins:Upper Susquehanna, Remediaton Sites:C851012, Remediaton Sites:851012

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Industrial

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Corning-Painted Post School District

b. What police or other public protection forces serve the project site?
Painted Post Village Police Department

c. Which fire protection and emergency medical services serve the project site?
Village of Painted Post Fire Department, Steuben County Office of Emergency Services

d. What parks serve the project site?
Hodgman Park, Craig Park, Rand Avenue Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Commercial building complex

b. a. Total acreage of the site of the proposed action? 48.8 acres
b. Total acreage to be physically disturbed? ~15 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 48.8 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 24 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐ Yes ☑ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑ Yes ☐ No

If Yes,

i. Total number of structures 4

ii. Dimensions (in feet) of largest proposed structure: <50 height; 1000 width; and 150 length

iii. Approximate extent of building space to be heated or cooled: 249,000 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☑ Yes ☐ No

If Yes,

i. Purpose of the impoundment: Stormwwater Management

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☑ Other specify: Stormwater

iii. If other than water, identify the type of impounded/contained liquids and their source.

N/A

iv. Approximate size of the proposed impoundment. Volume: 4.06 million gallons; surface area: 4.15 acres

v. Dimensions of the proposed dam or impounding structure: 3 height; 600 length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

Earth Fill

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐ Yes ☑ No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

i*v.* Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☑ No
If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐ Yes ☑ No

ix. Summarize site reclamation goals and plan: _____

Non-impervious areas will be graded and seeded over with a grass mix and will be maintained by periodic mowing.

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☑ No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☑ No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No

If Yes:

i. Total anticipated water usage/demand per day: 48,300 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑ Yes ☐ No

If Yes:

- Name of district or service area: Village of Painted Post Water District
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No
- Do existing lines serve the project site? ☑ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☑ No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No

If Yes:

i. Total anticipated liquid waste generation per day: 48,300 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

Sanitary wastewater

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑ Yes ☐ No

If Yes:

- Name of wastewater treatment plant to be used: Village of Painted Post Sewage Treatment Plant
- Name of district: Village of Painted Post
- Does the existing wastewater treatment plant have capacity to serve the project? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No

- Do existing sewer lines serve the project site? ☑ Yes ☐ No
- Will a line extension within an existing district be necessary to serve the project? ☐ Yes ☑ No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐ Yes ☑ No

If Yes:
- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

N/A

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑ Yes ☐ No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 14 acres (impervious surface)

_____ Square feet or 49 acres (parcel size)

ii. Describe types of new point sources. Roof drains, pipes, catch basins

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

Stormwater will be directed to on-site stormwater management basin.

- If to surface waters, identify receiving water bodies or wetlands: Cohocton River
- Will stormwater runoff flow to adjacent properties? ☐ Yes ☑ No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑ Yes ☐ No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑ Yes ☐ No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

heavy equipment during construction, trucking fleet during operations

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

N/A

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

N/A

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐ Yes ☑ No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐ Yes ☐ No

ii. In addition to emissions as calculated in the application, the project will generate:
- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☑Yes ☐No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend

☑ Randomly between hours of 7am to 11pm.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

Approximately 10 trips per day

iii. Parking spaces: Existing 0 Proposed 463 Net increase/decrease 463

iv. Does the proposed action include any shared use parking? ☐Yes ☑No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☑Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☑No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☑Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

~5000 MWh/year

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

Local utility

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7am-5pm
- Saturday: 7am-5pm
- Sunday: N/A
- Holidays: N/A

ii. During Operations:

- Monday - Friday: 7am-11pm
- Saturday: 7am-11pm
- Sunday: N/A
- Holidays: N/A

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Typical noise expected from heavy construction equipment during construction hours. Noise during operations will occur from semi trrucks and vehicles entering and leaving the site.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☑ Yes ☐ No

Describe: Some wooded area will be removed from the site. Landscaping will be added along the perimeter of the site to aid as a noise barrier. Buildings will act as barrier to properties north of project site.

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Exterior site lighting will be located throughout the site and will be dark sky compliant.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☑ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: 20 tons per week (unit of time)
- Operation : 10 tons per week (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: recycling, housekeeping
- Operation: recycling, minimize use of paper products

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Bath Landfill, Chemung Landfill
- Operation: Bath Landfill, Chemung Landfill

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☑ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☑ Urban ☑ Industrial ☑ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

Project site is an industrial site situated within a residential and commercial area.

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	12	14	+2
• Forested	14	14	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	23	16.85	-6.15
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0.2	4.35	4.15
• Wetlands (freshwater or tidal)	0.14	0.14	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No

If Yes,

i. Identify Facilities:

Corning-Painted Post Middle School (550 feet), Creative Kids Preschool (1,500 ft)

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☑ Yes ☐ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

From 1940s to 1985 site was used as a foundry that produced iron castings. Interim Remedial Measure performed (soil removal,demo and removal of contaminated concrete). Groundwater not impacted. Deed restrictions placed on site. Site has been properly remediated, delisted 9/25/2003.

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No

☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____

☑ Yes – Environmental Site Remediation database — Provide DEC ID number(s): C851012

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:

PCB cleanup completed during 1987 to 1990. Deed restrictions placed on the property to minimize exposures to subsurface soils containing elevated levels of polycyclic aromatic hydrocarbons (PAHs).

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No

If yes, provide DEC ID number(s): C851012

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

PCB cleanup completed at site. Current PAHs concerns in soil at the site per 2004 site-wide investigation. Groundwater not impacted. Future development of site expected to address existing contamination.

v. Is the project site subject to an institutional control limiting property uses? ☑ Yes ☐ No

- If yes, DEC site ID number: C851012
- Describe the type of institutional control (e.g., deed restriction or easement): deed restriction
- Describe any use limitations: Hazardous waste site registry
- Describe any engineering controls: N/A
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☑ No
- Explain:

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 135-150 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? ____%

c. Predominant soil type(s) present on project site:

CF, cut and fill land	68 %
Tg, Tioga Silt Loam	32 %
	%

d. What is the average depth to the water table on the project site? Average: 19.1 feet

e. Drainage status of project site soils:

☑ Well Drained:	16 % of site
☑ Moderately Well Drained:	35 % of site
☐ Poorly Drained	% of site

f. Approximate proportion of proposed action site with slopes:

☑ 0-10%:	100 % of site
☐ 10-15%:	% of site
☐ 15% or greater:	% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe:

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name ____ Classification ____
- Lakes or Ponds: Name Freshwater Pond Classification PUBF (0.14 acres)
- Wetlands: Name ____ Approximate Size ____
- Wetland No. (if regulated by DEC) ____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired:

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

i. Name of aquifer: Primary aquifer

m. Identify the predominant wildlife species that occupy or use the project site:
Birds Squirrels Deer
Rabbits

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): _____
ii. Source(s) of description or evaluation: _____
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:
i. Species and listing (endangered or threatened): _____

Bald Eagle, Timber Rattlesnake, Green Floater, Northern Myotis (Northern Long-eared Bat)

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:
i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
i. If Yes: acreage(s) on project site? _____
ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name: _____
ii. Basis for designation: _____
iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☑ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☑ Historic Building or District

ii. Name: Painted Post Highschool

iii. Brief description of attributes on which listing is based:

Historically and architecturally significant as an example of early 20th century classical revival public architecture. Built in 1868

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name _____ Date_____

Signature_____ Title_____

PRINT FORM

83° SIGN UP

LOCAL NEWS

Public meetings about industrial site coming up in Painted Post

by: Gillian Friebis
Posted: Jun 11, 2024 / 03:22 PM EDT
Updated: Jun 11, 2024 / 03:22 PM EDT

SHARE

PAINTED POST, N.Y. (WETM) — Painted Post residents will have two opportunities to give their opinions on the future of an industrial site in the village.

Southern Tier Central Regional Planning and Development Board (STC) is holding two public participation meetings about the West Water Street Industrial Site at the Painted Post Village Hall, located at 261 Steuben St. The first meeting will be held from 6 p.m. to 7 p.m. on Tuesday, June 18, and the second meeting will be from 1 p.m. to 2 p.m. on Saturday, July 13.

Painted Post awarded state funds to develop shovel-ready site ›

People who attend one of these meetings will learn about the history of the former foundry site and hear a brief overview of the scope of STC's project. Attendees will then give their opinions on various aspects of what development at the site could look like by participating in an interactive activity.

The West Water Street Industrial Site is a 45-acre shovel-ready piece of developable land. STC and Fagan Engineers and Land Surveyors will be predeveloping the land and using the public input gathered at the upcoming meetings to help determine the site's potential.

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LOCAL NEWS

Second Painted Post industrial site meeting coming up

by: **Gillian Friebis**
Posted: Jul 7, 2024 / 11:06 AM EDT
Updated: Jul 8, 2024 / 03:23 PM EDT

SHARE

Updated to add the industrial site project's webpage

PAINTED POST, N.Y. (WETM) — Painted Post residents have another chance to give their input on the future of an industrial site in the village, and this meeting will have a new format.

The Southern Tier Central Regional Planning and Development Board (STC) is inviting the public to the Painted Post Village Hall, located at 261 Steuben St., on Saturday, July 13, to discuss the West Water Street Industrial Site. Painted Post residents are welcome to stop by between 12:30 p.m. and 2 p.m., 30 minutes earlier than the meeting was originally scheduled for.

Unlike the first meeting, which had a set start time and a sit-down discussion, the second session will allow attendees to join in at any time during the 90-minute meeting and interact with the STC's prompts at their convenience. Attendees will also be able to chat with the STC team.

The West Water Street Industrial Site is a 45-acre shovel-ready piece of developable land, and the STC and Fagan Engineers and Land Surveyors will be predeveloping the land. The groups will be preparing a Draft Generic Environmental Impact Statement (DGEIS) using the public input gathered at the meetings and other factors to determine the potential environmental, social, and economic impacts future development of the site would have on the community.

Village of PAINTED POST

West Water Street
INDUSTRIAL SITE

Would you like to provide input?

Contact:

Liv Lovejoy
llovejoy@stcplanning.org
607-962-5092
stcplanning.org

SOUTHERN TIER CENTRAL
Regional Planning & Development Board

Village of PAINTED POST

West Water Street
INDUSTRIAL SITE

Would you like to provide input?

Contact:

Liv Lovejoy
llovejoy@stcplanning.org
607-962-5092
stcplanning.org

SOUTHERN TIER CENTRAL
Regional Planning & Development Board

Village of PAINTED POST

West Water Street INDUSTRIAL SITE

What

Learn about the history of the former Foundry site and help inform standards for its potential future development!

How

Following a brief overview of the site and the project scope, participate in an interactive activity to gather public opinions on various aspects of what development could look like.

Where & When

Tuesday, June 18th
6:00 - 7:00PM
AND
Saturday, July 13th
1:00 - 2:00PM
@
Painted Post Village Hall,
261 Steuben Street

Goals

- Determine potential for the Foundry Site
- Determine impacts of potential future development
- Inform potential zoning code changes

SOUTHERN TIER CENTRAL
REGIONAL PLANNING & DEVELOPMENT BOARD

FAGAN ENGINEERS
& LAND SURVEYORS PC

STEUBEN COUNTY IDA
INDUSTRIAL DEVELOPMENT AGENCY

Please join us and be active in the future of your community!

Appendix B
Project Drawings

DENSITY TABLE

COMMERCIAL SPACE	249,000 SQ. FT.
VEHICLE PARKING SPACES	452
TRACTOR TRAILER LOADING SPACES	11

ALTERNATIVE OF CHOICE

0 200' 400'

Scale:	1" =200'
Date:	7/31/2025
Design By:	-
Drawn By:	MAB
Checked By:	-
Project No.:	2020.045.001
Drawing Name:	altofchoicelayout.dwg

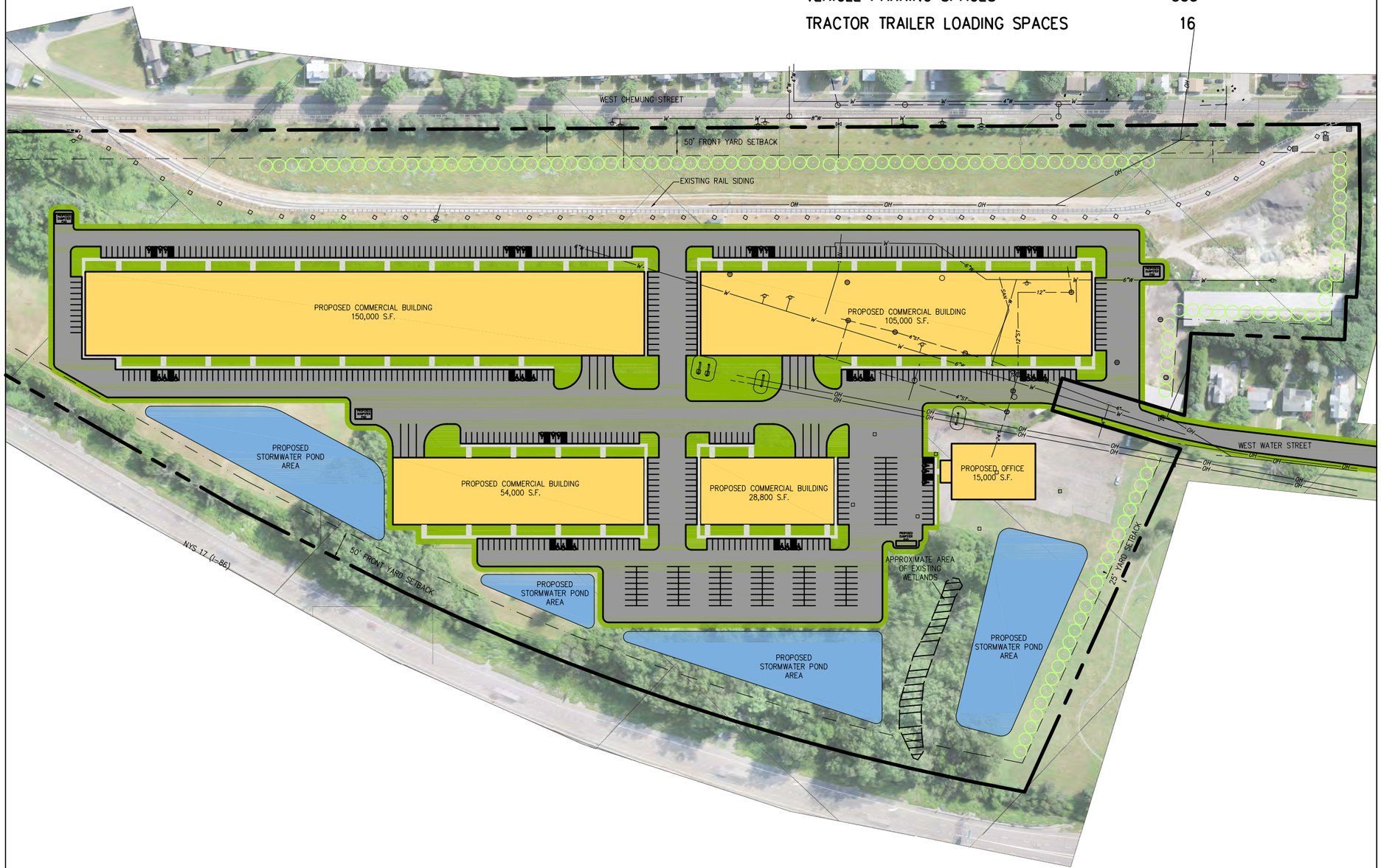
WEST WATER STREET REDEVELOPMENT PROJECT

VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

FAGAN ENGINEERS
& LAND SURVEYORS PC
113 East Chemung Place
Elmira N.Y. 14904
Phone (607) 734-2165
Fax (607) 734-2169
www.FaganEngineers.com

DENSITY TABLE

OFFICE SPACE	15,000 SQ. FT.
COMMERCIAL SPACE	337,800 SQ. FT.
VEHICLE PARKING SPACES	555
TRACTOR TRAILER LOADING SPACES	16



MAXIMUM BUILD ALTERNATIVE

0 200' 400'

Scale:	1" =200'
Date:	7/31/2025
Design By:	-
Drawn By:	MAB
Checked By:	-
Project No.:	2020.045.001
Drawing Name:	maxbuildlayout.dwg

WEST WATER STREET REDEVELOPMENT PROJECT

VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

FAGAN ENGINEERS
& LAND SURVEYORS PC
113 East Chemung Place
Elmira N.Y. 14904
Phone (607) 734-2165
Fax (607) 734-2169
www.FaganEngineers.com

Legend

- Property Boundary Line
- Tax Parcels

Maxar

FAGAN ENGINEERS
& LAND SURVEYORS PC

WEST WATER STREET PREDEVELOPMENT
VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

PROPERTY BOUNDARY WITH TAX PARCELS
with AERIAL IMAGERY (2024)

0 2,500 5,000 Feet

N
W E
S

SCALE: 1:5,000
(PRINTED 11" x 17")

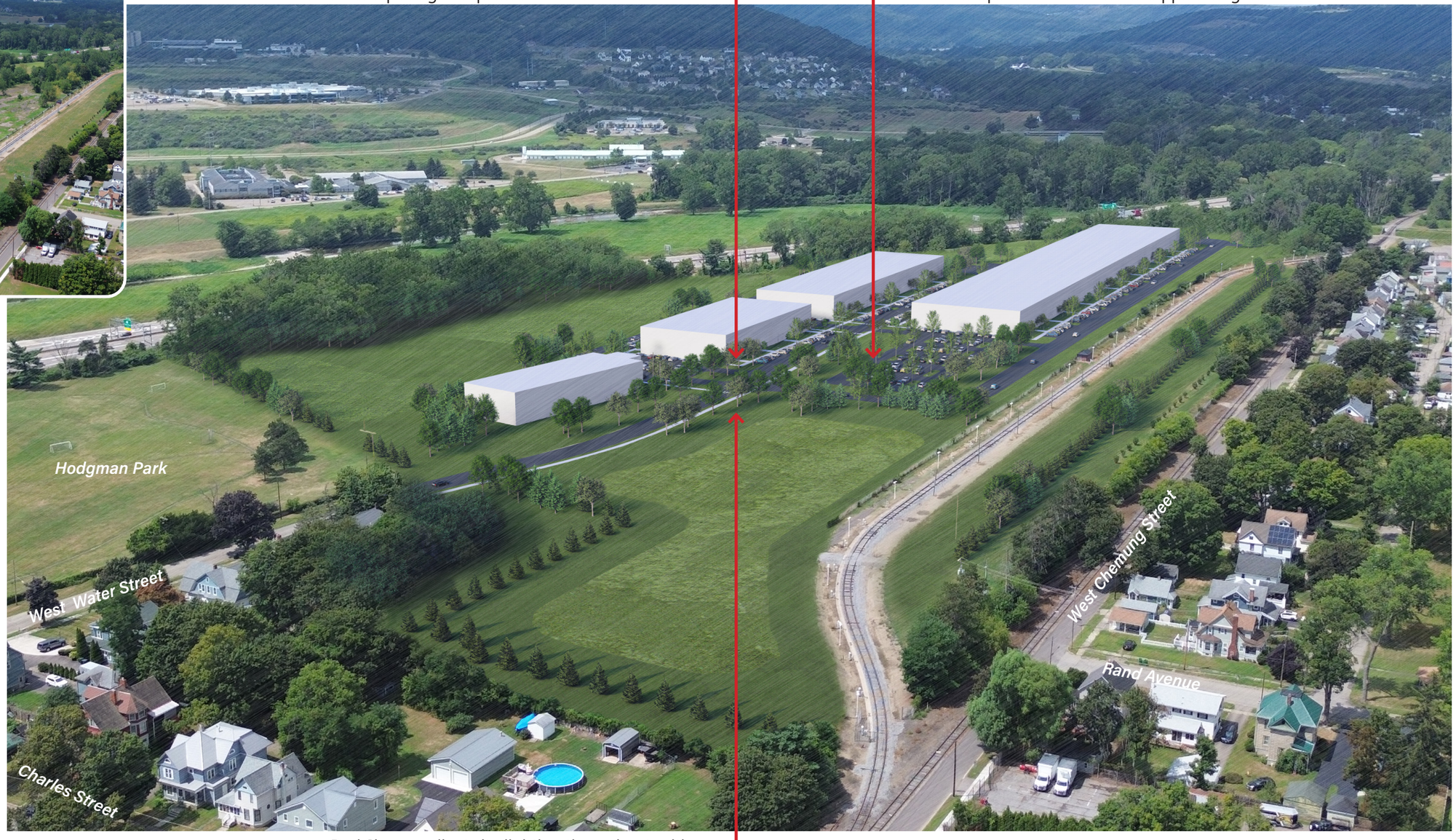
PROJECT #: 2020.045-001
SEPTEMBER 2025

AERIAL VIEW LOOKING NORTHWEST

Existing conditions photo

Provide an internal sidewalk and crosswalk system to allow safe passage for pedestrians within the site

In parking areas, provide tree islands with large scale canopy trees and adequate soil volumes to support long term tree health



DarkSky compliant site lighting throughout, with shielding and cut-offs to prevent nuisance light sources in the neighborhood

AERIAL VIEW LOOKING SOUTHEAST

Existing conditions photo

Provide a planted visual buffer with a variety of evergreen and deciduous native trees and shrubs

Minimize intensive site maintenance by restoring the site ecology with low-mow or no-mow strategies

Emphasize building entries with landscaping, lighting, and signage

AERIAL VIEW LOOKING NORTH

Existing conditions photo

Provide a planted visual buffer with a variety of evergreen and deciduous native trees and shrubs

Consider a future connection to Hodgman Park for passive recreation

Provide a sidewalk connection to West Water Street

VIEW LOOKING SOUTHWEST

Existing conditions photo

Provide a planted visual buffer with a variety of evergreen and deciduous native trees and shrubs

VIEW LOOKING NORTHWEST

Existing conditions photo

Protect existing vegetation and enhance with a planted visual buffer with a variety of evergreen and deciduous native trees and shrubs

Provide welcoming site signage and access control measures (TBD) visually compatible with the neighborhood

Provide a sidewalk connection to West Water Street

Appendix C
Village Zoning Excerpts

Town of Erwin

Village of Painted Post

Village of Riverside

Brownfield Opportunity Area

Step 2 Nomination

Prepared by:

Southern Tier Central
Regional Planning & Development Board

peter j. smith & company, inc.
HUNT Architects, Engineers & Surveyors

Acknowledgments

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William Cornell, Village of Riverside
Roswell Crozier Jr., Village of Painted Post
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Nancy Foster, Painted Post Forward
Ralph Foster, Painted Post Village Trustee
James C. Johnson, Steuben County IDA
Vincent Krystof, Village Mini Mart
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1. Executive Summary

LEAD PROJECT SPONSORS

The Town of Erwin, the Village of Painted Post and the Village of Riverside, with the assistance of the Southern Tier Regional Planning and Development Board, were awarded a g rant through the New York State Department of State (NYSDOS) and the New York State Department of Environmental Conservation (NYSDEC) to initiate a Brownfield Opportunity Area Study. The purpose of the study was to assess the status and long term potential of former industrial lands and related adjacent areas to establish a long term vision and identify strategies for change.

These communities, assisted by Southern Tier Regional Planning and Development Board have worked to seek the input of the local public and regional stakeholders as well as planning and engineering consultants to develop a Brownfield Opportunity Area (BOA) program that represents an achievable community vision.

The Step 2 Nomination Document, including a Master Plan for the Brownfield Opportunity area, was prepared in accordance with the guidelines established by NYSDOS and NYS DEC for the Nomination Study (Step 2) and to guide the Implementation Strategy (Step 3) phase of the BOA program. S everal representatives from community- and public-sector based organizations sat on the Erwin, Painted Post, Riverside BOA Steering Committee and made significant contributions to the development of the nomination document

Following the completion of the Step 2 Nomination Study, the communities and the Southern Tier Central Regional Planning and Development Board will enter Step 3, defining steps for implementation of recommendations and the Master Plan that were developed during Step 2. Ultimately, the BOA program will help achieve economic and physical revitalization of the project area.

PROJECT OVERVIEW & DESCRIPTION

In response to the urgent need to revitalize the local economy and to improve environmental quality, the Village of Painted Post, Village of Riverside and Town of Erwin submitted a joint application for assistance under the New York State Brownfield Opportunity Areas (BOA) program. The Southern Tier Central Regional Planning and Development Board (STC) was selected as the project consultant and has worked closely with community leaders, local agencies and community groups to complete the pre-nomination study and recommendations.

A BOA Pre-Nomination Study served as the first step of a three-part process to develop a community-driven plan to help return areas affected by the presence of brownfield sites as well as vacant and underutilized sites back to productive use. A "brownfield" or "brownfield site" is defined as any real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant. An underutilized property is a site that does not match the local zoning, the existing Comprehensive Plan, or the Pre-Nomination Study Community Visioning process. A vacant site is a parcel of land with no buildings and no known or suspected existing contamination; vacant sites are ready for redevelopment.

The proposed Brownfield Opportunity Area consists of 494 acres of mixed commercial, industrial, and residential use. Boundaries for the study area follow natural and recognizable features including highways and political borders. A total of 564 parcels are located within the BOA including 22 brownfields, 41 underutilized parcels, and 11 vacant parcels.

The nomination stage is the second step toward Brownfield redevelopment, following the pre-nomination phase; the nomination phase provides a more detailed investigation of the BOA. The nomination study will lead directly to Step 3, Implementation.

COMMUNITY VISION, GOALS, & OBJECTIVES

Interested landowners met with members of the BOA Working Group and Steering Committee on September 10 and September 22, 2008 to work together to build a community vision for the BOA. After a presentation about the BOA program, a review of the history of planning in the three communities, a detailed discussion of the BOA boundaries and sites and a "virtual tour" of the main transportation corridor, the participants wrote up their ideas and concerns on each of the following topics suggested in the BOA scope of work. The group then worked together to develop goals which reflect the desires of the communities for each topic. The Community Identified Goals are as follows:

Table 1: Community Identified Goals

Rank	BOA Topic	Goal
1	Ideal businesses & industries	Attract businesses and industry that would support local needs without placing strain on community infrastructure.
2	Zoning	Coordinate zoning to meet community goals and community needs
3	Housing: variety & cost	Attract a wide variety of housing types that will s upport local businesses
4	Future community involvement	Keep taxes low and keep pe ople involved/informed in the community
5	Compact building design	Encourage higher density housing and mixed-uses
6	Physical Infrastructure	Encourage an attractive, small-town atmosphere in the community
7	Encouraging the re-use of land	Recycle the urban landscape
8	Walk-ability	Develop a coordinated system of sidewalks, bike paths and trails. (the intersections of E. High/Hamel and E. High/Hart were identified as needing improvement)
9	Distinctive and attractive community	Try to re-create Main Street USA
10	Natural resources and open space	Maintain the existing green space
11	Mixing land uses	Facilitate the mixing of compatible land uses
12	Recreation and community facilities	Encourage the people-oriented use of green space
13	Variety of transportation choices	Improve alternative transportation connections in the communities
14	Predictable development process	Achieve understanding between developers and c ommunities regarding the community vision

After the community goals were established, each attendee was given three stickers and asked to place each of their dots on their three most important goals. Objectives were developed as a group that would meet the four most important goals. The top four goals and objectives were:

GOAL #1) A ttract businesses and industry that would support local needs without placing strain on community infrastructure in the BOA.
OBJECTIVES:

a) Attract all types of companies, both chains and small businesses
b) Identify businesses which will suit local needs
c) Use the "Gateway to the Finger Lakes" as a marketing label
d) Identify the special flavor of the BOA for marketing purposes
e) Attract I-86 and I-99 travelers to spend time in the BOA

GOAL #2) Coordinate zoning to meet community goals and community needs
OBJECTIVES:

a) Coordinate zoning between the Village of Painted Post and the Village of Riverside.
b) Update existing zoning as necessary
c) Update the West Water Street site transportation links (a bridge west to Route 415)

GOAL #3) Attract a wide variety of housing types that will support local businesses
OBJECTIVES:

a) Zone to permit important mixed-use developments
b) Trigger mixed-use development
c) Prove and promote the local desire for mixed-use housing of all types

GOAL #4) Keep taxes low and keep people involved/informed in the community
OBJECTIVES:

a) Encourage social networking in the community
b) Plan events to increase knowledge and awareness of local concerns and projects
c) Increase media coverage

Finally, the entire group worked to create a unified community vision by filling in "who, what, when, where, why and how:"

Who: Residents, business owners and tourists

What: Develop underutilized properties to meet the needs and requirements in a coordinated way

When: On-going

Where: 500 BOA acres

Why: Take advantage of the opportunities from I-99 and I- 86 interchange (to expand the tax base)

How: Become a BOA as soon as possible, with the involvement of the community

Staff used the information to create this draft vision statement:

> *To take full advantage of the opportunity created by the I-86 & I-99 interchange, now and in the future, the proposed 500 acre BOA in our three communities (Erwin, Painted Post and Riverside) should be developed to meet the needs and requirements of the residents, business owners and tourists in a coordinated way by becoming an official BOA as soon as possible with the involvement of the community.*

The following vision was developed as part of the community participation process:

> *A well developed and balanced community exists inside the Brownfield Opportunity Area of the Town of Erwin, Village of Painted Post, and the Village of Riverside. The community is ideally suited to everyday living; providing a walkable environment, public transportation, and convenient services. These three vibrant communities include mixed land uses and socio-economically diverse residents. This area has a rich history of manufacturing and a growing technological base. Located at the I-86 and I-99 interchange, "the Gateway to the Finger Lakes", this area attracts and maintains business and industry that support the local economy, neighborhoods, and visitors.*

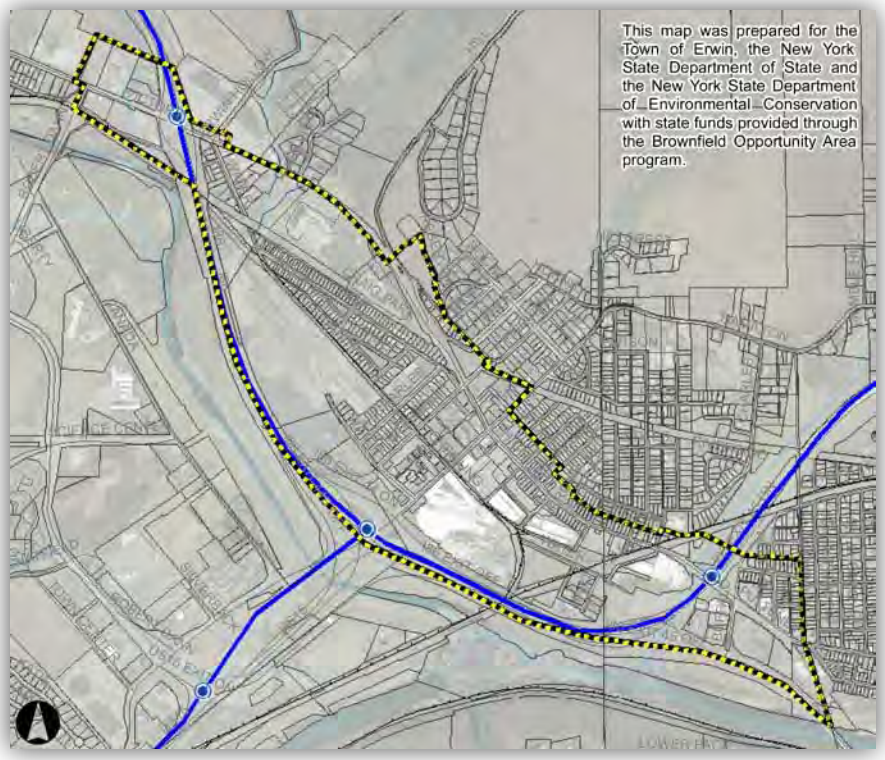
PROJECT BOUNDARY DESCRIPTION & JUSTIFICATION

Boundary Description

The easternmost border of the BOA is along Townsend Avenue and down the Village of Riverside-City of Corning municipal line to Route 352. The BOA follows Route 352 into I-86 from the eastern most Painted Post border through Erwin until the B&H Railroad Company parcel (0.1 mile south of Route 415). The BOA boundary line follows the railroad parcel until Robert Dann Drive. The BOA boundary captures the five (5) parcels north of Route 415 between Robert Dann Drive and I-86. The BOA outline follows I-86 southbound and then captures two (2) parcels north of Route 415 by the interstate on-ramp.

The BOA outline then follows Route 415 from the Town of Erwin to the intersection of Victory Highway with West Hill Road. The BOA boundary extends north east, up the hillside to capture a large wooded parcel. The BOA includes several residences on the southwest side of Fairview Ave., before Fairview intersects with the community bike path. The bike path becomes the BOA boundary for .06 miles, and then the boundary follows North Hamilton Street southwest to Platt St. The boundary follows Platt until the estimated 'intersection' with Stull Lane. At the end of Stull Lane, Dennison Street becomes the boundary. The final portion of the BOA boundary bisects the Village of Riverside with a line from the end of Dennison Street through Alley Five, to end at the City of Corning/Village of Riverside border (where the BOA began).

Figure 1: Project Boundary



Justification

The justification for these boundaries was to collect major portions of the town and villages that have road frontage on Route 415 or sections of the community located between I-86 and Route 415. Several land uses are affected by BOA sites, several of the largest sites are adjacent to residentially zoned land and existing homes.

Necessary Areas/Land Uses Affected by the BOA

Areas necessary to achieve the goals of the Town of Erwin, Village of Painted Post, and Village of Riverside BOA are the parcels along Route 415 and the larger parcels within the BOA along I-86. The study area includes a mix of residential, commercial, industrial, and service-related land uses, the focus of the BOA program in this area is to return brownfields as well as vacant and underutilized lands to productive uses.

The Chemung River Valley is a natural resource and water source within the BOA. Although the river is just outside the BOA boundary, both the Cohocton and Chemung rivers are used for recreation by members of the community at large.

The Dresser Rand manufacturing facility in Painted Post is an important industrial asset located in the BOA. This is an advanced engineering and manufacturing facility which employs 740 local workers and is located at 100 Chemung Street. Continued operations at Dresser-Rand are vital to the local economy, including the area inside the BOA. Dresser Rand produces components and systems to satisfy a variety of production contracts with private firms and with the Department of Defense. The backlog of contracts at Dresser Rand is substantial; these accumulated contracts have allowed the facility to operate through tough economic times.

Corning Community College and the Corning Hospital are health care and educational land uses that may be affected by development in the BOA. If re-development efforts in the BOA succeed, local population loss will cease and the demand for these service industries will increase.

In the region surrounding the BOA, tourism is an established and growing industry. The Corning Museum of Glass is the most visited Upstate New York attraction outside of Niagara Falls, bringing nearly 400,000 visitors to the region each year. Finger Lakes Tourism has worked diligently to promote Finger Lakes wine in New York and beyond. Tourists may be able to utilize the BOA as a base to explore the wine country or the region's Aviation History (Glenn Curtiss Museum, Wings of Eagles Museum, and local aviation pioneer Joe Costa).

Existing transportation infrastructure (both near and in the BOA) is a key land use. The transportation infrastructure is an excellent selling point for sites within the BOA. Re-utilizing the existing infrastructure should reduce long-term road maintenance costs to local and state governments, compared to the maintenance cost on a larger road network- built to accommodate greenfield development. The I-86/I-99 transportation/trade corridor, the Erwin-Painted Post Airport, the Elmira-Corning Regional Airport, and the Bath & Hammondsport Railroad line could all experience increased use as a result of successful development in the BOA.

2. Public Participation Plan & Techniques to Enlist Partners

COMMUNITY PARTICIPATION PROCESS & TECHNIQUES

The BOA Step 2 Nomination Study process consisted of a multi-faceted and inclusive public participation process, designed to achieve a diverse and wide-reaching feedback and support for the redevelopment of the BOA. Community input was key to the project's development, influencing and informing the investigative inventory and analysis as well as the recommendations and concept plans.

In Late 2011, the project team initiated the public process by inviting community supervisors, mayors, and their selected board members; Painted Post Forward representatives; NYSDEC; NYSDOS; and STC staff to discuss the BOA Nomination study and the W. Water Street access bridge Feasibility Study. The Steering Committee from the pre-nomination process remained in place during the nomination process. Consultants, peter j. smith & company, inc. co. designed and the steering committee approved a public outreach program that included several participation elements.

Input opportunities included a community visioning session, public forums, topic-oriented focus groups and online availability of the nomination document for comment. The consultants developed all communication materials for each of the public input opportunities, including press releases, posters, direct-mail letters, emails and advertisements. Southern Tier Central distributed marketing information, informing residents and business owners of the public input opportunities. The consultant team also created all presentations, mapping, workbooks and other materials for each input session and facilitated participation.

In addition to the traditional engagement process, peter j. smith & company, inc. also developed marketing materials for the BOA to ensure that the community, businesses and developers remain interested, supportive and engaged in the area's redevelopment. These materials include a brochure outlining the advantages of the BOA program and the urban design plan, a poster depicting development potentials envisioned in the urban design plan and a sample development RFP.

Community Participation Summary

From the beginning of the BOA process, public participation in the E/PP/R BOA has been a key component of the project. STC staff has provided regular progress reports to the host municipalities, planning boards and Painted Post Forward, a community advocacy group.

On January 25 and January 26, the consultant team held a series of five topic-oriented focus groups to gather input from various industry professionals. Following are each of the group topics:

- Transportation & Infrastructure
- Recreation & Tourism
- Residents, Education & Non-Profits
- Commercial & Industrial Development
- Community & Economic Development Organizations

The input from these groups was wide reaching. Among the areas that were stressed were the importance of improving the region's workforce and employability, concerns regarding transportation infrastructure in the BOA, ideal industries to target for new development and the BOA's potential to serve a growing regional tourism industry in the Greater Corning Area and the Southern Finger Lakes.

A public meeting was on March 22, 2012 to re-engage the community in the BOA program, educate neighborhood residents about the Step 2 Nomination Study process and gather input regarding the major issues and opportunities facing new development in the BOA.

For this session, participants worked in groups to collaborate and identify the issues and opportunities for development in the BOA. Groups were asked to mark on the map the ideal locations for development which they would support. They also denoted the locations of physical impediments to development such as poor access, aging roadways, unattractive aesthetics and other struggling conditions.

The public was invited again to attend and participate in an interactive forum on July 26. The presentation during this session focused around presenting the findings, recommendations and the urban design plan for the BOA. Attendees were guided step-by-step through the recommendations, their significance for the BOA moving forward and what to expect for the Step 3 phase of the program. Feedback was received orally as well as written on forms designed by peter j. smith & company, inc.

Community volunteers were utilized for traffic counts, which provided an outreach opportunity for the volunteers and for members of the community (as they were being counted).

The Nomination Study has been made available to the public in three distinct ways: an executive summary through the media, printed copies in municipal offices, and digital versions will be available online.

TECHNIQUES TO ENLIST PARTNERS

Building strong partnerships is one of the key elements of the BOA process. The final study illustrates an economically vital and stable community; local organizations and involved civic partners will be necessary to implement the recommendations of the Nomination Study.

Table 2: Project Steering Committee

Name	Affiliation
Jack Benjamin	Three Rivers Development Corporation
Vickie Button	Painted Post Planning Board
William Cornell	Village of Riverside
Roswell Crozier	Village of Painted Post
Rick Davis	Crystal Cleaners
Ted DeVoe	Corning-Painted Post School District
Dave Erwin	Town of Erwin
Carol Ferratella	Steuben County/Village of Riverside
Nancy Foster	Painted Post Forward
Ralph Foster	Painted Post Village Trustee
James C. Johnson	Steuben County IDA
Vincent Krystof	Painted Post Laser Wash & Village Mini-Market
Diane Lantz	Regional Economic Development & Energy Corp.
Greg MacLean	NYSDEC Region 8
Tom Magnusen	Painted Post Board of Trade
Mike Manzari	Pyramid Brokerage
Ted Pawlik	Dresser-Rand
Doug Rich	Dresser-Rand
Rita McCarthy	Town of Erwin
Christina Mucci	Pyramid Brokerage
Emily & Ernie Northrup	Painted Post Forward
Phil Palmesano	NYS Assembly
Bill Piatt	NYS DOT Planning Section
Bart Putzig	NYSDEC
Pamela L. Rogers	Painted Post Forward
Meg Scheidweiler	Painted Post Forward
William Scheidweiler	Painted Post Planning Board
Julie Sweet	NYSDOS
Janet Thigpen	Steuben County EMC
Amy Tryron	Village of Painted Post
Lyle Wasson	Village of Riverside
Marcia Weber	Village of Painted Post

Project participants have worked diligently to build strong relationships among the project participants. This project has included the following thirty organizations. Attendance at E/PP/R BOA Steering Committee meetings has been good, these groups are well represented.

The ongoing E/PP/R BOA process has provided ample opportunities for communication between members of these groups. The steering committee remained relatively stable between the pre-nomination phase and the nomination phase; this project is building on a history of cooperation, forged in a three year pre-nomination process. The group activities and discussions have prompted steering committee members to discuss inter-municipal issues and the effects of New York State governance on residents/communities. The relationships established through this process will be vital for E/PP/R to succeed with a BOA Implementation project.

The project team has maintained close communication with the Steering Committee, local governments, and involved agencies throughout the entire BOA process. Members received an invitation by mail and email in December 2011, January 2012 a nd March 2012. Participants were emailed regarding project activities in March 2012, May 2012, July 2012.

3. Analysis of the BOA

INTRODUCTION

The Brownfield Opportunity Area program provides municipalities with financial assistance to complete area-wide planning approaches to brownfield redevelopment. Completion of the program leads to a New York State designation as a Brownfield Opportunity Area. The second step in the program is the Nomination, which provides an in-depth description and analysis of economic and market trends, existing conditions, opportunities, reuse potential and recommendations.

This section, the analysis of the proposed BOA, is the third of the Step 2 Nomination Document for the Erwin/Painted Post/Riverside Brownfield Opportunity area. The analysis is a comprehensive inventory of the existing conditions of the BOA concerning the following investigative areas:

- Community & Regional Setting
- Existing Land Use
- Existing Zoning
- Brownfield, Abandoned & Vacant Sites
- Strategic Sites
- Land Ownership Patterns
- Parks & Open Space
- Building Inventory
- Historic or Archeologically Significant Areas
- Transportation Systems
- Infrastructure
- Natural Resources & Environmental Features
- Economic & Market Trends
- Summary Analysis, Findings, and Recommendations of the BOA & Strategic Sites

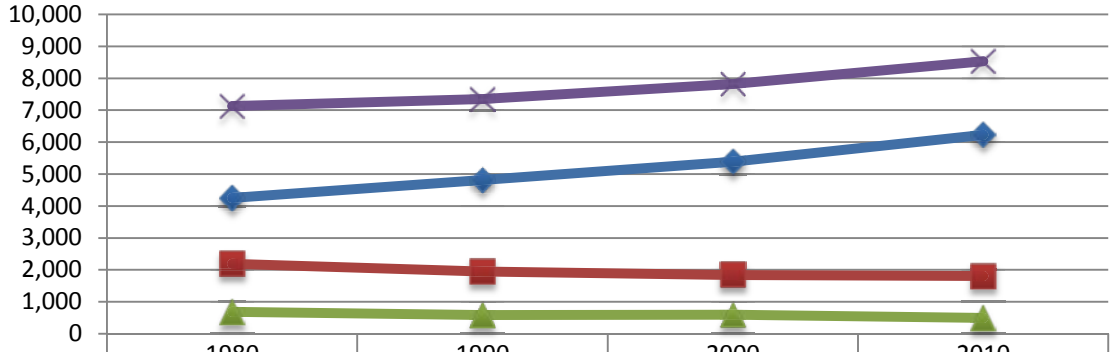
COMMUNITY & REGIONAL SETTING

The Brownfield Opportunity Area is located in the Corning, New York, Metropolitan Statistical Area in Steuben County. The proposed BOA is centrally located within the central Southern Tier counties of New York State. The BOA is divided among the Town of Erwin and the villages of Painted Post and Riverside; almost two-thirds (63%) of BOA properties and acreage are located within the Village of Painted Post. The remaining one-third is divided equally between Riverside and Erwin. See Figure 1 for more detail on the BOA location. Looking at the BOA in relation to the total area of the three communities, about half of the Village of Riverside and almost 40% of the Village of Painted Post (311 acres out of approximately 830 acres) are located in the BOA. Only about 4% of Erwin's 39.5 square miles is located in the BOA.

The project area lies within the rolling hills of the Finger Lakes

A variety of indicators were used to provide a description and analysis of demographic, social, economic, and employment characteristics of the communities. This data provides a valuable analysis tool to examine the area's trends and potential for future growth and development. Original sources of information have been used including US Census, NYS Department of Labor, US Bureau of Economic Analysis, and Cornell University Socio-economic Trends and Well Being Indicators 2000.

Table 3: Population Change in the Study Area



	1980	1990	2000	2010
T. Erwin (TOV)*	4,252	4,813	5,385	6,228
V. Painted Post	2,193	1,950	1,842	1,809
V. Riverside	684	585	594	497
Combined	7,129	7,348	7,821	8,534
Steuben County	99,217	99,088	98,726	98,990
STC Region	214,559	212,945	209,020	206,163

A home in the Village of Painted Post

Demographics

According to the 2010 Census, the Village of Painted Post had a population of 1,809 which was a decline of 1.8% since 2000. Population loss in the Village of Painted Post was much larger between 1980 and 2000 (a decline of 5.5% 1990-2000 and 16% from 1980-1990). The populations of Painted Post and Riverside have shown a net decrease since 1980.

However the rate of population loss seems to be slowing. Similar population losses occurred for most cities and villages throughout Steuben County and the STC region, which encompasses Steuben, Schuyler and Chemung Counties. There were 841 housing units in the village, a slight increase since 2000. The trend of decreasing population, decreasing household size, and increasing numbers of households is common throughout Upstate New York.

The Village of Riverside had a population of 497 in the 2010 Census which was a massive decrease of 16.3% since 2000. Between the 1990 and 2000 Riverside experienced growth of 1.5% and an overall decrease of 13.2% from 1980. There were 219 housing units in Riverside; the majority of these units were owner-occupied.

In comparison, the Town of Erwin (outside of Painted Post) has shown a net growth of population since 1980. Population gains in the Town of Erwin have off-set the losses in the two villages. The total population of the three BOA municipalities has increased by almost 20% since 1980. Only a small portion of the BOA is within the Town of Erwin, and the included portion is mostly non-residential. The Town of Erwin had a population of 8,037 in the 2010 Census including the Village of Painted Post and a net population (Town, Outside Village) of 6,228. Population for the town in 2000 was 7,227 (including Painted Post) and a net population of 5,385 outside of the village. There were 3,322 households in the Town of Erwin (including the Village of Painted Post).

The BOA boundary crosses census tracts, so it is difficult to precisely estimate the population within the E/PP/R BOA. Given the relative age of residents of the villages, the small portion of Erwin in the BOA area, and the increase of new housing development outside the BOA boundary, it is likely that the population loss since 1980 in the BOA area has been significant.

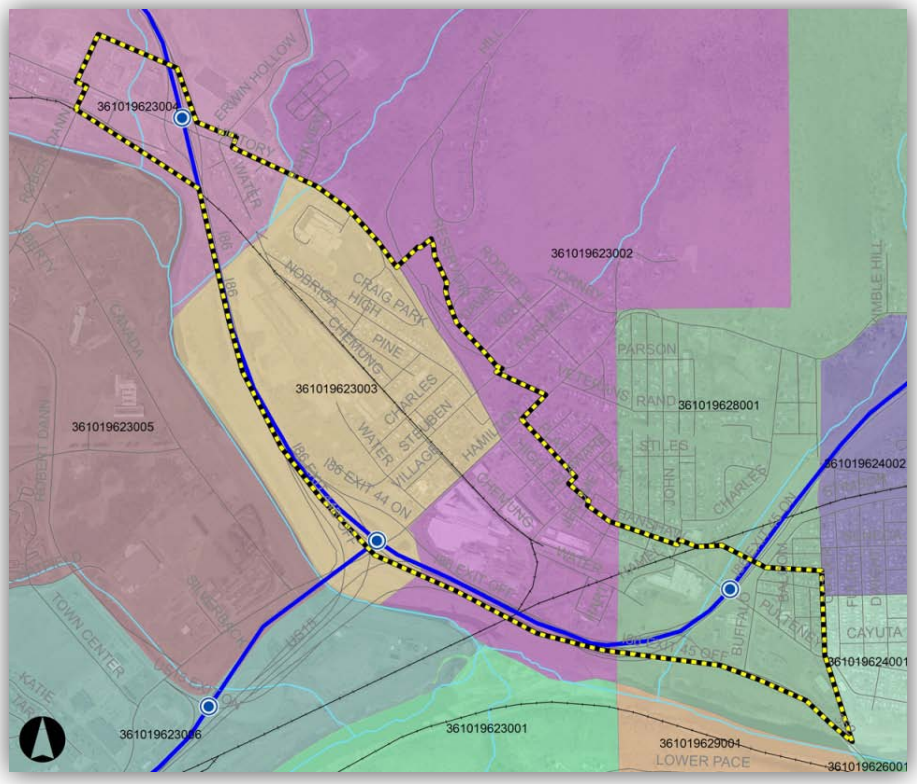


Figure 2: Census Block Groups in the BOA

Basic population information for the BOA, will be gathered from Census block level data. Figure 3 is a dot density map of the population in the BOA, by census blocks. The Census block level data offers a relatively accurate view of population density in the study area. The population density map in **Figure 3** shows two major population centers in the BOA.

Census block groups in the study area do not conform to the Boundaries of the BOA. As shown in **Figure 2**, analysis at the block group level will not generate data specific enough for the study's purposes. Only two block groups are mostly contained within the BOA. Other block groups aggregate the rural lands surrounding the BOA with the study area.

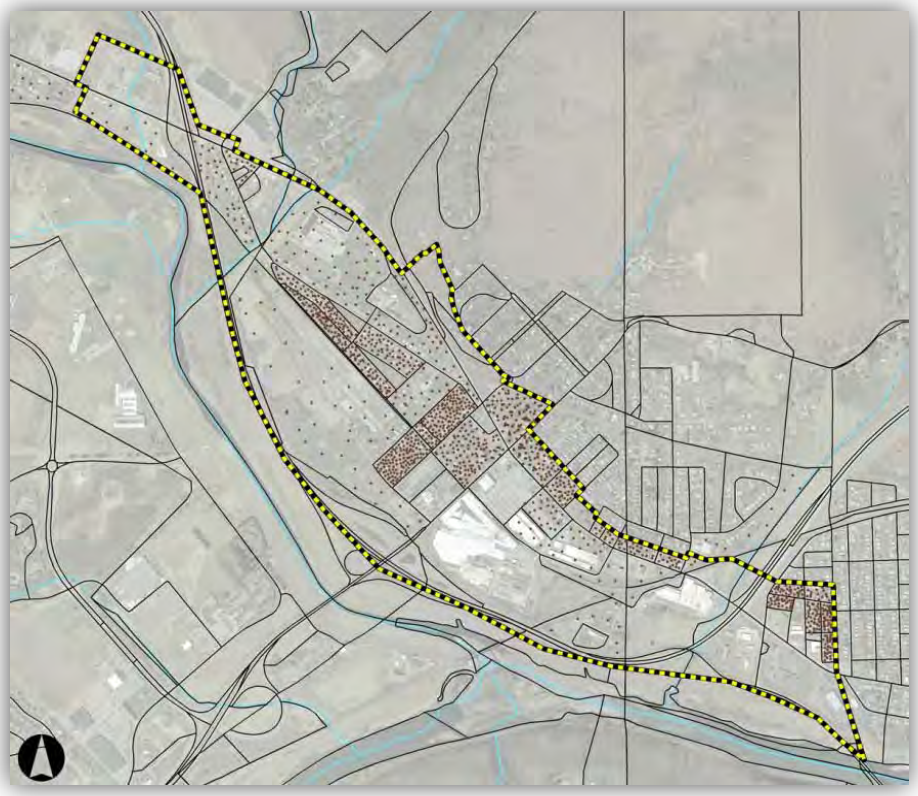


Figure 3: Population & Density by Census Block

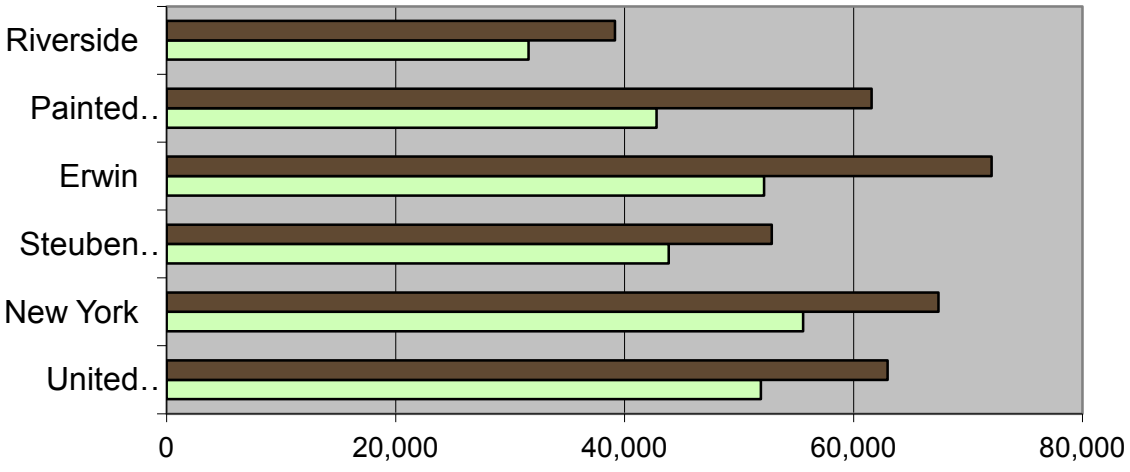
Most of the residents inside the BOA live in the three blocks adjacent to The Village Square and between Chemung and High street. These are densely populated areas, other census blocks in the BOA are more sparsely populated and dominated by the presence of industrial and commercial land uses.

Socio-economic

Median family income (MFI) is used to evaluate the socio-economic status of households where two or more persons are related by birth, marriage or adoption. It is used by the US Department of Housing and Urban Development (HUD) to determine eligibility for housing levels and is directly dependent on family size. MFI helps to show income disparity and economic stress as well as to help determine eligibility for Community Development Block Grants (CDBG), housing, water & sewer, and other grant and loan programs.

The 2005-2010 American Community Survey listed the median family income for the Village of Painted Post as $61,563, approximately equivalent to the U.S. and lower than New York State (-8.7%). Compared to the 2000 Census, the Village of Painted Post median family income only increased slightly from $58,295 to $61,563; this nominal increase actually represents a significant loss of buying power (due to the effects of inflation). Incomes throughout New York and the US increased at a much faster pace. The Village of Painted Post lost a significant relative income advantage; in 2000 Painted Post's median family income was 12.8% higher than New York State and 16.5% higher than the US.

Table 4: Median Income 2005 - 2010



	United States	New York	Steuben County	Erwin	Painted Post	Riverside
Families	62,982	67,405	52,867	72,054	61,563	39,167
Households	51,914	55,603	43,867	52,176	42,778	31,607

The Town of Erwin MFI was $72,054; significantly higher than the U.S. (+14.4%) and somewhat higher than NYS (+6.9%). Between the 2000 Census and the 2005-2010 ACS, MFI in Erwin grew with inflation. A significant increase in the MFI (from $57,169 to $72,054) has maintained most of the buying power of Erwin's families in the last 10 years. The MFI of families in Erwin has remained stable relative to the MFI of the US as a whole (14.4% vs. 142%). However, Erwin's relative advantage against NYS is slipping somewhat (6.9% vs. 10.6%). In contrast, the MFI for the Village of Riverside was $39,167; lower than any other nearby municipality. Riverside's median family income is significantly below the Steuben County (-25.9%), New York (-41.9%) and US averages (-37.8%). The most recent ACS data is consistent with the findings of prior Census; In 2000, the MFI for the Village of Riverside was $39,712 which was also significantly below the New York (-23.2%) and US (-20.6%) averages.

Median household income (MHI) is commonly used to measure private income within a household and is one of the most widely accepted descriptive measures of income. Income is made up of pre-tax receipts of all residents in the household over 15 years of age and includes not only wages and salaries but also unemployment insurance, disability and child support Individuals within the household do not have to be related and the measure does not take into account the size of the household.

According to the 2010 American Community Survey, households in the Village of Painted Post had a median household income (MHI) of $42,778; a nominal increase from the 2000 Census. Household income for the Village of Riverside was significantly lower with a MHI of $31,607; household incomes in Riverside actually fell, 2000-2010. As discussed earlier, there is only a small portion of the Town of Erwin is within the BOA study area. However, MHI in the Town of Erwin including the Village of Painted Post was $52,176; an increase of several thousand dollars from the 2000 Census. These results show there is a significant income disparity between the municipalities in the BOA. Furthermore, households within the core urbanized area are significantly disadvantaged.

Per capita personal income (PCPI) indicates a community's standard of living and is often used to compare economic conditions between geographic areas. It is calculated by taking personal income from all sources and dividing it by the resident population of the area.

The 2000 Census and 2005-2010 ACS, showed a similar distribution of income for the communities of the BOA. The Town of Erwin had a higher per capita income compared to the Village of Painted Post, Village of Riverside, Steuben County, New York and the United States. On the other hand, the Village of Riverside had a PCPI which was significantly lower than the other two BOA communities and lower than Steuben County, New York State and the United States.

Table 5: Per Capita Personal Income

Census Division	Per capita income 2010	Per capita income in 1999	Average annual growth rate 1999-2010
United States	$27,334	$21,587	2.42%
New York	$30,948	$23,389	2.94%
Steuben County	$23,279	$18,197	2.54%
Erwin	$34,848	$27,192	2.56%
Painted Post	$26,832	$23,664	1.22%
Riverside	$19,148	$17,697	0.75%

Source: US Bureau of the Census, Southern Tier Central

Table 5 shows the PCPI comparison by census division, between 1999 and 2010.

Future Estimates

Unfortunately, the inevitable ageing of the population and population loss (due to out-migration and death) in the BOA area is likely to continue in a 15-20 year time horizon. The 'childbearing' cohort (20-39 years old) is one of the smallest demographic groups in the community; these municipalities cannot rely on natural growth or in-migration to substantially increase the population in the BOA.

Concurrent with the aging of BOA residents and slow population loss, buying power within the BOA is decreasing. Residents are earning less and have less disposable income; without outside intervention, only businesses serving the pressing needs of aging residents will be able to thrive in this area (physicians, drugstores, home health aides, prepared meals, driving services, and housekeepers).

Education

Education contributes to the region's quality of life and economic competitiveness. A strong educational framework helps to improve the social and economic outlook for current and future generations, strengthens communities, and attracts and retains businesses and residents. New York State is noted for a having strong public educational system and excellent colleges and universities. The Greater Corning Area is fortunate to have a strong public educational system which includes an International Baccalaureate School.

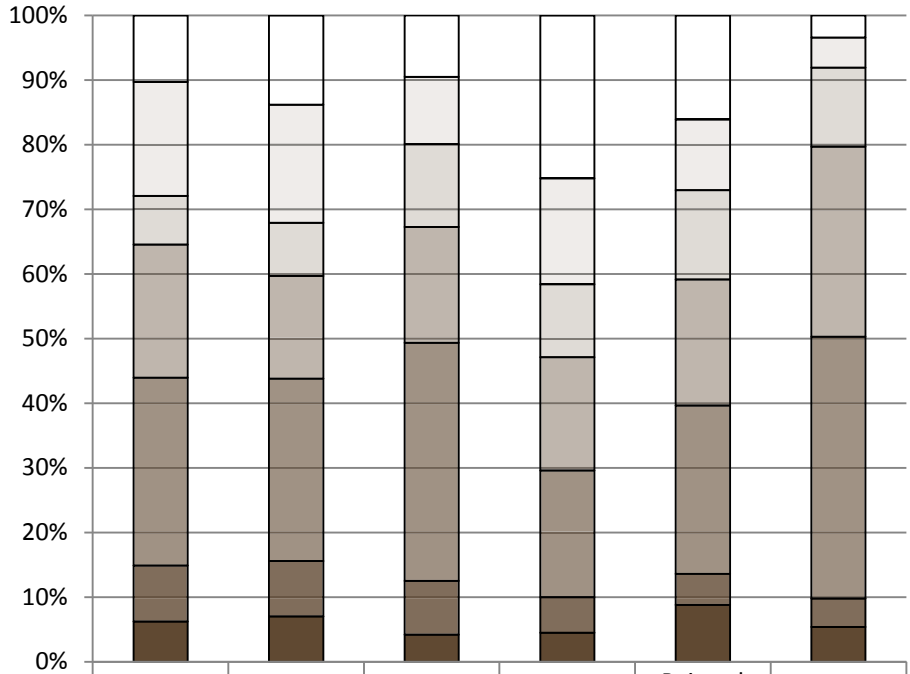
According to the 2005-2010 ACS, the BOA study area communities and Steuben County compare favorably in educational attainment to the national average. A total of 87.6% of Painted Post residents aged 25 or older had a high school degree or higher. The figures were 91.1% for Riverside and 90% for Erwin. Steuben County had 87.7% with a high school degree or higher while the US average was 84.1%.

Nearby Corning Community College is a member of the State University of New York

(SUNY) system and is accredited by the Middle States Association of Colleges and Schools and the National League of Nursing. T he college offers transfer, career, certificate and training programs which help to train the area's workforce and strengthen the regional economy. Degree and certificate programs are offered in a variety of areas including business, computers, education, and human services, health and nursing, protective services, engineering and technology and liberal arts, and sciences.

Several highly regarded four year institutions of higher education are within commuting distance including: Empire State College in Corning, Elmira College, Cornell University, Ithaca College, Alfred University, SUNY Alfred State College, Mansfield University, Keuka College, College Center of the Finger Lakes, Hobart and William Smith Colleges, and SUNY Binghamton.

Table 6: Educational Attainment



	United States	New York	Steuben County	Erwin Town	Painted Post Village	Riverside Village
Graduate or professional degree	10.3%	13.8%	9.5%	25.2%	16.1%	3.4%
Bachelor's degree	17.6%	18.3%	10.4%	16.4%	10.9%	4.7%
Associate's degree	7.5%	8.2%	12.8%	11.3%	13.8%	12.2%
Some college, no degree	20.6%	15.9%	17.9%	17.5%	19.5%	29.4%
High school graduate	29.0%	28.2%	36.8%	19.6%	26.0%	40.5%
9th to 12th grade, no diploma	8.7%	8.6%	8.3%	5.5%	4.8%	4.4%
Less than 9th grade	6.2%	7.0%	4.2%	4.5%	8.8%	5.4%

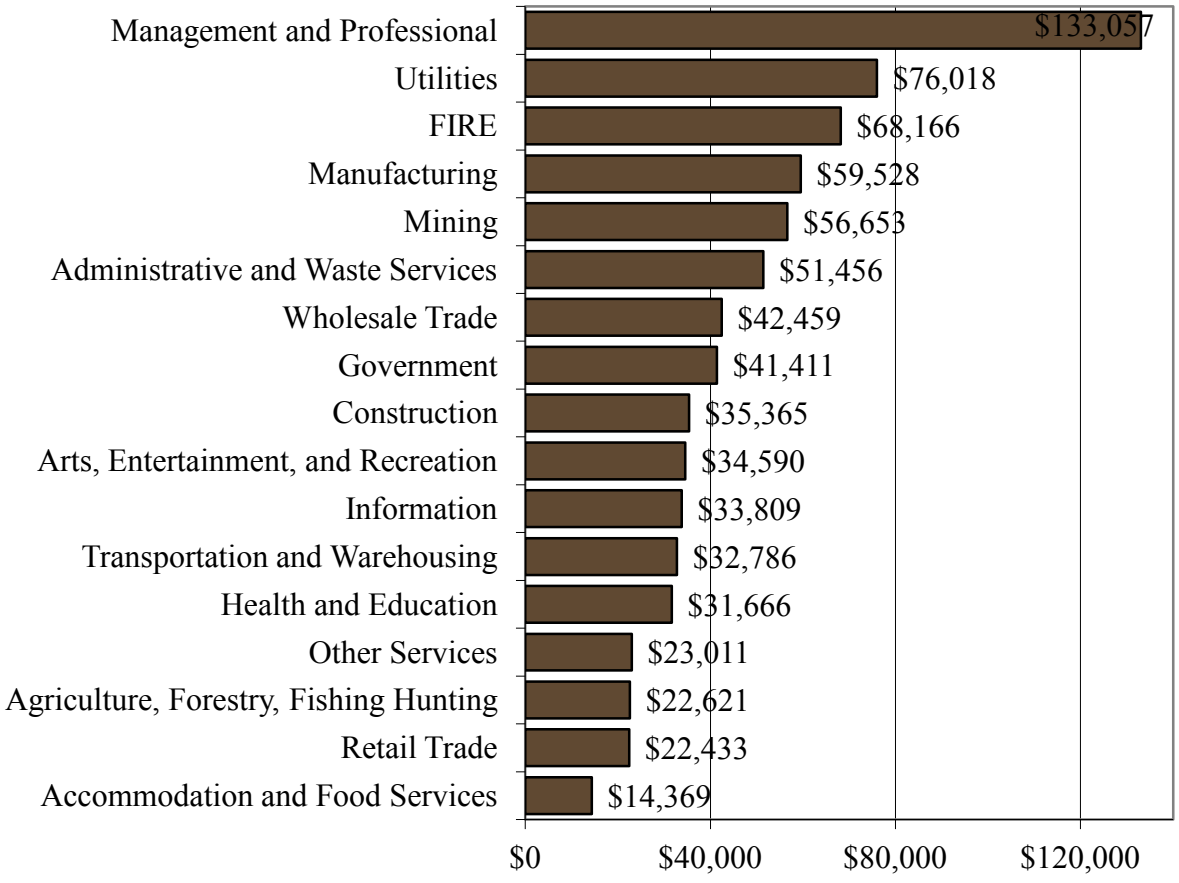
Economic Environment

The Greater Corning Area is unique in the "post-industrial" northeast. Major manufacturing companies retain strong operations in this area. Specifically, Dresser-Rand has prospered in this financial climate. The location of Dresser-Rand, Corning Incorporated, and Sitel, a global call center company, in the vicinity of the BOA are examples of the economic opportunities available to industry in this area. Larger retail operations (such as Wal-Mart, Home Depot, and Wegmans) are not only contributing to the local economy, but these businesses are benefiting from the skills of local workers and the consumer demand of local residents.

According to the New York State Department of Labor, average annual wages in 2010 for Steuben County for all industries was $48,733. New York State as a whole averaged $60,263 for the same period.

Through 2010 the highest paid category of employees in Steuben County was management and professional, with an average annual wage of $133,057. Utility employees/workers were the second highest paid group of employees in the county at $76,018 annually. These jobs require skills and experience, the high wage is a reflection of the value added by the labor of these workers.

Table 7: Steuben County Average Annual Wages



Accommodations and food service employees earned the lowest wages, $14,369. This sector represents 6.6% of the County Workforce. Retail employees make up 10.9 % of the workforce in the County. Retail Trade employees earned the second lowest wages, $22,433. All told, service employees represent 20% of the workforce in the county and they earn approximately $20,000 per year.

Table 8: Steuben County Major Employers (2008)

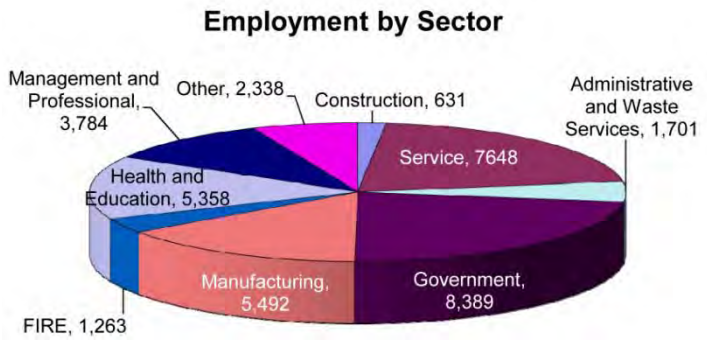
Company	Employees
Corning Incorporated	5,000
Gunlocke Co., Inc.	886
St. James Mercy Hospital	840
Alstom	839
Dresser-Rand Company	700
Pathways	615
Corning Hospital	585
Wegman's	528
Kraft Foods (formerly Polly-O)	445
ARC of Steuben	400
Philips Lighting Company	400
World Kitchen	350
Ira Davenport Hospital	318
Mercury Aircraft	250
Guthrie Medical	250
Sitel	225
Crowley Foods, Inc.	219
Founders Pavilion	185
Storflex Fixtures	152
Absolute Care at Three Rivers	135

Source: Steuben County, Southern Tier Central

Major private sector employers within the BOA and Steuben County reflect a diversified economy with a strong manufacturing, retail and service sector base. Dresser-Rand and Storflex are located within the BOA and Corning Incorporated is the region's largest employer.

However, **table 8** of Steuben County's largest employers shows that many of the county's workers are employed by not-for-profits and healthcare organizations. Given existing demographic and socio-economic constraints, a greater number of un-skilled service workers will be needed.

Figure 4: Employment by Sector



Source: US Bureau of the Census, Southern Tier Central

As discussed earlier, Steuben County has a well diversified economy which includes a strong manufacturing, service and retail sector. The New York State Department of Labor lists annual non-agricultural employment by industry sector. The preceding figure shows the industry and employment numbers for the most recently available year of 2010.

Steuben County employment for 2010 shows a pattern of diversified employment. The service and government sectors are the largest with 20.9% and 22.9% of employees, respectively. Manufacturing (15%) and health and education (14.6%) are also significant in the local economy. Management and professional workers represent 10.3% of workers in the County. Combined employment in the smaller sectors of Finance, Insurance and Real Estate (FIRE) (3.5%), construction (1.8%), administrative and waste services (4.6%), other (6.4%) amounts to approximately 16.3 % of employment.

Employment Indicators

In New York State, 63.7% of the population claimed to be a part of the labor force, and 7.5% claimed to be unemployed. In Steuben County, 61.3% of residents were a part of the labor force and 8.0% self-reported as un-employed. Within the Town of Erwin 6,140 people were of working age; approximately 56% reported being in the labor force and only 5.1% reported being unemployed. In the Village of Painted Post, a total of 1539 individuals were of working age (age 16+); only 65.9% are in the labor force and 4.5% self-reported as unemployed. A total of 328 individuals from the Village of Riverside were of working age with approximately 64.6% are in the labor force; the unemployment rate in Riverside is highest, at 11.0%.

Dresser Rand Facility, Village of Painted Post

Certain conclusions can be drawn about the E/PP/R BOA, based upon the 2005-2010 ACS. A high proportion of the population is not participating in the workforce due to age, injury, education, or lack of opportunity. A ttempts should be made to bolster the existing workforce and to attract young migrants.

Current Community Features/Conditions

There are several defining features of the communities within and surrounding the OBA, both physical and social. Physically, the central location of this area (relative to the surrounding rural towns) was a key to the development of the Town of Erwin and the villages of Painted Post and Riverside. The Chemung River was a developmental asset before the 1940's because it was used for transportation of goods and people; now the practical feature of the river is in water availability to industry.

The designation of Route 17 into Interstate 86, and Route 15 and into Interstate 99 is an outstanding asset to the community. The road networks intersecting in the BOA are strong community features. T he villages of Painted Post and Riverside and the Town of Erwin are strategically located adjacent to the Interstate 86 and U.S. Route 15 (future I-99) interchange which is part of the New York State Trade Corridor. I nterstate 86 serves as a m ajor east-west corridor along New York's Southern Tier. The New York State portion of Interstate 99 is in the final design phase and is expected to increase north-south trade and economic development opportunities between Canada to the north and all points south of New York.

The major physical features in the Brownfield Opportunity Area include: the new interstate junction and the Dresser-Rand manufacturing facility. O ther features of note are an active railway, the Storflex manufacturing facility and an International Baccalaureate High School, Corning-Painted Post West High School on Victory Highway.

Former Painted Post High School

The social features of this community include strong community groups like Painted Post Forward and the Painted Post Rotary. Residents have active involvement in the American Red Cross, United Way, Salvation Army, Habitat for Humanity and Steuben Church People Against Poverty. Pipeline for Progress and the Association of University Women work to involve members in the community. This area shares a rich history with fraternal organizations like: the Loyal Order of Moose, the Benevolent and Protective Order of Elks, the Knights of Columbus and Lions Clubs International.

Arts organizations are thriving in the greater Corning area; organizations like the ARTS of the Southern Finger Lakes, the Orchestra of the Southern Finger Lakes, and the Erwin Painted Post Museum.

Workers within the community have generally short commutes, on average between fifteen and twenty minutes (14.9 min. for the Village of Painted Post, 19 min. for the Town of Erwin and, 20.1 minutes for the Village of Riverside). The commute for residents in the study area is substantially shorter than for residents in the county (21.6 minutes), New York State (31.4 minutes), and significantly below the national average (25.5 minutes). The short commute saves time and lowers fuel costs for local residents. This community is attractive for homebuyers due to the shorter commute.

Economic Trends

Corning Incorporated and Dresser-Rand Company are the two largest local employers with a combined workforce of 5,700 employees. Although manufacturing employment peaked in the 1960's the region continues to maintain comparatively high manufacturing employment when benchmarked with state and national levels.

During the period of 2001 through 2003, the greater Corning area and Steuben County area experienced economic and job cutbacks. Corning Incorporated's Photonics Division located in the Town of Erwin was particularly impacted, final retrenchment figures for the photonics plant were greater than 2000 and cut employees. Recent positive employment trends have aided the expansion of the Corning Diesel Filter Plant and the addition of Sitel.

LAND USE

Development Trends

The Brownfield Opportunity Area is located in the Corning, New York Metropolitan Statistical Area in Steuben County. The proposed BOA is centrally located within the Southern Tier of central New York State. On a local level, the BOA is divided among the Town of Erwin and the villages of Painted Post and Riverside; the majority of properties and acreage are located within the Village of Painted Post. The identified BOA has already been developed; current development trends are taking place in the suburbs, away from the urbanized core of the Village of Painted Post.

All three municipal governments have prioritized attracting new development. The involved municipalities are partnering with local development organizations to attract and retain complementary businesses. Three Rivers Development Corporation is focusing on compatible developments to this region. Local community groups have worked through prior development concerns and sources of community opposition; these groups have identified several forms of redevelopment that match their long term vision of the BOA. Groups like Painted Post Forward have been involved with the BOA from the beginning, and are seriously pursuing a variety of economic development opportunities. Local leaders have identified several key areas in the community that are ripe for redevelopment.

Within the BOA there is ample space to locate or expand new businesses. Strong community ties and local pride in this area would help to support any future commercial endeavors. Steuben county residents have a reputation as loyal consumers, and would relish any opportunity to "do business" closer to home.

Two strong land use development trends exist within the defined BOA study area. The first trend is the adaptive re-use of existing properties. Commercial landowners are the main proponents of adaptive re-use. Structurally sound buildings located in the developed urban area are re-purposed to suit the needs of the new owners. This trend is strongest where the building is in good condition. For example, the former Pizza Hut in the Cinema Plaza is being renovated as a Moose Lodge; the former Jamison's Marine and is being redeveloped as Lucky's Auto; the former Trixie's Restaurant is now the Crystal Cleaners. To understand which buildings have re-development potential and which parcels are potential 'shovel-ready sites', an assessment and condition study of the structures, buildings and facilities strategic sites has been conducted.

The other strong land development pattern is the renovation of existing uses. Residential landowners are the most common renovators. Residential buildings are the most common type of building in the BOA, comprising 156 acres of land within the 494 acre BOA.

There are no buildable greenfields within the BOA boundary. W ithout any incentives in place, development demand on br ownfields in the BOA is limited. I n the existing economic environment, developers are very likely to generate highway oriented sprawl on the rural lands surrounding the dense Brownfield Opportunity Area.

The Brownfield Opportunity Area is primed for revitalization. Roadways and utilities are in place. Large sites adjacent to population clusters are available. C reating a new trend centered on brownfield redevelopment would be an ideal way to incorporate the pockets of adaptive re-use with the vacant, underutilized and brownfield sites in the EPPR BOA, where utility service is already provided.

Land Use

The existing land use pattern in the Erwin/Painted Post/Riverside BOA has evolved out of the Native American past of New York's Southern Tier. The Cohocton River flowing east joins the Tioga River flowing north from Pennsylvania at the site of the "Painted Post" which begins the Chemung River. Early settlers followed the Chemung River and Native American trails and founded small settlements at this prime location. Soon the area was dominated by farming in the floodplains and forestry on t he steep hills surrounding the busy commercial centers along the rivers. As the population in the area grew, easily developed areas with good soils and little slope along transportation routes became more densely settled.

Marginal land on steep slopes and in poorly drained wetlands was not put to use for residential or commercial use and the beautiful hillsides surrounding the Erwin/Painted Post/Riverside BOA remained undeveloped.

Large tracts of industrial land in Painted Post were devoted to manufacturing; all of that land is included in the BOA. In 1899 the Rand Drill Company, later merging with Ingersoll-Sargeant Company to form Ingersoll-Rand, began manufacturing compressors in Painted Post. This thriving company continued to expand and workers lived in the surrounding dense residential neighborhoods. T he village center prospered providing the needed support businesses and services. Schools, parks and community buildings were built and a close-knit community was created.

1916 Photo overlooking Painted Post's Village Square, courtesy of Mr. Erwin

This picture shows the extent of urban development in the village by 1916. Densely clustered multi-use buildings line the major transportation corridors, and vast fields spread out toward the low hills.

The BOA area today generally reflects the land use pattern of the past. Land in the 'Urban Core" is densely developed; land use intensity decreases further from the urban core. A significant difference between the BOA and the less densely developed land surrounding the BOA is in land devoted to roads and public services. More than 150 acres are needed for Interstate 86 and related exits. Railroads consume a total of 27 acres. About 80 acres within the BOA are industrial, the next largest land use category. Residential and commercial land uses are comparable sizes as 60 acres are in medium to high density (.15 acre lots) residential uses and 53 acres are commercial.

Community services such as school property and the Village Square plaza and parking make up about 35 acres in the BOA. A significant expanse is vacant at 34 acres. A description of this land is detailed in Table 10. The Village of Painted Post contains all of the 18.5 acres of parks including Hodgman Park and the Erwin Museum and hiking/biking trail. The table below lists land uses and their distribution throughout the BOA. The Nomination Study will further examine the existing land uses in the BOA. The land use information gathered in the Nomination Stage will be of critical importance in making recommendations for future businesses in the BOA.

Table 9: Land Use by Acres

Land use /Acres	Erwin	Painted Post	Riverside	Total
Commercial	17.2	17.2	18.9	**53.4**
Community Services	0	34.9	0	**34.9**
Conservation/Parks	0	18.5	0	**18.5**
Industrial	0	72.6	8.6	**81.3**
Public Services	3.6	13.3	9.6	**26.5**
Recreation & Entertainment	0	7.6	0	**7.6**
Residential	3.6	49.1	7.5	**60.2**
Roads	45.9	66.9	43.2	**156**
Vacant	23	8.8	2.2	**34**
Unknown/Other	0	21	0	**21**
TOTAL	93.3	309.9	90	**493.4**

Source: Steuben County, Southern Tier Central

Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 5

Land Use

This map was prepared for the Town of Erwin, the New York State Department of State and the New York State Department of Environmental Conservation with state funds provided through the Brownfield Opportunity Area program.

Village of Painted Post

Town of Erwin

Village of Riverside

- BOA Boundary
- interchanges
- Interstate Highways

Land Use

- Agricultural
- Residential
- Vacant
- Commercial
- Recreation & Entertainment
- Community Services
- Industrial
- Public Services
- Wild, Parks & Open Space

0 625 1,250 2,500 Feet

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ZONING

Existing zoning regulations in the three BOA communities have their roots in zoning laws adopted in the 1960's that segregate "sensitive" uses, such as r esidential, from "incompatible" uses such as commercial and industrial. It made sense to protect neighborhoods from heavy industrial uses and the noise, traffic and pollution that accompanied industry in those days. S ince then, as a response to the destruction caused by Tropical Storm Agnes Flood in 1972 to the downtown, Painted Post created planned commercial and planned urban center districts which allowed more flexibility in layout and uses for the Village of Painted Post downtown area.

In Erwin and Painted Post, a "mixed-use" category was added in the 1990s to permit any zoning district to allow two or more land uses to exist on o ne property, thus expanding development options. Erwin also adopted development standards for urban landscapes which encourage infill development to match the classic village center. Riverside has made small changes to its original zoning law, but intends to make updates based on information and policy guidance provided by the BOA project. The current zoning laws for each BOA community can be found on t he STC webpage: www.stcplanning.org then click on "Local Laws and Plans."

Table 10: Zoning by Acres

Zoning Description		Acres	Rural	Residential	Mixed-use	Commercial	Industrial	Utilities/ Roads
Erwin	Business 3 - Neighborhood Services	46				46		
	Regional Service	21.7				21.7		
	Multi-Use District	3.2			3.2			
	Rural District	20.1	20.1					
Erwin Total		**91**	**20.1**	**0**	**3.2**	**67.7**	**0**	**0**
Painted Post	Urban Center Residential	93.6		93.6				
	Industrial	55.4					55.4	
	Planned Residential District	13.6		13.6				
	Planned Commercial District	14.5				14.5		
	Business	3.2				3.2		
	Industrial	65.4					65.4	
	Route 17	15.9						15.9
	Flood Plain Protection District	0						
	Urban Center	3.7			3.7			
	Medium Density Residential	45.1		45.1				
Painted Post Total		**310.5**	**0**	**152.4**	**3.7**	**17.7**	**120.8**	**15.9**
Riverside	Residential	35.9		35.9				
	Commercial	12.2				12.2		
	Industrial	42.9					42.9	
Riverside Total		**91**	**0**	**35.9**	**0**	**12.2**	**42.9**	**0**
TOTAL		**493.4**	**20.1**	**188.3**	**6.9**	**97.6**	**164.7**	**15.9**

Source: Southern Tier Central

Commercially-zoned areas inside the BOA are concentrated at the east and west intersections of I-86 and Route 415. About 70 acres of the 91 acres of Erwin in the BOA are zoned various types of commercial. Almost all of the Village of Painted Post's and Riverside's commercially zoned land, (about 20 and 12 acres respectively) is located in the BOA. The areas zoned industrial in the BOA are located in the center of the community in Painted Post and Riverside. This totals about 120 acres in Painted Post and 43 acres in Riverside. In the BOA there exists one primary residential area along Route 415 beginning at the western edge of Riverside and continuing toward the western border of Painted Post. In the center of the BOA, southwest of Route 415, a densely populated residential area dominates the landscape. There is also an isolated residential area surrounded by the highway and commercial/industrial zones in Riverside. Residentially-zoned land makes up almost 200 acres. See **Table 11** on page 31 for the acreage breakdown and the following page for the zoning district map.

Special Districts

In the past, local economic development activities have not focused on the Brownfield Opportunity Area. This BOA was deprived of some of the special districting opportunities available to larger or less productive communities. The Painted Post area is now in need of concentrated revitalization efforts which may include the creation of a special improvement district.

In the surrounding area there are several existing development districts. The City of Corning is the home of most of the local development districts: the Gaffer District, Corning Intown District Management Association (CIDMA), and many NYS Empire Zone parcels. The Gaffer District is the City of Corning's Business improvement District; the gaffer district is an organization centered in corning, responsible for business recruitment, event promotion, and branding in Corning's Downtown. CIDMA primarily responsible for physical maintenance in the Gaffer District. In spite of other local communities' development efforts, there are no existing economic development districts inside the BOA. One BOA parcel is in an Empire Zone.

There is little potential in the EPPR BOA for the creation of a special district. The BOA project is the joint framework for making/implementing recommendations in the three municipalities. The creation of a special district would face three major fronts of resistance: funding, authority, and scope. Local government budgets cannot afford funding the creation of a new organization. Even if funding became available, disagreement would exist on the percent of funding provided by each municipality. Attempting to create an organization with intra-jurisdictional power is highly infeasible. Finally, it is unlikely that the municipalities would agree on the scope (goals) of a BOA wide organization, given that the steps necessary to improve conditions in each community differ.

Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 6

Zoning

This map was prepared for the Town of Erwin, the New York State Department of State and the New York State Department of Environmental Conservation with state funds provided through the Brownfield Opportunity Area program.

Village of Painted Post

Town of Erwin

Village of Riverside

BOA Boundary

interchanges

Interstate Highways

Agricultural

Residential

Business

Commercial

Industrial

Flood Plain Protection

0 625 1,250 2,500 Feet

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TRANSPORTATION & INFRASTRUCTURE

Water

All properties within the BOA are served by Village of Painted Post public water. The Village of Painted Post uses three wells to supply water: Well #2 has a capacity of 500 gallons per minute (GPM), Well #3 pumps about 500 GPM (capacity is 750 GPM) and Well #4 is permitted at 1000 GPM though pumps from 800 to 900 GPM on average. They were constructed in 1941, 1956 and 1975 respectively. The Village also has two water storage tanks: a 1.5 million gallon tank on Reservoir Road and a 50,000 gallon tank to on West Hill Terrace. The distribution system is adequate to provide water to customers. The Village of Riverside is served by the Village of Painted Post with back-up interconnection with the City of Corning. Painted Post serves the Town of Erwin to the Victory Highway Wesleyan Church on Route 415 though it is expected that the Coopers Plains Water District project will be complete by the end of 2009, providing water to the Erwin BOA and beyond from the Morningside Heights wells in Gang Mills. However, the new water service will be interconnected with Painted Post as emergency back-up.

In the fall of 2002 the City of Corning, Village of Painted Post, Village of Riverside, Town of Erwin, and the Town of Corning undertook the Valley Water Supply Study to identify cost effective ways of providing water service throughout the communities, to explore new administrative options, and to create a Drought Management Plan to protect critical drinking water and industrial needs during dry seasons such as what was experienced in 1999-2001.

Results of the study show a long term advantage to the communities to consider new ways to provide water to the Chemung Valley. The oversight committee continued to study the matter. Most recently, with the economic downturn, interest in shared services has increased and the idea of a regional water supply system may become a priority again.

Sewers

The entire BOA is served by public sewer service. The Village of Painted Post owns and operates a wastewater treatment plant (WWTP) with a capacity of 500,000 gallons per day (GPD). The average daily load is approximately one half of capacity, leaving approximately 250,000 gallons/day for future growth. A 2.0 million dollar upgrade of the Painted Post WWTP, completed in 2001, brought the plant into compliance with its state discharge permit. The City of Corning provides sewer service to the Village of Riverside. The BOA portion of the Town of Erwin is served by the Village of Painted Post.

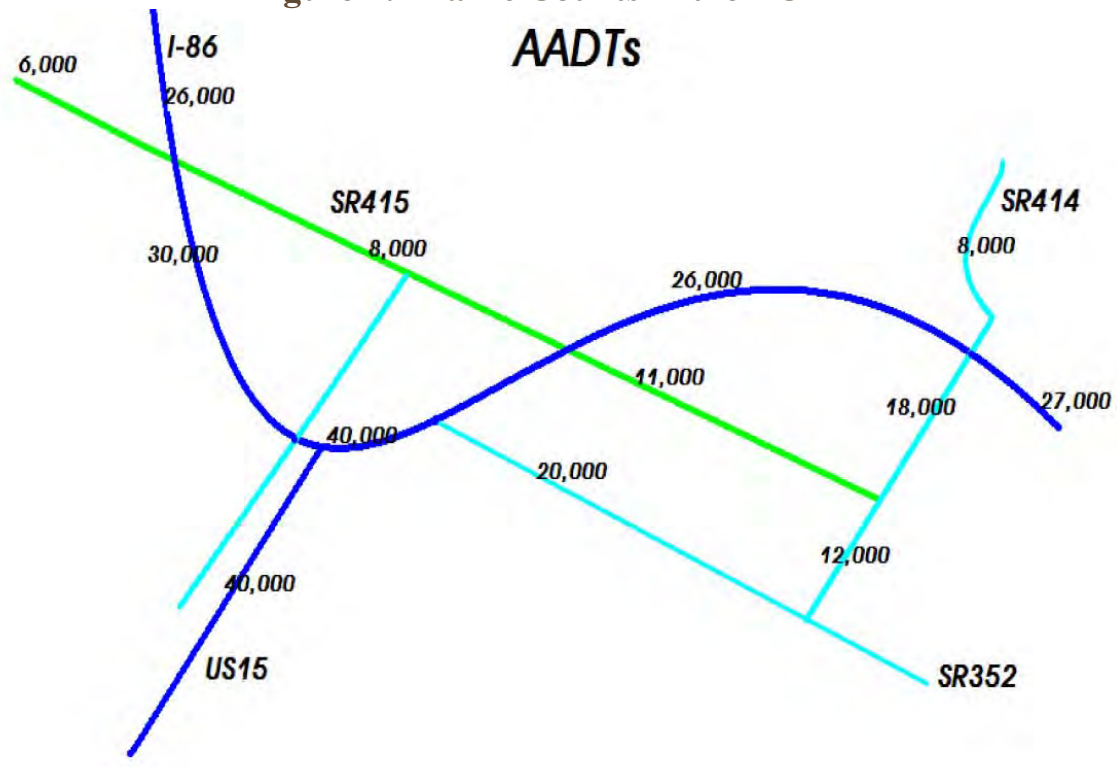
Roads

The Erwin/Painted Post/Riverside BOA was formed around the intersection of I-99, I-86 and Route 415. These local roadways see a great deal of daily traffic and are a fundamental connection between Erwin, Painted Post, and Riverside. SR 415 within the BOA is classified as an Urban Minor Arterial. The function of this highway is intended to distribute traffic between the larger Interstate System and the lower Local system. Preserving/enhancing mobility along this corridor is important because it serves as the preeminent link between the BOA and the interstate via Exits 43, 44, 45, and 46.

The level of service for a given section of highway can be calculated using traffic volumes, lane widths, travel speeds, signal timing, and a variety of other data inputs. Those computations have not been generated at this time. Traffic volumes indicate the demand placed on a given facility. SR 415 has traffic volumes of 11,000 + vehicles per day (VPD) to 6,000+ vehicles per day (see figure 9). Note the larger volumes occur on the 4-lane facilities.

During the pre-nomination phase, basic traffic information was collected. For the nomination study, an in-depth traffic analysis was conducted to evaluate those critical points that may face increased use after redevelopment in the BOA.

Figure 7: Traffic Counts in the BOA



Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 8

Transportation

This map was prepared for the Town of Erwin, the New York State Department of State and the New York State Department of Environmental Conservation with state funds provided through the Brownfield Opportunity Area program.

Village of Painted Post

Town of Erwin

Village of Riverside

Victory Hwy
Ramp
Erwin Hollow Rd
Parkview Dr
Omalia Cir
W Hill Rd
W Hill Ter
Pioneer St
W Water St
High School
Robert Dann Dr.
Lynn Morse Dr
Canada Rd
Reservoir Rd
Roche Dr
Hillcrest Dr
Kimble Hill Rd
Craig Park Rd
Park Pl
Nobriga Ln
Pine St
W High St
W Chemung St
Rand Ave
Fairview Ave Ext
Davis St
Keefe Blvd
Grace Blvd
Fairview Ave
Hornby Dr
Oakwood Dr
Hamilton Rd
Hamilton Cir
Fenderson St Ext
Science Center Rd.
Charles St
Steuben St
W Water St
Village Sq
N Hamilton St
S Platt St
Delaware Ave
Oak St
Stanton St
Rand St
Elmhurst Cir
Stiles St
Riverside Cir
Fenderson St
Alley 9
Dwight Ave Ext
Stimson St
Imperial Ave
E High St
1st St
Jerome St
Bronson St
Brewster St
Stull Ln
Unnamed Street
E Water St
Hamel St
Kane St
Hart St
Alley 6
Seneca St
Buffalo St
Balcom Ave
Townsend Ave
Cutler Ave
Fuller Ave
Dwight Ave
Pulteney St
Taylor St
S Buffalo St
Cayuta St
W Pulteney St
W William St
Remington Blvd
Foothill Dr
Chatfield Pl.
Silverback Ln
Robert Dann Dr
S. Hamilton St.
Town Access Road A
US Hwy 15
Tara Pl
Katie Ln
Lower Pace Rd
Dent Jr Pkwy W

BOA Boundary
Local Roads
County Roads
State Highways
Interstate Highways
interchanges

0 625 1,250 2,500 Feet

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TRAFFIC & PARKING ANALYSIS

The Erwin/Riverside/Painted Post Brownfield Opportunity Area (E/R/PP BOA) Traffic Study (or the "Study") was undertaken to identify and document any potential significant changes to traffic operations at selected intersections near the Strategic Sites. Each proposed site is likely to experience increase traffic due to land development and re-infusion of business into the area.

Analysis Approach

Selection of Study Intersections and Methodology

Employed to Evaluate Same Based on data provided concerning the Project's proposed changes to land use, estimated vehicle trip projections were developed. The estimates were based on referenced data provided by Peter J. Smith & Company and was analyzed utilizing, among other tools, the Institute of Traffic Engineers "Trip Generation Manual" (referred to as "the Manual"). The Manual presents trip generation data for existing facilities of various types including various types of retail, industrial and residential land uses. By utilizing tools like the Manual, vehicle trips for similar facilities can be estimated by identifying types of facilities with the Manual's accepted traffic estimates for such facilities. In the case o f manufacturing, the Manual presents estimates for trips generated as a function of square feet of gross floor area. This data is then used to generate estimated trips for the proposed condition.

Projected trips for each strategic site are distributed throughout the roadway network based on current driver tendencies, existing traffic patterns and engineering theory. The following intersections were chosen, and approved for inclusion in the Study's empirical analysis portion of the study based on field observation, strategic site location, and existing traffic patterns:

The Town of Erwin:

- Robert Dann Drive/Route 415
- West Water Street/Route 415

Village of Painted Post:

- West High Street/Steuben Street
- Steuben Street/Route 415
- North Hamilton Street/Route 415
- North Hamilton Street/Water Street
- Bronson Street/Route 415
- Chemung Street/North Hamilton Street
- Route 415/West High School

Village of Riverside:

- Route 415/Buffalo Street
- Route 415 Taylor Road
- Buffalo Street/East Water Street

Traffic Study Methodology

The Study was completed using methodologies set forth in the Highway Capacity Manual (HCM), prepared by the Transportation Research Board, a unit of the National Research Council, which serves the National Academy of Sciences and the National Academy of Engineers. The HCM provides a collection of state of the art techniques for estimating the Level of Service for transportation facilities including intersections and roadways.

The portion of the Study where empirical data was collected evaluated each intersection's capacity and Level of Service (LOS). The capacity of an intersection or facility is the maximum hourly rate at which vehicles can reasonably be expected to traverse a p oint or section of roadway. Level of Service is a quality measure used to describe operational conditions within a traffic stream, generally in terms of such criteria as speed and travel time; freedom to maneuver; traffic interruptions; comfort and convenience. Six (6) LOS categories are recognized for each type of facility that has analysis procedures available. LOS are designated with the letters A thru F with LOS A representing the best operating conditions and LOS F representing the worst.

Generally speaking, the various levels of service are defined as follows:

- **LOS A -** Describes free-flow operations. Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The effects of incidents or point breakdowns are easily absorbed at this level.

- **LOS B -** Represents reasonably free-flow with free-flow speeds being maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents and breakdowns are still easily absorbed.

- **LOS C -** Provides for flow with speeds at or near free-flow conditions. Freedom to maneuver within the traffic stream is noticeably restricted; lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service will be substantial. Queues may be expected to form behind significant blockage.

- **LOS D -** Is the level at which speeds begin to decline slightly with increasing flows and density begins to increase somewhat more quickly. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions. LOS D is the LOS that is considered acceptable during peak traffic hours in urban areas.

- **LOS E -** Describes operation at capacity. Operations at this level are volatile, because there are virtually no usable gaps in the traffic stream. Vehicles are closely spaced, leaving little room to maneuver within the traffic stream. Any disruption of the traffic stream, such as vehicles entering from a ramp or a vehicle changing lanes, can establish a disruption wave that propagates throughout the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious breakdown with extensive queuing. Maneuverability within the traffic stream is extremely limited, and the level of physical and psychological comfort afforded the driver is poor.

- **LOS F -** Describes breakdowns in vehicular flow. Such conditions generally exist within backups forming behind breakdown points or points of congestion. Level of service at traffic signal controlled and stop controlled intersections is a measure of the amount of time (seconds per vehicle) that vehicles are delayed in moving thru the intersection (control delay). The average control delay per vehicle is estimated for each lane group and aggregated for each approach and for the intersection as a whole. LOS is directly related to the control delay value.

The criteria are listed in the following table:

Table 11: LOS Benchmarks

LOS Criteria for Signalized Intersections	
LOS	Control Delay per Vehicle (s/veh)
A	< 10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	>80
LOS Criteria for Two-way and All-way Stop Controlled Intersections	
LOS	Control Delay per Vehicle (s/veh)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Existing Traffic Counts

Traffic count times were identified to determine the AM and PM peak hours at each analyzed intersection, which is to say the times of the day where traffic is heaviest based on the number of vehicle trips taken. Each count period ran for a total of two (2) hours. Due to the high number of intersections being analyzed, counts were taken on three (3) days, between Tuesday, April 17 and Thursday, April 19, 2012. The count times varied due to the specified location and anticipated traffic generator. The AM and PM count periods are listed below for each selected intersection.

Table 12: Traffic Count Times

Intersection	Existing Count Times	
The Town of Erwin:	AM	PM
Robert Dann Drive/Route 415	7-9 AM	4-6 PM
West Water Street/Route 415	7-9 AM	4-6 PM
Village of Painted Post:	AM	PM
West High Street/Steuben Street	7-9 AM	4-6 PM
Steuben Street/Route 415	7-9 AM	4-6 PM
North Hamilton Street/Route 415	7-9 AM	4-6 PM
North Hamilton Street/Water Street	7-9 AM	4-6 PM
Bronson Street/Route 415	7-9 AM	4-6 PM
Chemung Street/North Hamilton Street	6-8 AM	2-4 PM
Route 415/West High School	7-9 AM	2-4 PM
Village of Riverside:	AM	PM
Route 415/Buffalo Street	7-9 AM	4-6 PM
Route 415 Taylor Road	7-9 AM	4-6 PM
Buffalo Street/East Water Street	7-9 AM	4-6 PM

Traffic Projections

Growth Rate

A 1.0% per year growth rate has been applied to the existing traffic counts to project traffic volumes to the estimated full build out year of 2022. In the past 5-7 years New York State began shrinking in population and a 0.5% per year growth rate became the accepted value. In this case, due to the location and recent interest in Marcellus shale, we have spoken with NYSDOT planners and verified the usage of the above mentioned 1.0% growth rate.

Trip Generations

Estimated vehicle trip generations were developed based on expected land use data for each strategic site. From these potential land uses, the Institute of Traffic Engineers "Trip Generation Manual" provides expected additional trips for facilities with similar characteristics. In this case, the Manual presents trip generation data for existing facilities of various types including industrial, residential and many types of retail land uses.

The proposed land uses included in these Brownfield Opportunity Areas correspond to the following sections within the Trip Generation Manual:

The above trip generation information was then combined, where applicable, to determine general averages for use within the parameters of this study. From this point forward each land use, depending on size, will generate the following amount of trips:

Table 14: Base Estimates

Development Type	AM	PM
Commercial	87 trips/1000 SF	98 trips/1000 SF
Industrial	37 trips/1000 SF	37 trips/1000 SF
Residential	21 trips	26 trips
Mixed Use	9 trips/1000 SF	9 trips/1000 SF

Future LOS was determined based upon a moderate projected build-out as defined in the Urban Design Plan within the Summary Analysis, Findings and Recommendations section of this document.

Table 13: Land Uses Considered

Section	AM Trips	PM Trips
Section 140 – Manufacturing	37	37
Section 230 – Residential Condominium/Townhouse	21	26
Section 844 – Gasoline/Service Station	98	117
Section 815 – Free-Standing Discount Store	5	19
Section 816 – Hardware/Paint Store	5	20
Section 832 – High-Turnover (Sit-Down) Restaurant	42	49
Section 833 – Fast-Food Restaurant without Drive-Through Window	197	118
Section 843 – Automobile Parts Sales	10	27
Section 845 – Gasoline Service Station with Convenience Market	350	434
Section 870 – Apparel Store	0	17

Trip Assignments

The newly generated trips were then assigned to the appropriate arriving and/or departing direction for each intersection during the AM and PM peak hour using existing traffic patterns and engineering judgment.

LOS Analysis

The level of service analysis was completed using Synchro by Trafficware. Synchro is traffic analysis software that incorporates the methodologies set forth in the Highway Capacity Manual. This software is accepted and used by state and local governments for traffic analysis, including the New York State Department of Transportation (NYSDOT).

The existing LOS analysis is based on traffic counts taken over a three day period, April 17-19, 2012. The 2022 LOS analysis has a 1.0% growth rate applied uniformly over the approach movements, as well as the distributed trip generations described above.

Existing LOS

The existing AM LOS analysis shows no significant concern areas for the intersections with each intersection and individual movement operating at LOS C or better. The following table summarizes the analyzed intersections, approach LOS, and intersection LOS during their respective AM peak hours:

Table 15: Existing AM Peak Hour LOS Analysis (Seconds of Delay)

Node/Intersection	Approach				Overall
	EB	WB	NB	SB	
1. Robert Dann and Route 415	B (10.9)	A (4.6)	B (10.8)	-	A (8.6)
4. West Water Street and Route 415	A (3.9)	A (3.5)	B (12.9)	A (0.1)	A (3.7)
40. Route 415 and West High School	B (15.9)	B (11.8)	C (27.2)	B (12.4)	B (16.8)
8. Route 415 and Steuben Street	C (23.8)	C (20.3)	A (2.0)	A (0.3)	A (4.9)
11. Steuben Street and West High Street	A (2.4)	A (0.0)	-	B (10.2)	A (4.9)
12. Route 415 and North Hamilton Street	C (28.8)	C (35.0)	B (16.6)	B (15.9)	C (21.5)
21. North Hamilton Street and Chemung Street	A (0.4)	A (0.3)	B (12.3)	B (11.8)	A (1.0)
18. North Hamilton Street and West Water Street	A (3.5)	A (8.1)	-	B (12.5)	A (6.1)
15. Route 415 and Bronson Street	A (0.1)	A (0.0)	C (22.3)	C (18.3)	A (0.4)
26. Route 415 and Buffalo Street	C (22.4)	B (14.8)	B (18.8)	B (17.4)	B (13.7)
27. Route 415 and Taylor Street	A (0.0)	A (0.3)	B (14.6)	C (16.0)	A (0.4)
31. Buffalo Street and East Water Street	B (13.7)	C (18.5)	A (0.2)	A (0.1)	A (0.7)

Traffic counts taken during the existing PM peak hour showed similar results to the AM for each intersection. There were no LOS concerns, with each intersection again operating at LOS C or better. T he following table summarizes the analyzed intersections, approach LOS, and intersection LOS during their respective PM peak hours:

Table 16: Existing PM Peak Hour LOS Analysis (Seconds of Delay)

Node/Intersection	Approach				Overall
	EB	WB	NB	SB	
1. Robert Dann and Route 415	B (11.0)	A (6.4)	B (13.1)	-	B (10.3)
4. West Water Street and Route 415	A (3.8)	A (3.9)	B (10.4)	A (7.6)	A (4.2)
40. Route 415 and West High School	B (10.2)	A (6.3)	C (22.10)	B (17.0)	B (12.0)
8. Route 415 and Steuben Street	B (11.4)	B (12.7)	A (1.2)	A (0.6)	A (2.5)
11. Steuben Street and West High Street	A (1.7)	A (0.0)	-	A (9.3)	A (5.0)
12. Route 415 and North Hamilton Street	C (27.8)	C (29.4)	B (13.6)	B (14.8)	C (20.7)
21. North Hamilton Street and Chemung Street	A (0.6)	A (0.1)	C (16.8)	B (13.9)	A (2.5)
18. North Hamilton Street and West Water Street	C (26.6)	A (8.2)	-	B (16.0)	B (18.4)
15. Route 415 and Bronson Street	A (0.1)	A (0.0)	A (0.0)	C (16.4)	A (0.4)
26. Route 415 and Buffalo Street	B (18.6)	C (26.0)	B (14.2)	C (30.2)	C (20.7)
27. Route 415 and Taylor Street	A (0.3)	A (0.1)	B (12.9)	C (17.5)	A (0.5)
31. Buffalo Street and East Water Street	B (14.2)	C (23.6)	A (0.6)	A (0.2)	A (2.8)

An analysis was performed to estimate the LOS for the study intersections a date 20 years beyond the study date to simulate a full build out condition.

The 1.0% growth rate was applied to each movement at the study intersections. The tables below show the results of this future 2022 analysis:

Table 17: Existing+10 Years (2022) AM Peak Hour LOS Analysis (Seconds of Delay)

Node/Intersection	Approach				Overall
	EB	WB	NB	SB	
1. Robert Dann and Route 415	B (14.0)	A (5.2)	B (10.9)	-	B (10.6)
4. West Water Street and Route 415	A (3.6)	A (3.4)	B (16.7)	A (0.2)	A (3.5)
40. Route 415 and West High School	B (18.5)	B (17.0)	C (28.7)	B (11.9)	B (19.7)
8. Route 415 and Steuben Street	E (39.4)	E (47.4)	A (1.5)	B (0.3)	B (7.5)
11. Steuben Street and West High Street	A (2.5)	A (0.0)	-	B (10.4)	A (5.0)
12. Route 415 and North Hamilton Street	C (22.2)	D (37.3)	C (24.7)	C (28.2)	C (27.9)
21. North Hamilton Street and Chemung Street	A (0.5)	A (0.4)	B (13.3)	B (12.7)	A (1.1)
18. North Hamilton Street and West Water Street	B (15.4)	A (9.1)	-	B (15.3)	B (13.2)
15. Route 415 and Bronson Street	A (0.2)	A (9.1)	F (118)	F (97.2)	A (6.2)
26. Route 415 and Buffalo Street	A (2.0)	B (15.8)	B (19.2)	B (17.4)	B (13.0)
27. Route 415 and Taylor Street	A (0.1)	A (3.2)	C (22.1)	C (26.4)	A (1.8)
31. Buffalo Street and East Water Street	C (22.1)	D (48.9)	A (0.1)	A (2.5)	A (2.0)

Table 18: Existing+10 Years (2022) PM Peak Hour LOS Analysis (Seconds of Delay)

Node/Intersection	Approach				Overall
	EB	WB	NB	SB	
1. Robert Dann and Route 415	B (20.0)	A (7.5)	B (13.0)	-	B (14.1)
4. West Water Street and Route 415	B (14.9)	B (14.9)	A (11.1)	A (7.8)	B (13.8)
40. Route 415 and West High School	B (13.7)	A (7.1)	C (23.2)	B (16.8)	B (13.5)
8. Route 415 and Steuben Street	C (15.7)	C (18.2)	A (1.3)	A (1.5)	A (3.0)
11. Steuben Street and West High Street	A (1.7)	A (0.0)	-	A (9.4)	A (5.1)
12. Route 415 and North Hamilton Street	D (36.0)	D (36.7)	C (28.3)	C (27.4)	C (31.0)
21. North Hamilton Street and Chemung Street	A (0.8)	A (0.1)	C (15.5)	B (19.9)	A (3.0)
18. North Hamilton Street and West Water Street	D (35.7)	A (8.7)	-	B (19.9)	C (23.5)
15. Route 415 and Bronson Street	A (0.2)	A (0.0)	F (326)	E (48.2)	F (100)
26. Route 415 and Buffalo Street	C (23.1)	C (32.8)	C (22.3)	C (31.9)	C (26.4)
27. Route 415 and Taylor Street	A (0.5)	A (0.2)	F (237)	C (24.8)	F (51.2)
31. Buffalo Street and East Water Street	C (22.8)	F (581)	A (0.6)	A (0.2)	F (192)

This analysis shows that there are a few study intersections which have some LOS related concerns under the full build out condition. During the AM peak hour there are no significant concerns. The PM peak hour does show a few areas which may not presently be equipped to handle the potential increase in traffic due to the redevelopment of each strategic site. The intersection of Route 415 and Bronson Street will need to be modified. An analysis of the intersection with the installation of an actuated signal reveals the LOS can be improved to C (20.4) seconds. Additionally, the intersections of Route 415 and Taylor Street and Buffalo Street and East Water Street, each which service the plaza containing Site G, will be significantly affected. The significant amount of additional trips, combined with the close proximity to interstate I-86 and large amount of traffic traversing Buffalo Street is going to provide for a difficult situation for these sites. Installation of a signal at the Route 415 and Taylor Street intersection along with coordination with the signal at Buffalo Street will help the flow of traffic through this area. Once one direction is progressing, drivers will adjust by nature to the area where they perceive the least amount of delay.

Parking Analysis

Strategic Site A

Currently Site "A" is an undeveloped gravel lot operating as a bus depot. There are three (3) 4,500 square foot commercial buildings proposed for Site "A". According to the Trip Generations that were derived from our analysis there are 87 AM trips and 98 PM trips per commercial building to be generated by this development. This translates into a total of 261 AM trips and 294 PM trips for the site. Currently there are no approved parking spaces for the site. We cannot make a solid recommendation for parking on Site "B" and since there are no parking spaces for this site a feasibility study should be completed to determine if full development is feasible.

Strategic Site B

Site "B" is an undeveloped gravel lot. There are multiple buildings proposed for this site, six (6) 4,500 square foot commercial buildings. . According to the Trip Generations derived from our analysis there are 87 AM trips and 98 PM trips per commercial building. This translates into a total of 359 AM trips and 411 PM trips for the entire developed site. Currently there are no approved parking spaces for the site. We cannot make a solid recommendation for parking on Site "B" and since there are no parking spaces for this site a feasibility study should be completed to determine if full development of Site "B" is feasible.

Strategic Site C

Currently Site "C" is an undeveloped mix of asphalt parking lot, woods and open green space. There are five (5) 50,000 square foot industrial buildings proposed for Site "C". According to the Trip Generations that were derived from our analysis this accounts for 37 newly generated AM trips and 37 newly generated PM trips per industrial building. This translates into a total of 185 AM trips and 185 PM trips for the proposed site. Currently there are no approved parking spaces for the site. It does not appear as though parking will not be an issue at this location due to the size of the property. However, as previously stated, no current parking is available on this site.

Strategic Sites E and F

Currently Sites "E" and "F" are a mix of asphalt parking lot, and open green space and an abandoned industrial site. There are twenty-five (25) 12,000 square foot Mixed-Use buildings, sixteen (16) Townhouse Buildings that total 48,000 square feet and four (4) 50,000 square foot Industrial buildings proposed for Site "E". According to the Trip Generations derived from our analysis this will account for 9 AM trips and 9 PM trips per Mixed-Use building, 1.31 AM trips and 1.62 PM trips per townhouse building and 37 AM trips and 37 PM trips per industrial building. This translates into a total of 394 AM trips and 399 PM trips for the proposed site. Currently there are 40 approved parking spaces for Site "E" and 14 approved parking spaces for Site "F". Based on the approved parking, the size of the property and the volume of development proposed for Sites "E" and "F" there is a parking concern. The recommendation for these sites would be to complete a feasibility study to determine what other parking options are available in the immediate area.

Strategic Site G

Currently Site "G" is an open green space lot surrounded by a strip mall, and a few other private businesses. There are (6) six 4,500 square foot commercial buildings proposed for Site "G". According to the Trip Generations derived from our analysis there are 87 AM trips and 98 PM trips per commercial building, which translates into a total of 522 newly generated AM trips and 588 newly generated PM trips for the site. Currently there are 265 approved parking spaces on and surrounding Site "F". Of the 265 approved parking spaces it appears that approximately one-third of the parking would actually be dedicated for the project site. This would be approximately 88 pa rking spaces dedicated for Site "G". The actual number of parking spaces dedicated to Site "G" would require more research into the parking rights. Based on the approved parking, the size of the property and the volume of development proposed for Site "G" there is reason to believe parking could be accommodated in the area. Even-though it appears as though parking accommodations could be made this would need to be verified through a feasibility study. The recommendation for Site "G" would be to complete a feasibility study to determine if adjacent parking options are available to the potential development.

Additional Traffic Analysis Beyond that Performed for this Study

An existing conditions survey was completed to determine the existing pavement conditions, current speed limits and any other pertinent traffic related information which presented itself during the field survey.

New York Route 415 (Victory Highway) is 45mph through the Town of Erwin and 30mph within the villages of Painted Post and Riverside. Overall the roadway pavement seems to be in good condition, while the striping is faded, but visible. The crosswalks markings are typically worn and non-compliance with current FHWA standards. Several areas have outdated striping, no de tectable warning strips and some intersections have no crosswalk markings at all.

The pavement markings along Buffalo Street need to be replaced, while the pavement condition along Route 415 east of the I-86 overpass is poor. Remington Boulevard (exit from parking lot) also displays areas of poor pavement condition.

BROWNFIELD, ABANDONED & VACANT SITES

In order to complete a thorough and detailed analysis of the Erwin/Painted Post/Riverside BOA, the project team devised a property inventory during the pre-nomination phase. The inventory was also designed to be a functional tool for local development, outside of the BOA process. With input from the public, local governments, the pre-nomination working group and the steering committee, 74 BOA parcels were identified for inclusion in the inventory.

The inventory process began by digitizing the individual parcels identified by the public process; each parcel was given an identifying number and a preliminary category (brownfield, underutilized or vacant). STC continued with an overview of available GIS data and historical records. The recently updated Steuben County Tax Parcel layer was the source of tax parcel number, parcel address, and the owner's name. Based on the Tax Parcel data, project staff classified each tax parcel in the BOA by owner (public/private). STC staff used the parcel layer and GIS tools to calculate the approximate acreage for each inventory parcel. STC had access to local zoning layers for The Town of Erwin, The Village of Painted Post, and The Village of Riverside; using the local zoning layers STC staff was able to determine the zoning for each parcel in the inventory. All of this data was exported to a Microsoft Access database. An Access form was used to extract this information from the database.

Table 19: Brownfield, Underutilized & Vacant Sites by Municipality

Community		Brownfield	Underutilized	Vacant	Unselected	Total
Erwin	Number of Acres	14.60 acres	2.30 acres	6.85 acres	68.01	91.79 acres
	Parcels	4 parcel	2 parcels	2 parcel	41 parcels	49 parcels
	Avg. parcel size	3.65	1.15	3.42	1.66	1.87
Painted Post	Number of Acres	4.7 acres	65.09 acres	5.01 acres	236.49	311.29 acres
	Parcels	6 parcels	12 parcels	2 parcels	385 parcels	405 parcels
	Avg. parcel size	0.79	5.42	2.5	0.61	0.77
Riverside	Number of Acres	4.4 acres	20.11 acres	1.66 acres	64.56	90.73 acres
	Parcels	12 parcels	27 parcels	7 parcels	51 parcels	97 parcels
	Avg. parcel size	0.37	0.74	0.23	1.26	0.93
Total	Number of Acres	23.69 acres	87.5 acres	13.52 acres	369.06	485.31 acres
	Parcels	22 parcels	41 parcels	11 parcels	477 parcels	551 parcels
	Avg. parcel size	1.08	2.13	1.23	0.77	0.88

Source: Southern Tier Central

A draft form with this preliminary GIS data (for each parcel) was distributed to the BOA communities, working groups, and steering committees. The use status, property description, use and environmental history sections of the property inventory were completed by local residents, based on their substantial historical knowledge of this community. The information provided by local residents was incorporated into the Access database, by STC staff. STC revised the inventory format, incorporated two images onto each form, an air photo of the site and an image from the parcel map showing the site in relation to other inventory sites.

Local residents photographed the buildings for context and provided the images to STC. The revised inventory was provided to the BOA communities, working groups, and steering committees for review. The revised format was well received. The BOA communities were able to provide some additional information. STC staff was able to access some historical documents to complete the parcel inventory.

The parcel inventory has been a valuable tool throughout the pre-nomination and nomination process. The inventory has been useful for local governments and developers. The parcel inventory is included as an appendix to the completed nomination study; the inventory can also be accessed at www.STCplanning.org.

511 East High Street, a brownfield site

Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 9

Brownfield, Underutilized & Vacant Sites

This map was prepared for the Town of Erwin, the New York State Department of State and the New York State Department of Environmental Conservation with state funds provided through the Brownfield Opportunity Area program.

Village of Painted Post

Town of Erwin

Village of Riverside

Victory Hwy
Ramp
Erwin Hollow Rd
Parkview Dr
W Hill Rd
W Hill Ter
Omalia Cir
Pioneer Dr
W Water St
High School
Robert Dann Dr.
Lynn Morse Dr
Canada Rd
Reservoir Rd
Roche Dr
Hillcrest Dr
Kimble Hill Rd
Craig Park Rd
Park Pl
Nobriga Ln
Pine St
W High St
W Chemung St
Rand Ave
Fairview Ave Ext
Davis St
Grace Blvd
Keefe Blvd
Fairview Ave
Hornby Dr
Oakwood Dr
Hamilton Rd
Hamilton Cir
Fenderson St Ext
Rand St
Elmhurst Cir
Stanton St
Charles St
Stiles St
Riverside Cir
Dwight Ave Ext
Stimson St
Science Center Rd.
Charles St
Steuben St
W Water St
N Hamilton St
S Platt St
Village Sq
Delaware Ave
Oak St
E High St
Imperial Ave
Fenderson St
Alley 9
Jerome St
Bronson St
1st St
Unnamed Street
Brewster St
Stull Ln
Alley 6
Seneca St
Buffalo St
Ramp
Foothill Dr
Chatfield Pl.
Silverback Ln
Robert Dann Dr.
S. Hamilton St.
Town Access Road A
E Water St
Hart St
Hamet St
Kane St
Balcom Ave
Townsend Ave
Cutler Ave
Fuller Ave
Dwight Ave
Pulteney St
S Buffalo St
Taylor St
Cayuta St
W Pulteney St
W William St
Remington St
Dennison Pkwy W
Tara Pl
Katie Ln
US Hwy 15
Lower Pace Rd

BOA Boundary
Interstate Highways
interchanges
Brownfield
Underutilized
Vacant

0 625 1,250 2,500
Feet

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STRATEGIC SITES

During the Step One or Pre-Nomination phase of the Erwin-Painted Post-Riverside Brownfield Opportunity Area process, the need for up to eight strategic sites was identified. Each of the sites was to be subjected to a detailed analysis including:

- Ownership/Grant/Lease Status
- Tax Lien Properties Analysis
- Assessment and Condition of Structures, Buildings or Facilities
- Assessment of Historic and Architectural Resources
- Phase I Environmental Site Assessment

The goal of identifying and analyzing the strategic sites is to provide potential buyers or developers with readily available information they can use to determine the BOA site's suitability for development while alleviating the burden and cost of ESA preparation to the owners. During the Step 2 process, there were seven sites identified for completion of the detailed analysis and six of these were further subjects of Phase I ESAs. An eighth site was identified but the steering committee felt the end-use of the site – the landing for the proposed West Water Street Extension bridge – did not require the same level of detailed analysis to which the others were subjected.

To assist communication regarding the sites among the project stakeholders and to differentiate them from the "slip sheet" numbering system from the Step One Pre-Nomination, the sites were lettered, A through H. The sites are:

- Strategic Site A
  - Two parcels: 124 Victory Highway and 130 Victory Highway, Erwin
- Strategic Site B
  - 125 Victory Highway, Erwin
- Strategic Site C
  - 450 W. Water St., known as the former Ingersoll Rand foundry site, Painted Post
- Strategic Site D
  - 165 Charles St., Painted Post
- Strategic Site E
  - Two parcels: 410 E. High St., Riverside and 412-414 E. High St., Painted Post
- Strategic Site F
  - A parcel bounded by First Street on the west and Bronson on the east, Chemung Street Extension and railroad on the south and a residential neighborhood on the north, Painted Post
- Strategic Site G
  - A portion of Riverside Plaza, 360-372 Pulteney St., Riverside
- Strategic Site H
  - A collection of residential properties to the west of Strategic Site C.

The following is a brief summary of the findings of the analyses.

Strategic Site A

A Phase I ESA was performed on Strategic Site A by Hunt EAS.

Strategic Site A was selected because of its location proximate to the highway interchange. The site is comprised of two parcels, 124 Victory Highway, owned by T&K Realty and 130 Victory Highway, owned by GBR Three AC LLC. Tax map ids are 280.00-1-12 and 280.00-1-56. The two parcels, which are a total of 8.06 acres, are located on the north side of Victory Highway just west of I-86 Exit 43 in the Town of Erwin.

Strategic Site A

124 Victory Highway has a 37,359 square foot commercial building with an asphalt parking lot. There is a drainage swale at the back of the property. The building is currently being used as a bus garage and dispatch facility by Birnie Transportation Services. There is a 10,000-gallon diesel fuel tank and a 1,000-gallon gasoline tank on site; containment measures are in place on both. Volatile organic compounds were once detected on the site, leading to the removal of an underground fuel tank; the degreaser trichloroethylene has been detected on site and several spills reported.

130 Victory Highway is a vacant site.

There are no known environmental liens, deed restrictions or use limitations on either site. However, the site's own history and the location of nearby sites environmental records at a greater elevation than Strategic Site A warrant additional investigation and it should be the subject of a Phase II ESA to determine what, if any, contaminants are present, how serious the contamination is and to develop a remediation plan. Hunt EAS performed a building condition survey and made multiple recommendations for safety and accessibility renovations and to allow the building to meet current standards and needs. A structural evaluation of the building should be performed if the building is to be reused.

This map was prepared for the Town of Erwin, the New York State Department of State and the New York State Department of Environmental Conservation with state funds provided through the Brownfield Opportunity Area program.

Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 10

Strategic Sites

A
B
C
D
E
F
G
H

Village of Painted Post
Town of Erwin
Village of Riverside

BOA Boundary
Interstate Highways
interchanges
Strategic Sites

0 625 1,250 2,500 Feet

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Strategic Site B

A Phase I ESA was performed on Strategic Site B by Hunt EAS.

Strategic Site B was selected because of its location proximate to the interchange. The site is comprised of one parcel, 125 Victory Highway, and is owned by High Victory Holdings. The tax map ID is 280.00-1-17.1. The parcel is 9.17 acres and is located on the south side of Victory Highway. Highway just west of I-86 Exit 43 in the Town of Erwin. There is a gravel parking area on the site as well as a drainage swale. The south lot line follows an existing rail bed.

The site is vacant. There was once a building on-site used as part of a bridge construction project. Non-ignitable wastes were removed from the structure at one time. Aside from this incident, no other known reports have been issued on this site. However, conditions across the road at the former Painted Post Car Mart as well as known environmental records are located at higher elevation and could drain to the site. As a result Strategic Site B should be the subject of a Phase II ESA to determine what, if any, contaminants are present, how serious the contamination is and to develop a remediation plan.

Strategic Site B

Strategic Site C

A Phase I ESA was not performed on Strategic Site C.

Strategic Site C was selected because of its potential to become a catalytic development that will transform the economy of Painted Post. The site, with a street address of 450 West Water Street, is owned by the Village of Painted Post. The tax map ID numbers are 298.12-01-018 and 299.13-01-74. The parcel is 57.4 acres. The site is vacant.

Strategic Site C is the site of the former Ingersoll Rand Foundry. Because of the wealth of information that is known about the site and its environmental status, a modified examination of the site was conducted to gather a synopsis of this information consistent with that done for the ESAs on the other sites.

The foundry site is an inactive waste disposal site. The foundry was used to produce gray iron castings for the company's compressor plant. The foundry was shut down in 1985 and an environmental evaluation and cleanup done by Ingersoll Rand as part of the closure.

As part of the cleanup process, the site was declared by the NYS Department of Environmental Conservation to be a Class 4 Inactive Waste Disposal Site. This classification indicates that the site is properly closed but requires continuous management. Deed restrictions on the site placed by Dresser Rand, successor to Ingersoll Rand, prohibit most uses including residential, retail, commercial, parks, schools, etc. The site remains feasible for an industrial reuse.

A portion of the site, 11.48 acres, is being redeveloped as a rail siding for a transloading facility the village will use to ship water to Pennsylvania for use in the gas industry. For that project, enhanced storm water management capacity and increased water service will be developed.

Any developer of Strategic Site C will need to be aware of, and work within, the framework for development set forth in the deed restrictions. No additional remediation or environmental studies are deemed necessary at this time, but they may become necessary at the time of development, when a specific use has been identified.

Strategic Site C

Strategic Site D

A Phase I ESA was performed on Strategic Site D by Hunt EAS.

Strategic Site D was selected because it has the potential to become a centerpiece redevelopment in the BOA. The building on the site, the former Corning School District Offices, was once the Painted Post High School. Strategic Site D is located at 165Charles St. in the Village of Painted Post. The tax map ID number is 299.13-1-026.The parcel and building are owned by the Corning Painted Post School District

Strategic Site D is 4.3 acres and consists of the original 1800s school building interconnected with several more recently constructed additions which vary from one to three stories. There are three asphalt parking lots comprising about 40% of the parcel. About 40% of the parcel is mowed lawn. There is one environmental report on the site involving materials stored in barrels or drums. Two underground tanks on site were removed by December 2010. There are no k nown environmental liens, deed restrictions or use limitations on this site.

Hunt EAS performed a building condition survey and made multiple recommendations for safety and accessibility renovations and to allow the building to meet current standards and needs. A structural evaluation of the building may be warranted and the building should be evaluated for the presence of asbestos insulation – asbestos floor tile is present.

The building, interior and exterior, and the grounds have some serious signs of deterioration. The recommended residential reuse for this building would entail and should require a total rehabilitation.

Strategic Site D

Strategic Site E

A Phase I ESA was performed on Strategic Site E by Hunt EAS.

Strategic Site E was selected because it is adjacent to Strategic Site F and together they present the potential to create a big enough development opportunity as to be catalytic. Strategic Site E is a high visibility site with known and suspected environmental challenges. The site is comprised of multiple parcels and is located in the Village of Painted Post and the Village of Riverside. The tax IDs are 299.13-05-023.00, 299.13-05-021.00, 299.18-01-011.00, 299.18-01-012.00 and 299.18-01-014.00. It is located on East High Street between Hart and Bronson streets. It is approximately 2.68 acres. Strategic Site E is owned by High Victory Holdings. The Painted Post portion of the property is a vacant gravel lot; an auto parts store located on the site burned to the ground many years ago and all evidence of the building was removed. It has been vacant since. The Riverside portion of the site is occupied by Crystal Cleaners.

Strategic Site E is located in a densely developed area and no on-site environmental hazards were noted during Hunt's on-site observation. Among its former uses is as a used car maRoute The site is adjacent to or near five sites with environmental records and four listed sites. The listed sites are at a higher elevation of Strategic Site E, so they could have an impact on the site. Strategic Site E should be the subject of a Phase II ESA to determine what, if any, contaminants are present, how serious the contamination is and to develop a remediation plan. Hunt recommends a series of rehabilitative measures to bring the Crystal Cleaners building to ADA accessibility, and to meet current standards and needs. However, a better and more likely future use of the site would probably require demolition of the building.

Strategic Site E

Strategic Site F

A Phase I ESA was performed on Strategic Site E by Hunt EAS.

Strategic Site F was selected because it is adjacent to Strategic Site E and together they present the potential to create a big enough development opportunity as to be catalytic. Strategic Site F is a high visibility site with known and suspected environmental challenges. The 2.78-acre site is comprised of three concrete block storage buildings, a gravel parking area and some lawn all contained by a ch ain link fence and is located between Bronson and First streets in the Village of Painted Post on the Chemung Street Extension. The tax parcel ID number is 299.13-05-39 and the property belongs to Dresser Rand.

Strategic Site E is located in a densely developed area and no on-site environmental hazards were noted during Hunt's on-site observation. The site is adjacent to or near five sites with environmental records and five sites within one quarter-mile of Strategic Site F are listed. The listed sites are at a higher elevation of Strategic Site F, so they could have an impact on the site. Strategic Site E should be the subject of a Phase II ESA to determine what, if any, contaminants are present, how serious the contamination is and to develop a remediation plan. Hunt recommends a series of rehabilitative measures for the three concrete block buildings including new roofs for each of them at substantial cost. However, a better and more likely future use of the site would require demolition of the buildings.

Strategic Site F

Strategic Site G

A Phase I ESA was performed on Strategic Site G by Hunt EAS.

Strategic Site G was selected because of its proximity to an I-86 exit and the potential this highly visible site has to be transformed from dreary and underutilized Riverside Plaza to an attractive and productive commercial service center for local residents and travelers through. The entire site is 7.75 acres, but the strategic portion of the parcel is not the built portion of the site but the area that remains undeveloped, especially on the east side where a Ponderosa restaurant and a gas station were once located. The tax ID is 299.18-1-049 and it is located on Pulteney Street in the Village of Riverside.
he owner of Riverside Plaza, Pulteney Plaza Corp., is motivated and interested in upgrading the property and expanding business there. It has recently purchased the verge fronting the property from NYS DOT.

Existing outparcels adjacent to the site include tourism and business traveler amenities including lodging and food establishments. More of these kinds of services would add to and diversify the mix of tourist and traveler amenities with high visibility from Route I-86.

There were no spills or contaminants visible when Hunt did its site inspection. However, numerous environmental records were noted west and northwest of the site from which water would drain toward this site. The records include underground tanks that have been removed, a spill at a nearby gas station and known contaminants at the nearby Foundry site – Strategic Site C. Additionally, numerous sites with environmental records are located nearby and at higher elevation including a former dry cleaning establishment, gas stations and auto repair shop. Strategic Site G should be the subject of a Phase II ESA to determine what, if any, contaminants are present, how serious the contamination is and to develop a remediation plan if needed.

Strategic Site G

Strategic Site H

A Phase I ESA was not performed on Strategic Site H.

Strategic Site H is a collection of mostly residential properties just west of and over the tracks form Strategic Site C. It has become known as the "Bridge Landing" as it is the west end of the proposed access bridge for Strategic Site C.

As the bridge construction nears reality, an acquisition plan and site assessments should take place. To facilitate the bridge, Phase I and II assessments for the Strategic Site H group should be part of the BOA Step 3.

Strategic Site H

STRATEGIC SITE C – ACCESS FEASIBILITY STUDY

Strategic Site C, the former Ingersoll-Rand Foundry site, consists of approximately 45 acres within the Village of Painted Post and is the single largest underutilized area identified within the Erwin/Painted Post/Riverside Brownfield Opportunity Area. This area is bounded by the Bath and Hammondsport Railroad to the east, a flood control project at Hodgmans Creek to the north, Interstate 86 to the west and Hodgman Park and residential development to the south. The former foundry site included a foundry building which was approximately 287,000 square feet which operated from 1920 through 1985, to produce gray iron castings principally for the Ingersoll Rand compressor plant. The operations consisted of pattern construction, sand mold lines, melt furnaces, castings, shakeout, clearing and pattern storage. After the foundry was idled in 1985, an environmental evaluation and cleanup was conducted by the Ingersoll-Rand Company as part of its facility closure activity. Government agencies and the Ingersoll-Rand Company conducted investigations at the site and according to a report prepared by NYSDEC (Division of Hazardous Waste Remediation) dated March 1994, the Record of Decision presented a selected remediation for the foundry inactive waste disposal site. T he selected remedial action plan at the premises was the recording of a deed restriction identifying the presence of certain environmental conditions at the premises.

The Dresser-Rand Company (successor to the Ingersoll-Rand Company) decided to impose

Existing Site C

conditions, covenants, and restrictions on t he property for the purpose of promoting, benefitting, preserving and protecting the health and safety of the public and environment. The NYS Department of Health concurred with the selected remedy as b eing protective of human health. The following was also recorded in the NYSDEC 1994 Record of Decision: As part of the remedy, the site was to be re-classified to Class 4 in the NYS Registry of Inactive Waste Disposal Sites, indicating the site was properly closed but required continuous management.

The construction of a railroad siding which will be parallel and adjacent to the existing Bath and Hammondsport Railroad and which will run for nearly the entire length of Site C, is currently under construction. The purpose of this siding is to load tanker cars with water for use in the gas exploration industry in northern Pennsylvania. This siding will use nearly 12 acres of Site C, leaving approximately 33 acres available for future development. This study addresses access to those remaining 33 acres of Site C.

The sole highway access to Site C is from Hamilton Street to West Water Street, into the southern portion of the site. This route traverses the Painted Post village center, makes a right angle turn and then passes through a residential area alongside Hodgman Park; as a result, it may not be suitable for a large amount of truck traffic. This access was a previous source of contention within the community, of which many residents were opposed to its use as the primary access for a new development. It was determined that a second access route should be developed to accommodate a variety of proposed land uses for this site, particularly those uses resulting in a significant amount of heavy truck traffic. This determination was supported, previously, within the Interstate 86/99 Economic Development Blueprint, which recommended the reconnection of West Water Street through Site C as a means to stimulate redevelopment.

North Hamilton Street at W. Water St.

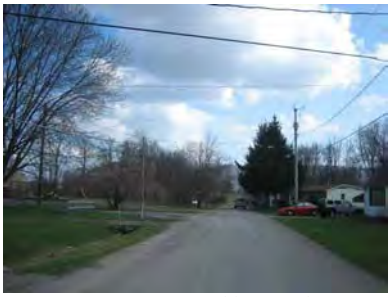
W. Water St. at North Hamilton Street

W. Water St. at Charles St

Several alternatives were developed for providing this second access route. These alternatives are described below and shown on the attached map. (Note that there is one "West Water Street" north of Site C and a second "West Water Street" south of Site C, both of which are currently dead end streets. To avoid confusion, they are referred to as West Water Street (north) and West Water Street (south).) The six alternatives were:

- **Alternative 1**: Access from Route 415 s outheast of its interchange with I-86 using West Water Street (north). This would require construction of a new bridge over Hodgmans Creek, the B&H Railroad and the flood control dike south of Hodgmans Creek to a touchdown point in the northerly section of Site C.

W. Water St. at Rte 415


W. Water St. Looking South

Approx. Bridge Alignment

Touchdown Area Site C

- **Alternative 2**: Access from Route 415 and West Water Street (north), also requiring a new (but lower-profile) bridge constructed only over Hodgmans Creek and the flood control dike south of the creek. The proposed road would then connect with High Street. Access to Site C would be via a second road with an at-grade railroad crossing south of the dike, which would intersect with the West Water Street (north)/High Street connection just south of the dike.

Approx. Bridge Alignment

Tie in with High St.

- **Alternative 3**: Access from Route 415 south of the bridge carrying Route 415 over Hodgmans Creek. A new roadway would be constructed from Route 415, parallel to Hodgmans Creek near Corning-Painted Post West High School. This road would utilize an at-grade railroad crossing south of the dike to access Site C.

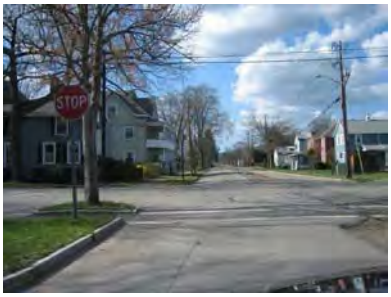
Proposed Intersection at Rte 415

Alignment Along Creek

At-Grade Rail Crossing Location

- **Alternative 4**: A new road constructed parallel to Chemung Street from Hamilton Street to the southeast section of Site C.

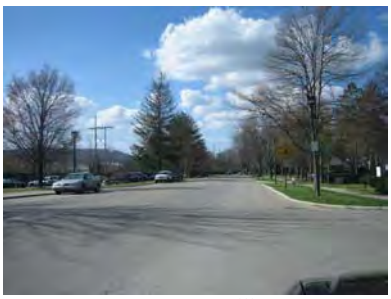
Chemung St. at North Hamilton Street



Chemung St. at Steuben St.

Chemung St. at Charles St.

- **Alternative 5**: A new road constructed from the southern portion of Site C, parallel to West Water Street (south). It would tie into existing West Water Street (south) near the Village Square and continue to Hamilton Street.


W. Water St. near Village Square

W. Water St. at Steuben St.

W. Water St. at Site C

- **Alternative 6**: A new road constructed from the southwest section of Site C, which would run along the western and southern edges of Hodgman Park and then tie into West Water Street (south) at the Village Square and continue to Hamilton Street.

Hodgman Park Near Site C

Existing Hodgman Park Road

Park Road at W. Water St.

A review of each alternative was completed to determine which would meet the project objective of providing a viable second means of access to Site C while still being constructible without any significant legal, environmental, cultural or other hurdles. The outcomes of this review were as follows:

- **Alternative 1** would provide direct access into Site C and be designed to meet the hydraulic requirements for crossing over the Hodgmans Creek flood control project, thereby enabling New York State Department of Environmental Conservation (DEC) and the US Army Corps of Engineers (ACOE) to issue the permits required for construction. Vertical and horizontal clearances required by the railroad should also be achievable. West Water Street (north) would have to be reconstructed, requiring the acquisition of additional right-of-way, including two houses. This alternative meets the project objective and appears to be feasible for construction without significant issues so the analysis will be carried forward.

Figure 11: View from Interstate 86 of Proposed West Water Street Bridge

Figure 12: Aerial View of Proposed West Water Street Bridge

- **Alternative 2** would provide a second access into Site C. It would not be as direct as Alternative 1, since an at-grade railroad crossing would be utilized and an intersection between the access road and the West Water Street (north)/High Street Connection would be introduced. As with Alternative 1, the bridge would be designed to meet hydraulic requirements for the crossing of the flood control project (in order to obtain permits from DEC and the ACOE). West Water Street (north) would require reconstruction and the acquisition of right-of-way would be required along both West Water Street and High Street including several homes.

Affected Houses, Alternative 2

Regarding the proposed rail crossing, a major concern exists in that if a new at-grade railroad crossing is approved for construction with public funds, one expected condition of such approval is a requirement that two other existing at-grade crossings be removed. We know of no existing crossings that could be sacrificed to justify the construction of this proposed new crossing. Therefore, it is likely that the at-grade crossing and the access road that would utilize it would not be feasible for this or any publicly-funded project. If a developer is interested in pursuing this option in the future, he or she would need to negotiate with the railroad regarding the private construction of the at-grade crossing and access road. A successful outcome for such negotiations cannot be guaranteed. For this reason, this alternative was dropped from consideration.

- **Alternative 3** avoids the issue of the flood control project along Hodgmans Creek but retains the same concerns regarding construction of an at-grade railroad crossing as Alternative 2. Construction of an acceptable intersection between Route 415 and the access road would also bring about several issues. First, a significant difference in elevation exists between Route 415 and the area south of the dike where the access road would be constructed. Second, an intersection between the proposed access road and Route 415 could not be constructed very close to the Route 415 bridge over Hodgmans Creek because the acute angle between Route 415 and the proposed access road could not be negotiated by trucks arriving from I-86 or other points north.

Elevation Difference at Rte 415 Bridge

- This would force the intersection farther to the south and closer to the driveway into Corning-Painted Post West High School. The combination of horizontal geometry and elevation differences may actually force the access road to merge with the driveway into school or to cause the driveway to be relocated farther to the south. The access road would also cause the displacement of some of the on-campus roadways and parking at the school. Due to the concerns over the impacts to the school and the need for an at-grade railroad crossing, this alternative was dropped from consideration.

School Parking and Drive

- **Alternative 4** would require trucks to pass through the Painted Post village center, similar to the existing access from West Water Street (south). Much of the right-of-way needed for this alignment would need to be acquired from the railroad, which may not be possible as the line is active. In addition, a rail siding is planned for construction parallel to the existing line in the near future. This siding will run nearly the full length of Site C, forcing the access road to shift to the west into a residential area as it approaches Site C from the south. For these reasons, this alternative was dropped from consideration.

Affected Houses, Alternative 4

- **Alternative 5** does not provide a second access into Site C; rather, it modifies the existing access, bringing traffic through the Painted Post village center and taking the right angle turn from North Hamilton Street onto West Water Street (south). As this alternative does not meet the project objective of a second access route, it was dropped from consideration.

- **Alternative 6** uses a portion of the existing access from North Hamilton Street to West Water Street (south), including the right angle turn, so it is not a fully separate access route. It then introduces another intersection with the turn into the Hodgman Park area and the route would continue along the perimeter of the park into the southwest corner of Site C. Construction of this route would require the acquisition of park lands which were created with the assistance of federal funding. Justification of this acquisition would be very difficult since another feasible option exists.

W. Water St. at Hodgman Park

Even if it was determined that this alternative is the preferred option, the actual acquisition process for the park land would be a very lengthy procedure with no guarantee of a successful outcome. This alternative was dropped from consideration due to the need to acquire this park land.

In summary, Alternative 1, which calls for access to the north end of Site C from Route 415 and West Water Street (north) with a bridge over the Hodgmans Creek flood control project and the B&H railroad is the only alternative for a second access route to Site C that will continue to be considered. Design criteria for this access road were obtained from the NYSDOT Highway Design Manual and Bridge Manual using a design speed of 30 miles per hour and a roadway classification of local urban street for an industrial area. The recommended design parameters are as follows:

Travel lane width	12’
Shoulder width	5’ minimum (no parking lane and no accommodations for breakdowns)
Grade	8% maximum
Stopping sight distance	200’ minimum
Curve radius	250’ minimum
Superelevation	4% maximum
Travel lane cross slope	1.5% minimum, 2% maximum
Bridge width	Highway width
Bridge Structural Capacity	HL-93

In addition to the above design criteria, the required vertical clearance for the railroad was assumed to be 22’ based on the existing clearance over the same railroad under the I-86 bridge located just north of the project site. It was also assumed that the proposed bridge would need to minimize any impact to the Hodgmans Creek flood plain and pass over the top of the dike but may have an abutment encroaching into the landward side of the dike.

A roadway alignment and profile meeting all of the above criteria was then developed as shown on the attached plan and elevation views. The resulting bridge is expected to be a three span continuous, steel multigirder structure with a span arrangement of 90’- 120’- 90’ with the center span crossing over the main creek channel and railroad. The northerly span will cross the flood plain north of the channel and help to minimize the placement of fill material within that area. The southerly span will cross over the dike. The piers and abutments of the bridge will be supported on pile foundations to protect them from scour and to prevent settlement from occurring. The roadway width of the bridge will be 34’ – 0” and the barriers on either side of the bridge may be either steel railing on curbs or concrete barrier in order to control the surface drainage on the bridge and direct it away from the railroad. No sidewalks or bicycle lanes are planned to be carried across the bridge. Lighting is considered optional and is not currently included in the estimate.

Hodgmans Creek, in the vicinity of the proposed crossing, was determined to be a Class "C" stream by NYSDEC so it is not a fishing stream and does not have any in-stream restriction dates. This portion of the stream however, is within a U.S. Army Corps of Engineers Flood Control Project which is maintained by NYSDEC. As such, an Article 16 Permit for Use of Flood Control Lands will need to be obtained from NYSDEC with the possibility of needing the USACOE signing off on it. The proposed bridge will not require any relocation of the stream and the proposed piers and abutments will be located outside of the stream bed so the only potential in-stream work may be the placement of some heavy stone fill scour protection for the pier areas. This work will not impact the water surface elevations or the water quality.

Corps of Engineers Flood Control Dike

Wetlands appear to be present in the vicinity of this project but the area does not appear to be large enough to be regulated by NYSDEC. These wetlands will however need to be located and a determination will need to be made as to whether the proposed construction will have an impact on them. In addition to the above noted permit for Use of Flood Control Lands, a Water Quality Certification will need to be obtained from NYSDEC and a Section 404 Permit will need to be obtained from the USACOE to construct this bridge. The Section 404 Permit will address wetlands which are determined to be in the project area.

Information provided by the NYSDEC Natural Heritage Program Office has indicated that there are rare plants and animals in the hills above the Cohocton and Chemung River valleys and there are rare freshwater mussels downstream in the Chemung River. It is possible that work at the project site will not have a significant impact on these populations but a more thorough assessment will need to be done when a formal project application is submitted for construction of this access bridge.

Based on a review of the NEPA (National Environmental Policy Act) checklist, this project does not meet the requirements for a Class II project (which is classified as a Categorical Exclusion) but since it is not expected to have a significant effect on the environment, it meets the criteria for a Class III project. As such, it will require the preparation of an Environmental Assessment if Federal Aid is used to fund construction. Similarly, if the project is funded with State money, it would be classified as a SEQR (State Environmental Quality Review Act) Non-Type II project, also requiring the completion of an Environmental Assessment.

20' Pavement on West Water St.

With the design criteria calling for two 12' lanes with 5' shoulders as a m inimum, the total required roadway width will be 34'. West Water Street (north) currently has only about 20' of pavement width and the structural capacity of that pavement is probably insufficient to handle heavy traffic. That entire section of roadway will therefore need to be reconstructed. The proposed roadway is expected to be constructed with a 12" gravel subbase, 6" of asphalt base and a total of 2 ½" of asphalt binder and top courses.

The estimated construction cost for this alternative including the bridge, the embankments required to reach the elevations necessary for the rail crossing, the reconstruction of West Water Street (north) to the intersection with Route 415 and paving of the roadway to the point where the profile of the proposed roadway touches down to existing ground south of the proposed bridge is nearly $5,550,000. As may be seen on the Engineer's Estimate on the following sheet, the bridge alone accounts for $3,160,000 of this total. The placement of embankment material needed to construct the approaches to the bridge to reach the height needed to cross over the railroad is estimated to be $620,000. The removal of the existing West Water Street (north), removal of top soil under the new roadway areas, construction of a gravel roadway subbase and placement of the new asphalt roadway from Route 415 to the touchdown point south of the bridge, which is nearly 0.5 miles south of Route 415, totals about $660,000. Other items of work listed under contingencies in the estimate, include guide railing, signs, landscaping, drainage, pavement striping, engineer's office and other miscellaneous construction needs. R emediation has previously been completed for hazardous wastes found at the former foundry site within Site C but excavation activities during future construction may encounter additional contaminated materials which would add to construction costs.

Table 20: Engineer's Estimate, Alternative 1

Item Description	Unit	Quantity	Unit Price	Cost
Complete Bridge	LS	1	$3,160,000.00	$3,160,000.00
Unclassified Excavation and Disposal	CY	6970	$15.00	$104,550.00
Embankment in Place	CY	62000	$10.00	$620,000.00
Subbase Course, Optional Type	CY	3520	$45.00	$158,400.00
Hot Mix Asphalt - Type 1 Base Course	TON	2784	$95.00	$264,480.00
Hot Mix Asphalt - Type 3 Binder Course	TON	686	$100.00	$68,600.00
Hot Mix Asphalt - Type 7 F3 Top Course	TON	458	$110.00	$50,380.00
Tack Coat	GAL	1019	$10.00	$10,190.00
Sawcutting Asphalt Pavement	LF	100	$7.00	$700.00
Survey and Stakeout	LS	NEC	$5,000.00	$5,000.00
Contingencies				$888,460.00
	Subtotal			$5,330,760.00
Mobilization (4%)	LS	NEC		$213,230.40
	TOTAL			**$5,543,990**

The cost of right-of-way for this access road is not included in the above Engineer's Estimate. These costs will include the cost of the property that the new portion of the roadway and its embankments will be constructed upon and the additional width of property needed to construct the widened and realigned West Water Street (north). It is expected that this right-of-way need will include the acquisition of two houses located on the west side of West Water Street (north) at the southerly end of the existing road. Additional easements or acquisitions will also be necessary for drainage purposes and along the southern portion of West Water Street (north) to allow for the proposed highway embankments to be blended into the existing ground or parking lot elevations.

Affected Houses – W. Water St.

Due to the fact that the proposed access roadway is located in both the Town of Erwin and the Village of Painted Post, it is expected that both entities will be involved in the right-of-way acquisition process, each within their own jurisdiction. Similarly, ownership of the road may be based on the border between the Town and the Village. These municipalities may also negotiate other scenarios for the needed acquisition and ownership if they so choose.

Ownership and maintenance responsibility of the bridge may also be the subject of negotiations. Typically, for roadways under local jurisdiction, a bridge over a railroad has split responsibilities with the railroad being responsible for the framework of the bridge and its abutments and the municipality responsible for the roadway over the bridge and its approaches. With a three span bridge having only one span over a railroad it is not unusual for the railroad to have responsibility for only the span crossing over the rails and for the supporting piers. With the remaining responsible parties being a Village and a Town, the Town quite often takes the responsibility of the portions of the bridge outside of the railroad's jurisdiction, especially if the Village is not heavily populated. One additional scenario would be to have an agreement in place whereby the County of Steuben assumes responsibility for the bridge outside of those areas under railroad responsibility.

Please review the following Map, **Strategic Site C - Potential Access Routes**, for a diagram and point by point evaluation of each of the six alternatives.

Option	Description	Access Location	Lead Requirement	At-Grade Rail Crossing Required	Private Property Acquisition Required	Park Alienation	Potential for resident conflict 1 (low) to 3 (high)	Flow of access 1 (low) to 3 (high)	Potential conflict with Painted Post water project	Additional Factors
1	Bridge over railroad line and water, landing on Water Street	North West	300' for bridge	No	Potential	No	3	3	No	• Requires significant space for landing bridge on each side
2	At-grade railroad crossing, left turn, bridge over water, landing on Water Street	North West	50' for rail crossing	Yes	Yes	No	3	1	No	• At-grade crossing would have to be negotiated or privately built
3	At-grade railroad crossing, access road on northwest school property, ramp to Victory Highway	North West	50' for rail crossing	Yes	Potential	No	1	2	No	• Significant conflict with school property • Ramp to Victory Highway required
4	New road parallel to Chemung Street to N. Hamilton St., with buffer from residential	East	N/A	Yes	No	No	3	2	Yes	• Hamilton St. intersection needs improvement
5	Redeveloped Water Street Access to N. Hamilton Street	East	N/A	No	No	Yes	3	3	No	• Highest level of resident disturbance
6	New access road around south side of Hodgman Park, connecting to Water Street at Village Square, to N. Hamilton St.	South East	N/A	No	No	Yes	1	2	No	• Potential requires highest among of park acquisition

Key

- BOA Boundary
- Strategic Site C
- Highways
- interchanges
- Wetlands_Hydric_Soils
- flood_IN
- 15pct_slope

Strategic Site C Access Alternatives

Town of Erwin

Village of Painted P

0 500 1,000 2,000 Feet

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Erwin • Painted Post • Riverside

BROWNFIELD OPPORTUNITY AREA

Strategic Site C Potential Access Routes

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LAND OWNERSHIP PATTERNS

The majority of land in the surrounding communities is privately owned. Many of the largest parcels in the communities are publicly owned and used to provide valuable public services (transportation, public education and other municipal services). The historical distribution of land in these communities follows the classic colonial pattern where large tracts were slowly subdivided over the many generations that this area has been occupied.

The BOA is situated across three municipalities (host communities). A cross the host communities 2,575 acres (5%) of land is designated as roadways. Wi thin the BOA however, the land distribution pattern changes. Road right-of-ways consume 156 acres of land within the BOA. This amounts to roughly 30% of the total land area. This relationship is similar for community facilities (such as schools, fire, and municipal parking) that are centrally located in the Brownfield Opportunity Area (276 acres of the BOA is publicly owned). This skews the land distribution pattern slightly toward public landowners (23%) for the BOA versus the three host communities where only 5% of the total land is publicly owned. Private owners control 218 acres of the BOA or 44%.

Table 22: Brownfield, Underutilized & Vacant Sites by Ownership

		Brownfield	Under-utilized	Vacant	Unselected	Total
Public	Total Acres	3.39 acres	56.3 acres	1.1 acres	215.83 acres	276.6acres
	Parcels	3 parcel	4 parcels	3 parcel	42 parcels	52 parcels
	Avg. parcel size	1.13	14.07	0.36	5.1	20.66
Private	Total Acres	20.43 acres	31.21 acres	12.42 acres	153.98 acres	218 acres
	Parcels	19 parcels	37 parcels	8 parcels	421 parcels	485 parcels
	Avg. parcel size	1.07	0.84	1.55	0.036	3.82
Total	Total Acres	23.82 acres	87.51 acres	13.52 acres	369.81 acres	494.6acres
	Parcels	22 parcels	41 parcels	11 parcels	463 parcels	537 parcels
	Avg. parcel size	1.08	2.13	1.22	0.8	0.92

Source: Steuben County, Southern Tier Central

Table 21: Land Ownership by Municipality

		Erwin	Painted Post	Riverside	Total
Public	Acres	1,108.1	146.2	45.9	1,300.2
	Parcels	90.0	21.0	16.0	127.0
	Avg. Parcel Size	12.3	6.9	2.8	10.2
Private	Acres	22,216.2	366.1	35.8	22,618.1
	Parcels	2,421.0	314.0	160.0	2,895.0
	Avg. Parcel Size	9.2	1.2	0.2	7.8

Source: Steuben County, Southern Tier Central

Erwin / Painted Post / Riverside

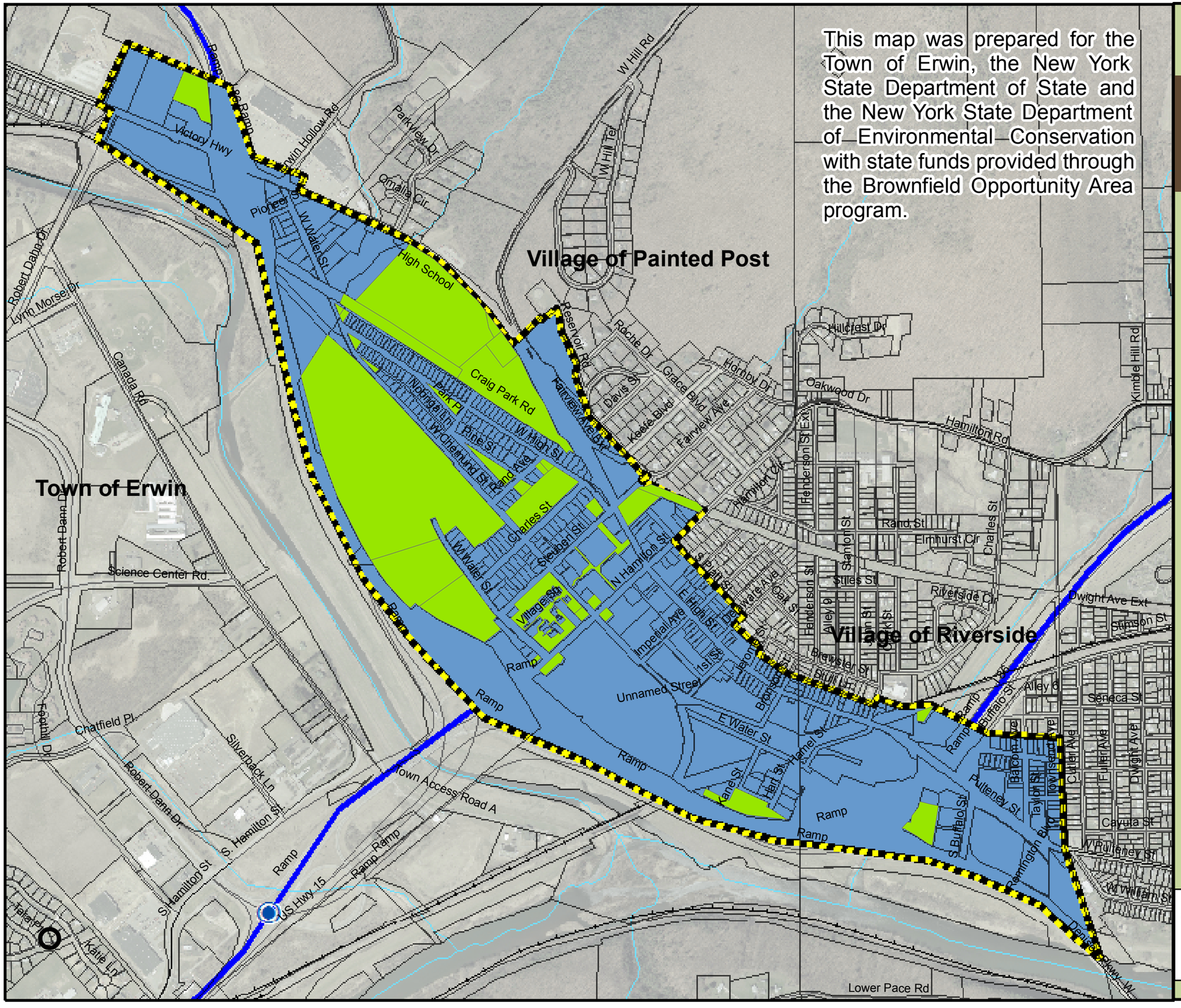
Brownfield Opportunity Area

2012

Figure 14

Property Ownership

This map was prepared for the Town of Erwin, the New York State Department of State and the New York State Department of Environmental Conservation with state funds provided through the Brownfield Opportunity Area program.



BOA Boundary

Interstate Highways

interchanges

Public Property

0 625 1,250 2,500 Feet

Southern Tier Central
REGIONAL PLANNING & DEVELOPMENT BOARD

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www.pjscompany.com
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PARKS & OPEN SPACE

The Town of Erwin, Village of Painted Post, and Village of Riverside BOA is a well developed mixed-use area, complete with parks, community centers, and recreational opportunities. Through the BOA program, the existing facilities may become more attractive to local residents. The existing facilities will be updated to meet changing levels of activity and projected types of uses.

There are three distinct parks in Painted Post: Craig Park, Hodgman Park, and the Painted Post Trail. Craig Park and the Painted Post Trail are very well integrated into the community. Hodgman park is somewhat isolated from village residents by W. Water Street and the W. Water Street Site. Hodgman Park is rich in amenities and has excellent parking, but additional community connections could increase the usage of this park.

Painted Post Multi-Use Path

Table 23: Parks, Recreation & Open Space

Land use /Acres	Erwin	Painted Post	Riverside	Total
Recreation & Entertainment	0	7.6	0	**7.6**
Community Services	0	34.9	0	**34.9**
Conservation/Parks	0	18.5	0	**18.5**
BOA Total	**93.3**	**309.9**	**90**	**493.4**

Source: Steuben County, Southern Tier Central

The Village of Riverside has two connected park areas, the Painted Post Trail and the Edward P. Hanshaw Memorial Park. These two parks occupy the far north side of the Village, and are easily accessed by most residents in the town.

The Village of Painted Post contains most of the 18.5 acres of parks in the BOA (including Hodgman Park, the Erwin Museum, and hiking/biking trail. The table below lists recreational land uses and their distribution throughout the BOA.

Agricultural Lands, Locally, State, Federally Designated Resources and Open Space Areas.

Because the BOA is urbanized, there is no significant wildlife habitat or agricultural land within its borders. However, a landscaped walking/hiking trail on a former railroad right-of-way is a "green corridor" for public enjoyment. A number of municipal parks also create a pattern of open space. The Erwin Hollow State Forest is to the north of the BOA in the Town of Erwin as part of the steep, wooded hillsides which flank the BOA to the north and south.

Hodgman Park

Erwin / Painted Post / Riverside

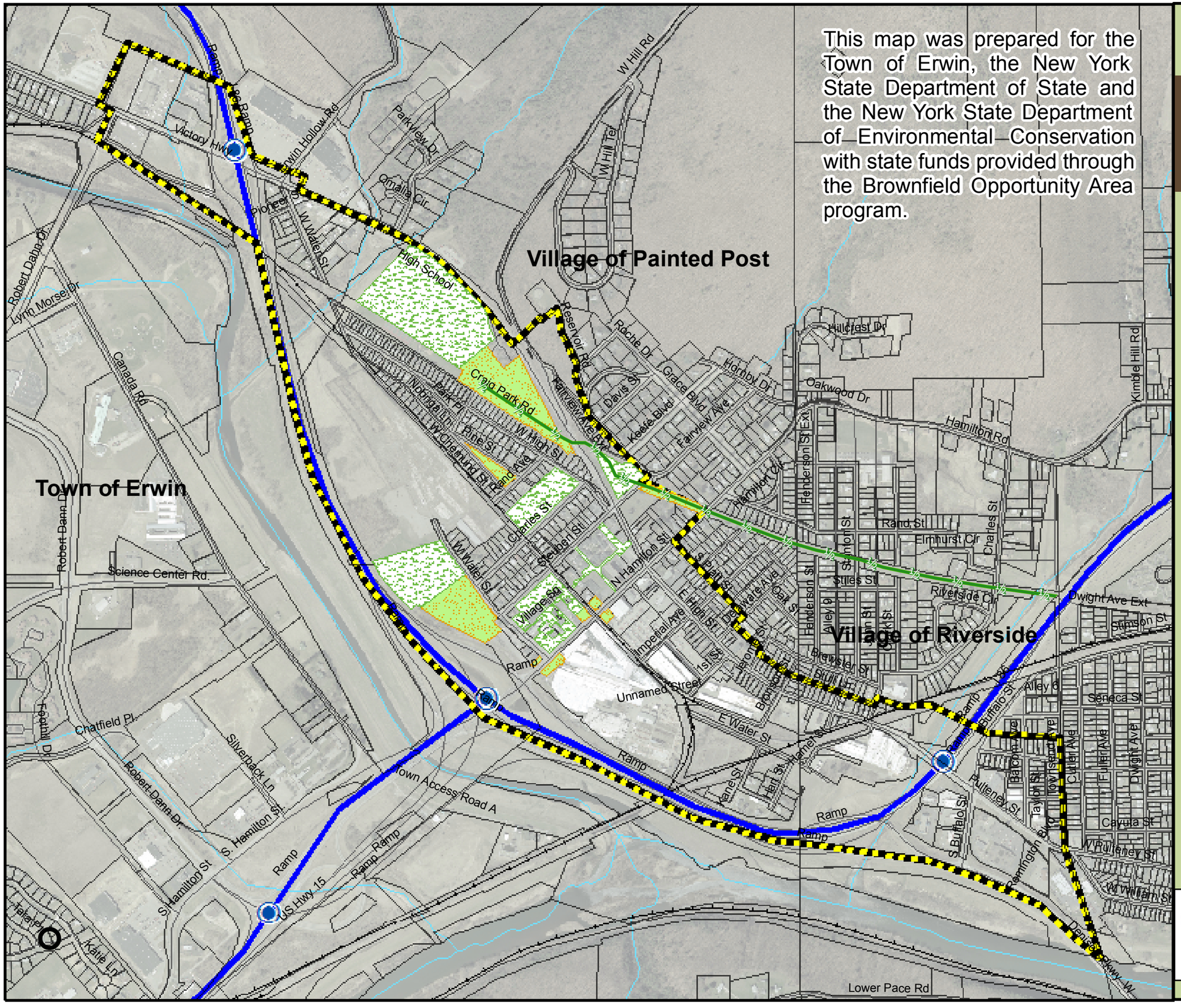
Brownfield Opportunity Area

2012

Figure 15

Parks, Recreation & Open Space

This map was prepared for the Town of Erwin, the New York State Department of State and the New York State Department of Environmental Conservation with state funds provided through the Brownfield Opportunity Area program.



BOA Boundary

Interstate Highways

interchanges

Dedicated Public Parkland

Public Open Spaces

Painted Post Trail

0 625 1,250 2,500 Feet

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BUILDING INVENTORY

The BOA project study area is composed of more than 500 parcels and buildings. Structures date from many time periods, including back to the nineteenth century to today. The following is an inventory of what have been determined to be the most significant structures affecting the E/PP/R BOA project area.

Bernie Transportation building
124 Victory Highway

The Bernie Transportation building known as BOA parcel #2, is located at 124 Victory Highway in the Town of Erwin. This site is very well located, only 1,000 feet from I-86 exit 43. The existing building is in relatively good condition, and is a single story 37,359 s quare foot facility, with high bays and high ceilings. The building was originally constructed and used as a C ar Mart and RV sales facility. The building and parts of the site were flooded in June 1972 (flooding from Hurricane Agnes). The property is owned by T&K Realty; Bernie Transportation (a local school bus garage) has leased the site for several years.

Water Project Rail Siding
450 W. Water Street

West Water Street Site, BOA parcel #14, is located at 450 Water Street West n the Village of Painted Post. This site is located in along interstate 86 and abutting a residential neighborhood in Painted Post. The site is almost 3,000 feet from I-86 exit 44. The parcel is a 44.79 acre lot, zoned for Industrial uses. The former Dresser Rand Foundry operated on this site for many years and was decommissioned/demolished. Construction is currently underway onsite for a 2,000 foot long, multi million dollar rail siding. The property is owned by the Village of Painted Post and approximately 25 acres on-site remain undeveloped. Construction of a bridge from W. Water Street to the north will be necessary to develop the remaining acreage as a research/light industrial park.

C/PP School Board building
165 Charles Street

The C/PP School Board building known as BOA parcel #14, is located at 165 Charles Street in the Village of Painted Post. This site is located in the center of the BOA; located in the heart of a residential neighborhood. The site is almost equidistant from I-86 exits 43, 44, and 45. The parcel is a 4.3 acre lot, zoned for Urban Center Residential. The existing building is in 'normal' condition for a building constructed in 1925. The School Board building is a three story, 19,000 square foot, former middle school. The property is owned by Corning-Painted Post School District and is currently used as the School Board office building. Due to changes in school building assignments, the current C/PP school board building is likely to become available for re-use in the next few years. Significant improvements would be necessary to facilitate constructive re-use of the building and surrounding site.

Krog Building
222 N. Hamilton

The Krog building known as BOA parcel #18, is located at 222 North Hamilton Street in the Village of Painted Post. This site is very well located, less than 2,000 feet from I-86. The parcel is almost 2 acres and is zoned Industrial. The building was constructed in 1970 by Dresser Rand and used as office space. The existing building is a two story 42,000 square foot facility, in decent condition. The building and parts of the site may have been flooded in June 1972 (from Hurricane Agnes). The property is owned by North Hamilton 208 L LC, is vacant, and available for lease.

Former Erwin Town Hall
117 West Water Street

The Former Erwin Town Hall building is not technically a BOA parcel, but this building is significant within the BOA boundary and larger community. It is located at 117 W. Water Street in the Village of Painted Post. This site is very well located, approximately 1,000 feet from I-86 exit 44. The parcel is only .18 a cres and is zoned commercial. The building was constructed in 1921 and was used as the Erwin Town hall until 2011. The Town Court continues to occupy a portion of the first floor. The existing building is a three story 23,000 square foot facility, in decent condition. The building and parts of the site may have been flooded in June 1972 (from Hurricane Agnes). The property is owned by the Town of Erwin and is available for sale.

Immaculate Heart of Mary Church
121 E. High Street

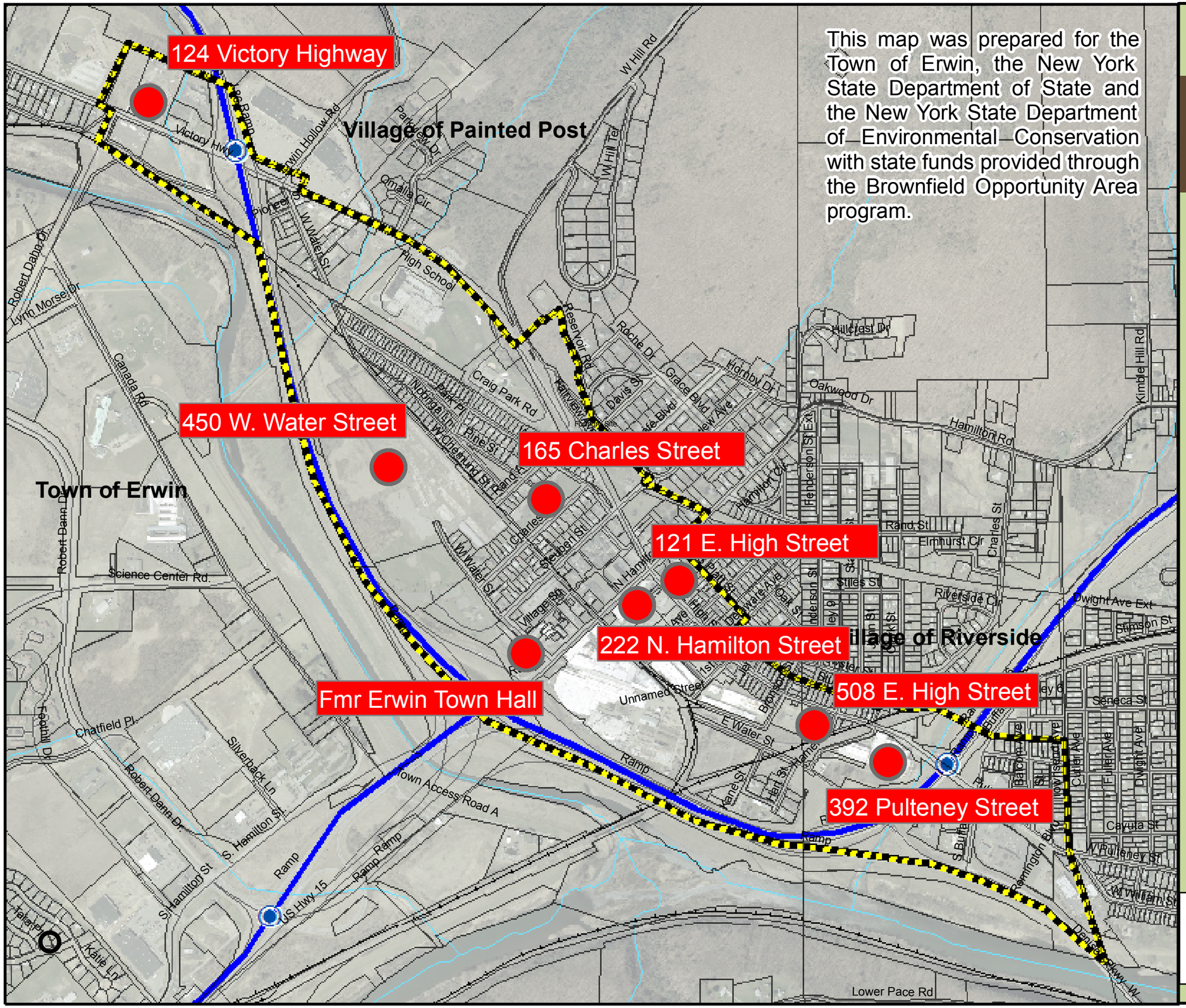
The Immaculate Heart of Mary Church known as BOA parcel #82, is located at 121 E. High Street in the Village of Painted Post. This site is located in the mixed-use center of the BOA, the site has road frontage along the well-used Route 415. The parcel is a 1 .2 acre lot, zoned for Urban Center Residential. The existing building is in 'normal' condition for an older building. The parcel has several buildings of varying heights. The parcel has approximately 2,500 square feet of church space, 19,000 sf of school space, and a 2,000 sf rectory. The property is owned by the immaculate Heart of Mary and has been used as a Catholic Church. Due to changes in the diocese, the building is likely to become available for re-use in the next few years. Significant improvements would be necessary to facilitate constructive re-use of the building and surrounding site.

Crystal Cleaners
508 East High Street

The Crystal Cleaners also known as BOA parcel #82, is located at 508 E. High Street in the Village of Riverside. This site is located in the mixed-use neighborhood of Riverside. The site has road frontage along the well-used Route 415. The parcel is a 0 .8 acre lot, zoned for Commercial use. The existing building is a 1 story structure in 'normal' condition. The parcel has approximately 7,500 square feet of 'rentable space'. The property is owned by Mr. Bennett and has been used as a dry cleaning facility.

Storflex
392 Pulteney Street

The Storflex building known as BOA parcel #55, is located at 392 Pulteney Street in the Village of Riverside. This site is very well located, less than 500 feet from I-86 exit 45. The existing building is in good condition; the building has been maintained and expanded by the owner. It is a single story 159,000 s quare foot facility, with high bays and high ceilings. The building has been used as a manufacturing facility. The property is owned by and operated by Storflex; and has been manufacturing fixtures at this location for more than 10 y ears. The building was formerly owned and used by Corning Glass Works.



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Erwin / Painted Post / Riverside

Brownfield Opportunity Area

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Figure 16

Building Inventory

BOA Boundary

Interstate Highways

interchanges

0 625 1,250 2,500 Feet

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HISTORIC OR ARCHEOLOGICALLY SIGNIFICANT AREAS

All three municipalities (Town of Erwin, Village of Painted Post, Village of Riverside) share a common historical heritage which is based on the area's unique advantages of geography, natural resources, transportation and industrious/innovative citizens. The area was an important junction for trade among Native Americans. Early settlers were attracted by opportunities to market lumber, agricultural products and manufactured items. After completion of the Chemung Canal, these communities had trade access to Seneca Lake, the Erie Canal, and points beyond. Railroads developed beginning in the 1850's and were an important stimulus to the region's population growth and business development. Manufacturing developed with the origins of Corning Incorporated in nearby Corning during the 1850's and the origins of Dresser Rand in Painted Post going back to the late 1890's. Ingersoll Rand helped to stabilize the area economy during World War II and was an important contributor to the nation's defense.

The potential presence of important artifacts under the BOA is limited. This area has been subject to regular flooding for centuries. Furthermore, the BOA has already been developed, the area has been subject to excavation and soil compression; which would negatively impact the value of any potential archeological finds.

In Painted Post, 19 sites were assessed by the state for historical/archeological significance. Of those 19 sites, 5 were eligible for inclusion on the State/National Register. Within the entire village of Painted Post, three buildings are listed in the National Register. Each building is within the BOA Boundary.

- The Delaware, Lackawanna, and Western Railroad Depot (Site 13)
- The U.S. Post Office, 135 North Hamilton Street (adjacent to Sites 18 and 81)
- First Baptist Church, 130 W. Water Street (adjacent to Sites 20 and 81).

In the Town of Erwin, 193 sites were assessed by the state for historical/archeological significance. Of those 193 sites, 5 were eligible for inclusion on the State/National Register. Within the entire Town, no buildings are listed in the National Register.

In the Village of Riverside, 37 sites were assessed by the state for historical/archeological significance. Of those 37 sites, only one was included on the State Register. That building, the William Erwin House, is within the BOA boundary.

Former D, L & W Rail Depot

Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 17

National Register of Historic Places

This map was prepared for the Town of Erwin, the New York State Department of State and the New York State Department of Environmental Conservation with state funds provided through the Brownfield Opportunity Area program.

Village of Painted Post

Town of Erwin

Delaware, Lackawanna & Western Railroad Station

First Baptist Church of Painted Post

Village of Painted Post United States Post Office

BOA Boundary

Interstate Highways

interchanges

0 625 1,250 2,500

Feet

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NATURAL RESOURCES & ENVIRONMENTAL RESOURCES

Natural Resources

An overall analysis of local ecosystems and water quality shows a high quality of life within the BOA. Environmental conditions are not deteriorating in this area. Local, state and federal efforts are underway to maintain or improve environmental conditions. The isolated instances of contamination are not causing negative heath impacts, although the contamination is impacting the vitality of the local economy.

Groundwater Use and Condition

The BOA is located entirely on the valley floor underlain by the water-rich Chemung River Aquifer. The Water Resources Map shows the extent of the confined and unconfined aquifers. Water quality is excellent and is the source of public drinking water for each of the BOA communities. The three Village of Painted Post wells are located in the BOA. Well #2 was built in 1941 and yields 500 gallons per minute (GPM). Well #3 was built in 1956 and has a rate of 726 GPM. The largest producing well, Well #4, was built in 1975 and can produce 1000 GPM. Because of concerns about groundwater contamination migrating offsite from the former foundry site, a series of monitoring wells were installed in 1991 to monitor for potential contaminants. To date, groundwater quality meets drinking water standards.

Surface Water and Tributaries, Fish and Wildlife Habitats

The Cohocton River flows along the southern boundary of the BOA joining with the Tioga River to form the Chemung River. Tributaries (including Cutler Creek, Bill Smith Creek, and Meads Creek) flow through the BOA. Both rivers are part of the Chemung Basin River Trail with boat launch sites at Kinsella Park on the Cohocton just outside the BOA and in the City of Corning. Additional river access sites are anticipated as more and more people enjoy boating or fishing on the rivers. Water quality has steadily improved over the past forty years since the adoption of strict water quality protection laws. The Painted Post Village Wastewater Treatment Plant discharges to the Chemung River and meets discharge standards. The Canisteo River is host to both the Cowanesque Dam and Alfred-Almond Dam, upstream of the BOA.

Wetlands, Floodplains and Erosion Hazard Areas

There is one NYS Designated Wetland near the BOA, it is located in Gang Mills, Town of Erwin, and is part of a natural stormwater management system. Another small wetland appears to be located within the BOA near Hodgman Park and the NYSDOT right-of-way. There are small areas of 100 year floodplain located along Meads Creek and a tributary in the western portion of the BOA. The Cohocton and Chemung floodplains are to the south of the BOA boundary.

The Tioga – Hammond Dam complex built after the 1972 flood on the Tioga River help protect Chemung Valley and the BOA. Because the slope is so flat in the BOA there are no significant erosion hazard areas.

Soils are generally good for development. However, significant portions of the areas closest to the rivers are built-up fill, so detailed soil analysis is recommended for new construction.

The BOA area has experienced a few significant floods in the last 50 years. The 1972 Agnes Flood caused widespread economic hardship throughout the region, as evidenced by the above photo. The Tioga Hammond dams provide additional protection for the region and have prevented millions of dollars of damage since they were constructed in 1979. These communities have been able to rebuild while maintaining a high quality of life.

Air Maintenance Areas

The BOA is not located within a state designated Air Maintenance Area. Air quality meets state standards.

Agricultural Lands, Locally, State, Federally Designated Resources and Open Space Areas.
Because the BOA is urbanized, there is no significant wildlife habitat or agricultural land within its borders. However, a landscaped walking/hiking trail on a former railroad right-of-way is a "green corridor" for public enjoyment. A number of municipal parks also create a pattern of open space. The Erwin Hollow State Forest is to the north of the BOA in the Town of Erwin as part of the steep, wooded hillsides which flank the BOA to the north and south.

Geology, Soils, and Topography

The BOA is primarily situated over an unconfined sand and gravel aquifer that fills the valleys where the Cohocton River meets the Chemung River. According to the Soil Survey of Steuben County published by the US Department of Agriculture in 1978, the overlying native soils make up the "Howard-Chenango-Middlebury association which are deep soils that formed in glacial outwash deposits and recent alluvium" throughout the major river corridors in Steuben County. The BOA specifically consists of Tioga silt loam (Tg) and Chenango channery silt loams (Ch) with very limited areas of Bath channery silt loam (BaD) and Bath soils (BBE) with smaller areas of Middlebury (Mp) , Scio (Sc)and Unadilla silt loam (Un). Their characteristics are as follows as excerpted from the Soils Survey:

Bath soils and Bath channery silt loam (BaD) Soil Classification #2: The Bath series consists of deep, well drained soils that formed in glacial till that was derived mainly from sandstone and siltstone…They have a very firm, brittle fragipan at a dept of 26 to 36 inches…The available water capacity is moderate above the fragipan. The water table is perched above the slowly permeable fragipan for brief periods in the spring. Suitability for small commercial buildings is limited due to steep slope.

Chenango channery silt loam, fan (Ch) Soil Classification #2: This is a gently sloping soil that formed in fan-shaped, alluvial areas where streams from the uplands poured out onto nearly level valley floors. The alluvium is mainly rounded gravelly and channery fragments…The fan slopes toward the valley floor and spreads laterally along the foot slope of the hill. It is steeper and drier near the apex and is wettest from seepage where the deposit is thinnest…The soil is easy to work with, and it warms up early in the spring…Flooding is a continuous hazard and should be considered in planning any non-farm use.

Middlebury silt loam(Mp) Soil Classification #2: This nearly level soil is in slight depressions on floodplains throughout the county. These areas are parallel to the streams and are subject to flooding mostly in the spring.

Scio (Sc) Soil Classification #2: The Scio series consists of deep, moderately well drained soils that formed in water-deposited silt and very find sand. These soils are on nearly level stream terraces...The available water capacity is high. Permeability is moderate above a depth of 40 inches and very rapid to slow below that depth. In spring and other wet periods, a temporary high water table is present. Suitability for small commercial buildings is moderate due to wetness.

Tioga silt loam (Tg) Soil Classification #1: The Tioga series consists of deep, well drained soils that formed in recent deposits of alluvium. These soils are on nearly level floodplains along major streams and tributaries throughout the county; they are subject to periodic flooding…The available water capacity is high. Permeability is moderate. In spring, season high water table is present in the substratum for brief periods. Suitability for small commercial buildings is limited due to flooding.

Unadilla (Un) Soil Classification #1: The Unadilla series consists of deep, well drained soils that formed in water-laid deposits of silt and very find sand. These soils are on nearly level terraces in the valleys along rivers and major tributaries throughout the county. There are slight concerns for the construction of small commercial buildings. Much of this soil is already in residential and commercial use.

There is a long swath of “cut and fill” soils along the rivers which is historically attributed to highway construction and debris disposal from the Agnes Flood.

Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 18

Flood Hazards, Wetlands & Steep Slopes

This map was prepared for the Town of Erwin, the New York State Department of State and the New York State Department of Environmental Conservation with state funds provided through the Brownfield Opportunity Area program.

Village of Painted Post

Town of Erwin

BOA Boundary
Interstate Highways
interchanges
Steep Slopes >15%
Wetlands
FEMA 100 Year Floodplain

0 625 1,250 2,500 Feet

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Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 19

Water Resources

Village of Painted Post

Town of Erwin

Ramp I86 Ramp Victory Hwy Erwin Hollow Rd Parkview Dr W Hill Rd W Hill Ter Omalia Cir Pioneer St W Water St High School Robert Dann Dr Lynn Morse Dr Canada Rd Reservoir Rd Roche Dr Grace Blvd Hornby Dr Hillcrest Dr Oakwood Dr Kimble Hill Rd Craig Park Rd Fairview Ave Ext Davis St Keefe Blvd Fairview Ave Park Pl Nobriga Ln Pine St W High St W Chemung St Rand Ave Hamilton Cir Fenderson St Ext Hamilton Rd Charles St Steuben St W Water St N Hamilton St S Platt St Delaware Ave Oak St Fenderson St Alley 9 Stanton St Rand St Elmhurst Cir Charles St Stiles St John St Clark St Riverside Cir Dwight Ave Ext Stimson St Village Sq Impenial Ave E High St 1st St Jerome St Bronson Pl Brewster St Stull Ln Alley 6 Seneca St Unnamed Street E Water St Hamel St Buffalo St Balcom Ave Taylor St Townsend Ave Cutler Ave Fuller Ave Dwight Ave Pulteney St Cayuta St W Pulteney St W William St Remington Blvd Kane St Hart St Town Access Road A Science Center Rd Robert Dann Dr Foothill Dr Chatfield Pl Silverback Ln S Hamilton St Tara Pl Katie Ln US Hwy 15 Lower Pace Rd Denison Pkwy W

BOA Boundary
Interstate Highways
interchanges
streams_Steuben

Aquifers

Confined
Unconfined
Wells

0 625 1,250 2,500 Feet

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Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 20

Soils

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Village of Painted Post

Village of Riverside

Town of Erwin

BOA Boundary

Interstate Highways

interchanges

0 625 1,250 2,500

Feet

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Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 21

Tree Canopy

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Village of Painted Post

Town of Erwin

Village of Riverside

Victory Hwy

Ramp

Erwin Hollow Rd

Parkview Dr

Omalia Cir

W Hill Rd

W Hill Ter

Pioneer St

W Water St

High School

Robert Dann Dr.

Lynn Morse Dr

Canada Rd

Reservoir Rd

Roche Dr

Craig Park Rd

Park Pl

Nobriga Ln

Pine St

W High St

W Chemung St

Rand Ave

Fairview Ave Ext

Davis St

Keefe Blvd

Grace Blvd

Fairview Ave

Hornby Dr

Hillcrest Dr

Oakwood Dr

Hamilton Rd

Kimble Hill Rd

Hamilton Cir

Fenderson St Ext

Rand St

Elmhurst Cir

Charles St

Stanton St

Stiles St

Riverside Cir

Dwight Ave Ext

Stimson St

Science Center Rd.

Charles St

Steuben St

W Water St

Village Sq

N Hamilton St

S Platt St

Delaware Ave

Oak St

Fenderson St

Alley 9

John St

Clark St

Imperial Ave

E High St

1st St

Jerome St

Bronson St

Brewster St

Stull Ln

Unnamed Street

E Water St

Hamel St

Hart St

Kane St

Alley 6

Seneca St

Buffalo St

Balcom Ave

Townsend Ave

Cutler Ave

Fuller Ave

Dwight Ave

Pulteney St

Taylor St

S Buffalo St

Cayuta St

W Pulteney St

W William St

Remington Blvd

Denison Pkwy W

Lower Pace Rd

Foothill Dr

Chatfield Pl.

Robert Dann Dr.

Silverback Ln

S Hamilton St

Town Access Road A

US Hwy 15

Tara Pl

Katie Ln

BOA Boundary

Interstate Highways

interchanges

Tree Cover

High

Low

0 625 1,250 2,500

Feet

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ECONOMIC & MARKET TRENDS ANALYSIS

This chapter provides an overview of the market and real estate conditions affecting the Brownfield Opportunity Area (BOA). The goal of this analysis is to inform the Step 2 Nomination Document of likely redevelopments that may occur as well as physical and/or circumstantial improvements that should be made to the BOA to create a more marketable environment

Local Market Trends

The regional economy surrounding the BOA and participating municipalities has a history of industry and innovation. Much of the regions fortunes have long hinged on the presence of Corning Incorporated, a Fortune 500 Company located in the neighboring municipality of the City of Corning. More locally, the Dresser Rand corporation has served as a stalwart industrial employer, as it continues to do so. The Painted Post factory manufactures compressors for various industries; current reports indicate that the local operation has a stable workload. Economic development strategies in the BOA should focus upon diversifying the local employment base, targeting new industry and commercial office growth.

Employment and Labor

Regional employment trends in the Corning region indicate a heavy reliance on the services industry, where nearly 50% of the labor force finds employment. This sector experiences an annual growth rate of approximately 1% in employment. Other major employers for the area include retail at just more than 20% of the local employment base and manufacturing which holds just below 10% of local employment. An evaluation of the labor force indicates that manufacturing has the largest base of employees qualified and available for work. The second largest is in the retail trade, followed by the service industry and construction.

Transportation-Related Growth

The recent upgrades to Interstates 86 and 99, which intersect directly adjacent to the BOA provide significant opportunity for new economic growth. Many industries require highway access and, often, those that depend heavily upon transportation and shipping, require the intersection of two highways According to a 2009 study of the Interstate 86/99 Corridor, the improvements to local expressways projects have significant impacts upon local industry. By 2025, it is expected that local employment could grow by nearly 14%. In terms of sheer numbers, the service industry would experience the greatest level of employment expansion. The transportation and utilities industries would experience upwards of 16% in new employment by 2025, capitalizing upon a strategic location at the nexus of two major transportation arterials.

A number of major impacts are cited to be the result of the transportation improvements. The highways will improve connections to outside areas, effectively expanding the labor market from which employees can be sourced. The highways also extend the radius of delivery service from the BOA, allowing for a one-day service radius expansion of approximately 250 miles. The highways also significantly reduce transportation costs, facilitation more efficient movement throughout the highway corridors.

Tourism

Tourism continues to be a major industry in the Corning Region. The area serves as the southern gateway for Finger Lakes Wine Country. Travelers coming from the south arrive on Interstate 99 and many from places east and west arrive via Interstate 86, both of which intersect in the BOA. The Corning Museum of Glass (CMOG), located just down Pulteney Street from the BOA, is the second most visited tourist attraction in Upstate New York, outside of Niagara Falls. Local tourism officials cite the intersection of the two highways as a major asset that literally puts the area on the map. It has been suggested that this is especially true of motor coach companies who desire predicable, limited access highway corridors to reach their destinations.

The Interstate 86/99 Corridor Economic Development Blueprint identified opportunities for new tourism growth, calling for the development of nationally-branded hotels to capitalize upon the Finger Lakes tourism traffic, locally. The report also recommends expansion of outdoor recreational opportunities, providing better amenities and linkages to the developed residential areas, which would include the BOA.

Industry Growth Recommendations

With a consideration of existing strengths of the area's labor force, as well as projections for industries which can capitalize upon the improvements that have been made to the area's transportation infrastructure, the following industries were recommended as best suited for new growth in the BOA and surrounding region:

- Professional Service
- Manufacturing
- Transportation & Utilities
- Finance, Insurance and Real Estate
- Highway Service & Retail

The Urban Design Master Plan should consider these industry recommendations when planning for land use and spatial needs for the BOA.

Real Estate Overview

The Brownfield Opportunity Area spans 495 acres of land in the Town of Erwin, Village of Painted Post and Village of Riverside. Within the boundary, there are 517 individual parcels of land which encompass just more than 356 acres. The remaining acreage are road, highway and environmental rights of way. The vast majority of the parcels (347) are residential. This includes single-family homes, two-family homes and multi-family properties. Public services account for the largest acreage within the BOA, with just 11 parcels making up more than 111 acres, primarily in railroad rights of way. More than 16 percent, nearly 60 acres of land, is industrial. Much of this land is owned by the Dresser Rand, a multi-national manufacturing company with a significant and major local employer, specializing in the fabrication of air compression units. Other land uses found throughout the BOA include commercial areas, parklands, municipal facilities, community services and vacant land.

The development history of the BOA is reflected in the general conditions of properties found throughout the area. Most residential units were constructed pre-war during the first half of the 20th century. Generally, properties have been well maintained and are in good condition; however, there exist small residential pockets where physical deterioration is more evident. The BOA lacks modern commercial space, most existing commercial space was constructed between 1950 and 1975. The area also contains a collection of industrial properties with active manufacturing and storage operations. The aesthetics of these properties are industrial in nature; they continue to be well within their useful lives.

Table 24: Property Class by Percent of Land Area

Property Class	Properties	Acres	% of Land Area
Agriculture	-	-	-
Residential	347	11.06	3.10%
Vacant	47	49.39	13.90%
Commercial	77	47.51	13.30%
Recreation & Entertainment	1	7.45	2.10%
Community Services	14	46.49	13.10%
Industrial	11	59.37	16.70%
Public Services	11	111.19	31.20%
Wild, Parks & Open Spaces	9	23.74	6.70%
Total Parcels	***517***	***356.2***	***100.00%***

Source: Steuben County, Southern Tier Central

Residential

Although it occupies the largest proportion of parcels, residential property is among the smallest land uses in the BOA with just 3% of the BOA's total acreage. Many of these properties are small, sub-parcels, divisions of larger parcels that have little or no area. To better assess the market inventory and present status of residential real estate for the BOA, this report expands its boundaries to properties within a five-mile radius.

Housing Type

Within the five-mile radius study area, there are just under 11,000 housing units. The majority of those units, more than 60%, are single-family, detached homes. The second most common type is a two-family home, representing 12.6% of the market. This type of home features attached units, where at least one of the units is a rental and includes so-called mother-in-law apartments.

Table 26: Housing Types

Housing Types	Units	%
Total	10,866	100.00%
Single Family, detached	6,639	61.10%
Single Family, attached	164	1.50%
Double	1,367	12.60%
Multi Unit		
3 to 4	549	5.10%
5 to 9	573	5.30%
10 to 19	415	3.80%
20 to 49	61	0.60%
50 or more	589	5.40%
Mobile home	509	4.70%

Source: US Bureau of the Census & peter j. smith & company, inc.

Multiple unit homes are attached dwelling units in groups of three or more units. These account for nearly 20% of homes in the study area, with more than 5% of homes in structures of 50 or more dwelling units. This reflects the inclusion of the Corning city urban area within the five-mile study radius. Among homes in the study area, 1½% are single-family attached homes. These include dwelling units which have shared features, including structural walls and often common outdoor space, and include such housing types as townhomes and condominiums. The remaining 4.7% of the market features mobile and manufactured homes.

Table 25: Housing Age

Housing Age	Units	%
Total	10,866	100.00%
5 Years or Less	35	0.30%
5 - 10 years	339	3.10%
10 - 20 years	668	6.10%
20 - 30 years	796	7.30%
30 - 50 years	2,780	25.50%
50 - 70 years	2,252	20.70%
70+ years	3,996	36.80%
Median Age		56 years

Source: US Bureau of the Census & peter j. smith & company, inc.

Housing Age

The age of housing in the study area is reflective of the long history of development of the Corning-Painted Post area. Of the nearly 11,000 housing units, nearly 4,000 are more than 70 years old, representing more than one third (36.8%) of all homes. Nearly 60% of all units are more than 50 years old.

Home building in recent years has not continued at the pace seen in the past, however reports are that the market remains robust. In the past 10 years, nearly 400 new homes have been constructed in the study area. Going back to 1990, that number stretches over 1,000 homes. The median age for units in the area is 56.

Table 27: Housing Tenure

Housing Units by Occupancy Status and Tenure (within five miles)	2000		2010		2015	
	Units	%	Units	%	Units	%
Total Housing Units	10,855	100%	11,382	100%	11,389	100%
Occupied	10,012	92.20%	9,976	87.60%	9,898	86.90%
Owner	6,393	58.90%	6,404	56.30%	6,324	55.50%
Renter	3,619	33.30%	3,573	31.40%	3,574	31.40%
Vacant	849	7.80%	1,406	12.40%	1,491	13.10%

Source: US Bureau of the Census & peter j. smith & company, inc.

Occupancy

With the decline in manufacturing and overall employment in Corning-Painted Post and an associated decrease in population there has been an increase in housing vacancy. In 2000, 7.8% of homes in the study are were reported as vacant. By 2010, that number has increased to 12.4% and is presently projected to continue to increase through 2015. The increase in vacancy rates is being experienced in both owner-occupied and rental units, however, more significantly in owner-occupied homes. The ratio of owner-occupied housing units to rentals is just below 2:1 in the study area. In 2010, 56.3% of occupied housing units were occupied by the owner. It is expected that the percentage of owner-occupied units will decrease slightly through 2015, while rental unit occupancy will remain relatively constant.

Rental Rates

Rental rates in the study area cover a wide range. Of the more than 3,600 rental units in the five-mile radius, 95.5% receive cash rent. The remaining number of units have different rental agreements, including in-kind services or familial arrangements, where cash is not accepted for rent. More than 40% of units rent for between $400 and $600 per month for rent. Approximately one quarter rent for less than $400/month and just more than one quarter are between $600 and $1,000 a month for rent. Finally, a small handful, approximately 100 units, command rents of more than $1,000 per month; and 70% of those garner in excess of $2,000/month.

Table 28: Housing Rental Rates

Housing Rental Rates	Units	%
With cash rent	3,494	95.50%
Less than $300	486	13.30%
$300 to $399	423	11.60%
$400 to $499	746	20.40%
$500 to $599	755	20.60%
$600 to $699	482	13.20%
$700 to $799	189	5.20%
$800 to $899	303	8.30%
$900 to $999	11	0.30%
$1,000 to $1,499	15	0.40%
$1,250 to $1,499	0	0.00%
$1,500 to $1,999	17	0.50%
$2,000 or more	67	1.80%
No cash rent	165	4.50%

Source: US Bureau of the Census & peter j. smith & company, inc.

Market Value

For the past decade, the Corning-Painted Post area has experienced a strong growth in the market values of its owner-occupied residential real estate. Between 2000 and 2010, the median value of owner-occupied housing rose by nearly 140%, from $73,653 to $127,417. That trend is expected to continue through at least 2015 as it is projected that the median home value will be $163,262. This substantial growth has is largely attributed to the increased presence of high end housing units. In 2000, just 39 units had a market value of more than $500,000. By 2010, that number rose to 163 units and is expected to double by 2015 to approximately 340 units.

Table 29: Housing Value

Owner Occupied Housing Units by Value	2000		2010		2015	
	#	%	#	%	#	%
Total	6,393	100%	6,404	100%	6,324	100%
Less than $50,000	1,164	18.20%	372	5.80%	281	4.40%
$50,000 - $79,999	2,588	40.50%	634	9.90%	288	4.50%
$80,000 - $99,999	975	15.20%	833	13.00%	404	6.40%
$100,000-$124,999	444	7.00%	1,256	19.60%	781	12.40%
$125,000-$149,999	277	4.30%	1,112	17.40%	878	13.90%
$150,000-$174,999	228	3.60%	535	8.40%	1,001	15.80%
$175,000-$199,999	164	2.60%	275	4.30%	739	11.70%
$200,000-$249,999	241	3.80%	381	5.90%	689	10.90%
$250,000-$299,999	174	2.70%	265	4.10%	241	3.80%
$300,000 - $499,999	98	1.60%	579	9.10%	704	11.10%
$500,000 or more	39	0.60%	163	2.50%	339	5%
Median Value	$73,653		$127,417		$163,262	
Average Value	$96,793		$167,207		$209,385	

Source: US Bureau of the Census & peter j. smith & company, inc.

BOA Residential Sales

A closer examination of residential real estate sales, strictly within the project area shows that properties within the BOA hold a lower average market value. During the past three years, 20 valid home sales were sampled. The typical home was approximately 1,750 square feet, had between three and four bedrooms, nearly two bathrooms and sat on a lot of 6,700 square feet.

The average sale price for a home in the BOA since 2009 was approximately $86,000. This number is approximately one half of the average value for homes in the entire market study area. Accounting for data skewed for exceptionally high end sales, this value is approximately two thirds the median value of a home in the market area as a whole.

The difference in value between the larger market study area and properties within the BOA is attributable to the age and condition of the existing housing stock in the BOA, lacking recently developed dwelling units.

Table 30: BOA Residential Sales

Average Sales	Living Area (Square Feet)	Bedrooms	Bathrooms	Lot Size (Square Feet)
$86,350	1,743	3.4	1.8	6,705

Source: Local Assessment Offices, peter j. smith & company, inc.

These trends follow national growth in housing values that was experienced through the first half of the 2000s, however the project area has faired better, when compared nationally, as housing values have continued to rise, and are expected to rise further, at robust growth rates, while nationally, much of the housing market has busted. The strong residential market suggests that new residential units may be a viable development in the project area, especially the potential for such units that cater to those priced out of the growing housing markets, such as senior citizens.

Commercial

The commercial real estate market in the BOA has experienced less resiliency when compared with area housing. The market is mixed with aged commercial buildings/units, largely outdated in terms of both office and retail space. Recent office development has occurred outside of the BOA area, in the Town of Erwin such as the Corning Inc. research facilities, as well as in downtown Corning, where several older buildings have been renovated and modernized.

Office

Much of the existing stock of office space within and adjacent to the BOA was constructed prior to 1980, with little modernized space. This includes a total of eight buildings, four of which are branch bank locations, while four others are more traditional professional office buildings; one being a municipally-owned building and the other offices for Dresser Rand.

Table 31: Commercial Space Sale Rates

Commercial Office Space Sales	Cost Per Square Foot
Class A	$75.00
Class B	$55.00
Class C	$40.00

Source: Pyramid Brokerage, peter j. smith & company, inc.

Outside of traditional offices, the area also features converted office spaces from preexisting residential properties. Within the past 10 years, the BOA and vicinity have had few sales in the office space market. Of the commercial office space sales that have occurred since 2000, the best conditioned properties are selling for approximately $75.00 per square foot, while less desirable, Class C space sells for $40.00 per square foot.

It must be noted that these sales are based upon an extremely limited sample size of area sales during the past decade and will likely vary significantly depending upon a variety of factors including access, location and amenities.

Lease Rates

The region's commercial real estate market has strong lease rates that are, reportedly, getting stronger. According to an area real estate company, office lease rates are as much as $21.00 per square foot for Class A space, both suburban and downtown. For the secondary, Class B market, the area pulls in up to $11.50 per square foot.

Table 32: Commercial Lease Rates

Classification	Low Rental Rates	High Rental Rates	Effective Average Rental Rates
Downtown Office Full Service Rates			
Class A (prime)	$9.00	$21.00	$15.00
Class B (secondary)	$6.00	$11.50	$8.75
Suburban Office Full Service Rates			
Class A (prime)	$9.00	$21.00	$15.00
Class B (secondary)	$7.00	$11.50	$9.25

Source: Pyramid Brokerage, peter j. smith & company, inc.

Compared to similar areas in New York State, these are strong numbers and suggest there is a market for new office space in the BOA, considering its central location and access to regional highway interchanges. It is estimated that the construction of new office space ranges from $100.00 to $150.00 per square foot, depending upon amenities.

Retail

Retail space is concentrated in three primary areas throughout the BOA. First is at the northwestern corner of the BOA near the Interstate 86 interchange at Victory Highway. Dominated by 30 to 50 year old strip retail, original anchor tenants are gone from most spaces and have been replaced with secondary retail. The buildings have received minor maintenance and updates over the years, significant upgrades have generally not occurred. The second retail cluster is in the Village Square; a mixed use retail development that features a collection of shops, restaurants and office space. This is a unique space within Painted Post, centered around a pedestrian mall with parking relegated to the exterior of the property. Aesthetically, the Village Square is dated and recent sales show that purchase prices are of approximately $50.00 per square foot. The third retail area within the BOA is Pulteney Plaza in the Village of Riverside. This is the most modern of the retail spaces in the town, featuring a national restaurant chain as well as value priced shopping.

Table 33: Commercial Construction Rates

Commercial Space New Construction	Cost Per Square Foot
Base	$100.00
High End	$150.00

Source: Personal Interviews with real estate professionals, peter j. smith & company, inc.

Retail lease rates in the BOA area are low when compared on a regional level, ranging between $4.00 and $7.00 per square foot. According to local Realtors, the retail potential for BOA properties is largely limited to small to mid-size establishments serving the hospitality industry, due to the close proximity to Interstate 86 interchanges. This includes the development of national restaurant chains and similar highway service retail. Larger retail development will locate in other established retail centers in areas such as Gang Mills as well as the region's power center in Big Flats, to the east.

Retail Gap Analysis

The E/PP/R Nomination study provided an excellent opportunity to assess the retail possibilities within the Town of Erwin, the Village of Painted Post, and the Village of Riverside. Based on the most recent Nielson Caritas data available, the project team was able to calculate which types of businesses/product lines may be successful in the E/PP/R Brownfield Opportunity Area (see **Table 34** on the next page).

Table 34: Retail Gap Analysis

Retail Sectors	Within 500 Acre BOA Area		Within 15-mile Radius	
	Opportunity Gap/Surplus	Possible ft^2	Opportunity Gap/Surplus	Possible ft^2
Non-Store Retailers	$1,622,562	5,409	$49,494,370	164,981
Pharmacies and Drug Stores	$1,150,457	3,835	($30,777,445)	102,591
Limited-Service Eating Places	$921,982	3,073	$24,930,054	83,100
Automotive Dealers	$2,689,376	8,965	$21,877,742	72,926
Supermarkets, Grocery (Ex Conv) Stores	$2,685,441	8,951	$34,417,371	114,725
Radio, Television, Electronics Stores	$246,209	821	$2,161,804	7,206
Building Materials, Lumberyards	$342,484	1,142	$7,429,939	24,766
Nursery and Garden Centers	$153,167	511	$8,548,938	28,496
Drinking Places -Alcoholic Beverages	$112,475	375	$271,194	904
Beer, Wine and Liquor Stores	$204,935	683	$3,817,774	12,726
Office Supplies, Stationery, Gift Stores	$224,751	749	$5,886,425	19,621

Source: Nielsen-Claritas Site Reports, Southern Tier Central

The retail environment in southeast Steuben County is highly saturated. Just beyond the BOA boundary, the Erwin Wal-Mart/Town Center Plaza severs as a local retail hub. Only 10 miles to the East, the Big Flats-Horseheads retail area is an existing retail powerhouse which serves the needs of residents in a 5+ county area. Of the approximately 40 t ypes of businesses assessed in the retail analysis, only 11 showed any retail potential within the BOA boundary. This analysis divided the retail sectors into two categories: opportunity for additional retail stores (highlighted in grey) and recommend additional product lines (white).

Only five types of retail stores, highlighted in green, showed significant retail potential within the BOA. These 5 types of business (grocery, car dealers, fast food, pharmacies, and non-store retailers) could potentially operate in the BOA, based on sales to BOA residents alone. The BOA process has documented community support for a small pharmacy, a grocery, and several restaurant options. Non-store retailers represent one of the largest potential markets in the Brownfield Opportunity Area. According to the retail sales data, a $1.6 million dollar retail gap exists for non-store retailers (phone, web, and catalogue based sales) within the BOA; within a 15 mile radius of the study area there is nearly a $50 million dollar retail gap. Enterprising residents/business owners in the BOA could benefit by utilizing 'non-store' retail options to address this retail gap. E-commerce websites (such as eBay, Yahoo, and Etsy) may be particularly useful in allowing local businesses to expand with little additional overhead.

There may be an opportunity for some small business growth of pharmacies/drugstores within the BOA. According to the retail gap data, there is more than $1 million in unmet retail demand for pharmacies/drugstores within the BOA boundary; BOA residents have expressed a preference for a local pharmacy/drugstore. However, when the 15 mile radius retail data is analyzed, there is an over-supply of drugstores outside the BOA. An oversupply in the surrounding area does limit the potential of a traditional pharmacy/drugstore, there may be potential for a small drugstore that provides additional services (prescription delivery, clinic).

Limited Service Eating places are under-represented in the BOA and in a 15 mile radius around the BOA. There is $900,000 in unmet demand for 'fast food' within the BOA boundary. In the region surrounding the BOA, there is nearly $25 million in unmet demand for these types of restaurants. The location of the E/PP/R BOA, at the intersection of Route 15 and I-86, makes this community very attractive for limited-service eating places. For the past 10-15 years, residents have consistently shown a preference for additional restaurants in this community.

According to the retail data, automotive dealers are underrepresented in the BOA. Given the $2.6 million dollar retail gap within the BOA and the $20 million retail gap outside the BOA, there is ample opportunity for car dealerships. One or two used car dealerships could operate in the community provided adequate sites are available.

There is a significant opportunity for a supermarket or grocery within the BOA. There is $2.6 million in unmet demand within the BOA and $34 million of unmet demand in the region surrounding the BOA. Within a 5 mile radius, there are: a Wegmans, a Wal-Mart, and an Aldi. Any small grocery or supermarket within the BOA would need to address a market niche un-satisfied by existing grocery options. Residents have expressed strong support for a grocery/supermarket in the BOA; a grocery with home-delivery service might succeed in this business environment.

The remaining six types of retail options (electronics, building materials, nursery/garden, office supplies, wine/liquor, and drinking places) have a small but significant gap in the E/PP/R Brownfield Opportunity Area and a much larger retail gap in the 15 mile area surrounding the BOA. Each of these product lines represents an opportunity to expand product offerings in existing retail stores.

Industrial

Industrial space within the BOA and the entire Corning-Painted Post area is in high demand and considered to be at a premium. W ithin the project area and near vicinity, there is little industrial space available. Most is either occupied and operational, or it has been demolished as it has reached the end of its useful life. Industrial space that does remain available is not up to modern standards and, according to local Realtors, will likely be demolished rather than reused.

Table 36: Industrial Lease Rates

Classification	Low Rental Rates	High Rental Rates	Effective Average Rental Rates
Bulk Warehouse	$2.50	$5.00	$3.75
Industrial Manufacturing	$3.00	$4.00	$2.75

Source: Pyramid Brokerage, peter j. smith & company, inc.

Lease Rates

Rental rates for industrial space in the area are on par with rates found in other regions of New York State. F or bulk warehouse space, rates range between $2.50 and $5.00 per square foot. For industrial manufacturing facilities, the range is tighter at $3.00 to $4.00 per square foot. While these rates have remained steady over recent years, local real estate professionals with insight into the market say that rates may be beginning to spike due to expanding gas extraction in neighboring regions to the south in Pennsylvania.

Table 35: Industrial Sales Rates

Industrial Space Sales	Cost Per Square Foot
Class A	$7.00
Class B	$5.00
Class C	N/A

Source: Pyramid Brokerage, peter j. smith & company, inc.

Similar to the lease rates for industrial space, purchase prices have remained consistent, presently ranging between $5.00 a nd $7.00 per square foot. Demand is increasing due to the expanding gas industries in Pennsylvania, which requires substantial industrial space for storage as well as manufacturing and maintenance facilities, therefore forcing rents above the rate their condition would otherwise warrant.

Considering the mounting pressures for new industrial space in the project area, there is a market for new industrial, manufacturing and warehouse space. Construction of such space to modern day standards will range in cost from $50.00 to $70.00 per square foot.

Table 37: Industrial Construction Rates

Industrial Space New Construction	Cost Per Square Foot
Base	$50.00
High End	$70.00

Source: Personal Interviews with real estate professionals, peter j. smith & company, inc.

Real Estate Outlook

The expanding hydraulic fracturing gas industry in northern Pennsylvania is beginning to have significant impacts upon commercial office space and especially industrial space in the Corning-Painted Post area. As noted previously, industrial space comes at a premium and any reasonably usable space in the area is occupied.

New industrial development will be constructed to house storage for hydraulic fracturing equipment and materials, such as sand, as well as for the fabrication and maintenance of machinery used in the extraction process. Office space is also experiencing demand from the industry. Williamsport, PA, has had an explosion of new gas company headquarters, with more than 120 individual gas companies now located there. Spin-off impacts are being felt in the southern tier of New York State. Several gas companies have located in Horseheads, proximate to the local airpoRoute Ancillary to the industry, the region has seen new engineering firms open offices, largely to conduct environmental work related to the gas industry in Pennsylvania.

New facilities related to the gas industry range depending upon the specific use. Among the potential demands are storage warehouses for sand. The demand is for buildings of 100,000 to 200,000 square feet, or more. A significant opportunity for the BOA is the demand for free standing industrial facilities with between 5,000 and 15,000 square feet. These facilities would house maintenance and manufacturing operations for hydraulic fracturing equipment, as well as equipment storage. The BOA area could support a "flex" park that includes space easily adaptable to either industrial and commercial uses. Typically, flex parks lease for $5 to $6 per square foot. However, due to present demand and a shortage of supply, similar spaces proximate to Williamsport have recently leased for $18 to $20 per square foot. These rates are significantly above the common industry market.

SUMMARY ANALYSIS, FINDINGS, AND RECOMMENDATIONS OF THE BOA AND STRATEGIC SITES

Overview

With increasingly limited land and financial resources, locally and across the State, economic development efforts should be seeking investment and revitalization opportunities in sustainable locations that take advantage of existing infrastructure and provide growth opportunities that maximize spin-off impact opportunities and enhance local quality of life. The Erwin/Painted Post/Riverside Brownfield Opportunity Area (E/PP/R BOA) offers tremendous redevelopment potential for the urban cores of three municipalities in the Southern Tier region of New York State.

As a three community study area, the BOA provides a special advantage of intermunicipal cooperation, shared vision, and priority consideration for state and federal grant resources which will make the EPPR BOA very attractive for future investment. State funding for the Erwin/Painted Post/Riverside Brownfield Opportunity Area will make significant improvements in three cooperating municipalities.

The Step 2 BOA Nomination project will facilitate urban re-development in an existing population cluster. The EPPR BOA is an excellent candidate for further, Step 3 funding under the BOA Program. This study satisfies the criteria set forth by our project work plan and the New York State Department of State.

The inventory and analysis coupled a multi-faceted community participation process of the BOA has informed the Step 2 Nomination Study of the major challenges and opportunities facing the BOA, as well as the potentials for new growth. These recommendations will form the basis for moving forward into Step 3 of the BOA program.

Pre-Nomination Recommendations

The recommendations in this chapter build upon the previous findings of the Step 1, pre-nomination study. Completed in March, 2009, the pre-nomination document is an overview study of BOA, with analysis of its basic, readily available conditions. These recommendations are preliminary and provide direction for Steps two and three of the BOA program. As will be demonstrated in the final recommendations of the Step 2 Nomination Study, each recommendation of the pre-nomination has been provided for or accomplished.

Following are the major recommendations stemming from the Step 1 Study, including the status of each as of the drafting of Step 2:

Table 38: BOA Step 1 Recommendations

Recommendation		Description	Incorporation into Step 2	Status
1	Strengthen relationships with the local business community	• to help provide for their needs, facilitating retention and expansion	The study included a focus group with local business owners, personal interviews with business owners and a survey of local businesses, requesting their input	Accomplished & Ongoing
2	Provide redevelopment incentives for the redevelopment of Strategic Site C	• to define a shovel ready site on the former foundry and expediate development here through financial tools and support from a unified community vision	The study includes a funding matrix identifying financial programs to assist with economic development	Step 3
3	Conduct a market analysis	• to define potential growth industries	A market trends and real estate analysis as well as a retail gap analysis was conducted to determine industries best positioned for growth as well as real estate needs	Accomplished
4	Develop market materials	• to inform potential developers of the BOA assistance programs, growth opportunities and the community-defined urban design plan	Ancillary to the Step 2 Nomination Study document, a poster and related marketing materials have been developed to promote development within the BOA	Accomplished
5	Improve community participation	• to foster community-driven support for new development that occurs within the BOA	The Study process incorporated a diverse, community-led steering committee, five topic-oriented focus groups, stakeholder interviews and two interactive public workshops	Accomplished & Ongoing
6	Strengthen working relationships with economic development agencies	• to ensure collaboration and avoid duplication in economic development efforts	Our process has reached out to a diverse number of economic development professionals and regional stakeholders, including several collaborative and intermunicipal project meetings	Accomplished & Ongoing
7	Draft a Business Retention and Expansion Strategy	• to define the means by which the local municipalities and economic development professionals can assist in maintaining and growing business	A strategy for business retention and expansion has been drafted and is included in the recommendations	Accomplished
8	Coordinate a plan for shared municipal services	• to achieve efficiences of labor and cost by avoiding service duplication	The development of an intermunicipal efficiency plan has been identified as a primary recommendation of the Step 2 Nomination Study	Step 3

Furthermore, the pre-nomination provides a series of preliminary action steps for the development of the BOA. Each of these items has been considered in the Step 2 Nomination Study and incorporated into the Urban Design Plan, accordingly. Following are the seven major action steps identified in the pre-nomination:

As the E/PP/R BOA program moves into Step 3, these action steps continue to be of relevance and should be a focus for implementation. The urban design plan, described later in this section, will serve as the primary vision for redevelopment of the BOA. Efforts to attract new development should be conducted within the context of that plan.

Table 39: BOA Step 1 Action Steps

Action Step		Incorporation into Step 2
1	Attract Highway-Oriented Retail & Service	Up to 55,500 square feet of highway-oriented retail and service has been planned for at strategic sites A and G in the Urban Design Plan
2	Attract a Research/Light Industrial Facility/Software Campus	A 350,000 square foot light industrial/high tech/commercial flex space campus has been planned for at strategic site C of the Urban Design Plan
3	Attract & Concentrate Local Retail	Up to 31,500 of neighborhood commercial development has been planned for at strategic site B of the Urban design Plan, in addition to 300,000 of mixed use space planned for strategic sites D, E & F
4	Attract Professional Services & Offices	Up to 300,000 square feet of mixed use space, including commercial office, has been planned for at strategic sites D, E & F of the Urban Design Plan
5	Implement Community Beautification & Community Use	Streetscape improvements, pedestrian amenities and beautification projects have been recommended throughout the BOA, with special concentrations around strategic sites C, D, E and F
6	Encourage High Density Residential	48 1,000 square foot urban townhouses have been planned for at strategic sites D, E & F of the Urban Design Plan, in addition to up to 300,000 square feet of mixed use space, including residential at strategic sites D, E & F
7	Encourage Health Care & Assistance	A senior housing complex has been planned for at strategic site D of the Urban Design Plan

Summary of Step 2 Nomination Analysis & Findings

The Step 2 Nomination Study includes a comprehensive investigation of the Brownfield Opportunity Area across 13 topic areas. These analyses have culminated to inform the BOA project team of the major obstacles and opportunities that the project area faces. They have influenced the drafting of project recommendations as well as the development of a land use plan and the urban design plan. It is with this factual basis that the BOA project sponsor can feel confident in pursuing the recommendations of the Step 2 Nomination.

Summary Overview of Findings

The Erwin/Painted Post/Riverside Brownfield Opportunity Area is an urban project area, primarily composed of industrial factories, residential neighborhoods, highway retail centers, education and recreation. Unlike many BOA projects throughout New York State, this project boundary is not mostly composed of several large swaths of land and a few remaining industrial employers on an otherwise abandoned landscape, rather, the E/PP/R BOA project is situated in the midst of active urban neighborhoods. The mixed-use nature of development found throughout the project area gives the E/PP/R BOA specific challenges and opportunities for redevelopment. There is much to build upon, with a stable residential population, existing large employers and major transportation access. However, the close proximity of the many elements call the need for sensitivity to adjacent land uses and require creative means to identify infill development opportunities or to assemble lands for larger urban development projects.

The most significant challenges facing the project area are land constraints and contamination. The largest strategic site in the BOA is 45 acres, Strategic Site C. Approximately 11 acres of that is already being developed for a new rail siding. Each of the remaining strategic sites are less than 10 acres. This presents a challenge for accommodating major "campus-style" developments within the BOA. It will be imperative for the Urban Design plan to conceptualize potential assembly of multiple parcels to enable larger developments. The plan will also identify opportunities for small infill development that can serve the needs of the local community and enhance the physical conditions of the community.

Contamination has also been identified as a potential significant issue for several parcels. Of the eight identified strategic sites, six have been recommended for phase 2 environmental investigations as a part of the BOA Step 3. A seventh site, Strategic Site C, has already been remediated to the point that it can accommodate industrial development. The last site, Strategic Site D does not recommend a phase 2 investigation, however there will be asbestos abatement required for any changes to the historic structures on the property.

The BOA also presents many positive opportunities for potential development. The most significant strength of the study area is its transportation and access infrastructure. The project area is located directly adjacent to the intersection of two major highways, Interstate 86, which travels across southern New York State, and Interstate 99, which is presently under construction, traveling south into Pennsylvania. The BOA is served by three interchanges to the highways, one at each end and one in the center, perhaps making the project area the most highly accessible development area in the entire southern tier.

The historic development patterns of the BOA offer the opportunity to build upon existing development, taking advantage of presently available roadways, infrastructure and services. According to the infrastructure report, there exists excess capacity for both water and sewer to accommodate new growth. New development will have a nearby population to function as a consumer market as well as to serve as a source for employees. The historic qualities of the BOA also extend to the structures. Several buildings throughout the project area have potential for adaptive reuse, sustainably giving historic and non-historic buildings new function. The current Corning-Painted Post School Board building located at 165 Charles Street is a beautiful red brick, neo-classical structure that, given changes in facility needs in the school district, may be in line for a new use. Such a structure would lend itself well to a residential, office or mixed use conversion.

The building's presence within a dense residential neighborhood make it an ideal candidate for multi-unit adaptive reuse. The urban design plan and project recommendations will identify a preferred future for the structure.

The E/PP/R BOA is also home to a diverse collection of public landscapes, including schoolyards, sports fields, recreational parkland and pocket parks. The presence of these recreational spaces enhances the local quality of life and provide amenities to both residents and employees of the area's companies. They should be considered a significant asset and any new development or public improvements should strengthen the communities' landscapes.

A review of economic and market trends has provided insight into the potential for new growth in the BOA. The analysis has cited a robust housing market throughout the Corning region, with home values expected to double from the year 2000 to 2015. However, examining more locally within the BOA project boundary, home sales are approximately 50% the value of sales throughout the region. This is due to the presence of deteriorating conditions prevalent in an older housing stock. Very little new residential development has occurred within the BOA has occurred to offset these numbers. A means to strengthen the residential market within the project area may be to provide new housing that diversifies the existing stock of units, while enhancing the area's quality of life by beautifying streetscapes and public spaces.

The commercial and industrial markets within the BOA offer contrasts to one another. The analysis suggests that the current state the commercial office and retail space shows signs of saturation, with sales and lease rates lower than markets elsewhere. However, it must be noted that the majority of both the office and retail stock within and adjacent to the BOA is dated, providing little modernized space for either. According to the retail gap analysis, there is limited potential for growth in a few sectors, including automotive, pharmacies and supermarkets. H owever, given the recent transportation improvements to Interstates 86 and 99, it is plausible that the study area could be well positioned for new growth, should land and/or modernized space become available. \

Conversely, the industrial space market, locally, is in demand. T his is largely due to the emerging natural gas industry in northern-central Pennsylvania. Within the BOA project area and nearby vicinity, there is very little industrial and warehouse space available; newly constructed spaces throughout the region are quickly occupied by natural-gas related industry. The gas industry is also creating a need for flex space that can accommodate a combination of industrial and commercial tenants. Much of the spin-off impact of the gas industry is in related services, such as engineering, surveying and logistics. N earby Chemung County has experienced substantial growth in its service industries, related to the industrial growth in Pennsylvania.

Tourism remains a growing industry for the Southern Tier and Finger Lakes region. I t is suggested that the BOA provides opportunity to offer tourism support amenities, such as national restaurants and retail as well as some nationally branded accommodations. The project area will not become a significant destination for tourists, but providing for some support amenities at the three interchanges in the project area will allow the local communities to capture portions of the larger tourism economy.

Section Findings

The matrix provided on the following pages provides a brief overview of the findings of each of the investigative sections of the Step 2 BOA Nomination. Each of the 13 sections are listed, with the challenges and opportunities with which each is faced in light of the potential redevelopment of the BOA. T his section is mean to provide a quick understanding of the conditions of the BOA, given the exhaustive nature of the rest of the document. This matrix will be useful as a reference as the project moves into Step 3 and further to redevelopment.

Table 40: Major Findings

Inventory Section	Challenges	Opportunities
Community & Regional Setting	· Continued population decline, albeit slowing	· Population growth in the Town of Erwin
	· Painted Post & Riverside lag behind state & national economic indicators	· Town of Erwing shows stronger economic than Statewide and National economies
	· Riverside's educational attainment is significantly lower than Painted Post and Erwin	· Dresser Rand is among the County's largest employers
		· Corning Incorporated employs 7,000
Land Use	N/A	· Almost 20% of the land is devoted to industrial use
		· 45 acres of land is devoted to parks & public purposes
		· 34 acres of vacant land
		· more than 50 acres of commercial land
		· Painted Post accounts for more than 60% of the BOA land area
Zoning	N/A	· 190 acres zoned residential
		· 165 acres zoned industrial
		· 7 acres zoned mixed-use
		· 100 acres zoned commercial
Transportation	· Unimproved streetscapes	· Two major interstates
		· Three interchanges serving the BOA
		· Minimal traffic congestion
Infrastructure	· Utility infrastructure for the project area has not been mapped	· Sewer system is presently operating at just 50% of its total capacity
		· Water system is operating under capacity
Traffic & Parking Analysis	· Route 415 & Bronson St. intersection will need improvements to accommodate full build out of the urban design plan	· No present congestion issues at any intersection
	· Route 415 & Taylor St. intersection will need improvements to accommodate full build out of the urban design plan	· No significant parking issues are cited within the BOA study area
Brownfield, Abandoned & Vacant Sites	· Nearly 25 acres of brownfields	· Nearly 90 acres have been identified as underutilized
		· Nearly 15 acres have been identified as vacant
Strategic Sites	· Strategic Sites A, B, E, F, G recommended for a Phase II Environmental Site Assessment in step 3	· Eight strategic sites identified
	· Strategic Site H recommended for a Phase I and a Phase II Environmental Site Assessment in step 3	· Strategic Site C is considered remediated to the point where industrial development may occur
	· Buildings on S trategic Site D have been identified as having significant structural concerns and the presence of asbestos	· A Strategic Site C access alternatives analysis has determined that the preferred access to spur new development at the site is the construction of a bridge connecting the northwest section of the property to W. Water Street.
	· Deed restrictions on Strategic Site C allow for industrial development only at the discretion of the Dresser Rand Company	

Table 41: Major Findings (cont.)

Inventory Section	Challenges	Opportunities
Land Ownership Patterns	· 3.5 acres of brownfiels are privately owned	· 21.5 acres of brownfields are publicly owned
	· 31 acres of underutilized sites are privately owned	· 56 acres of underutilized sites are publicly owned
	· 12 acres of vacant sites are privately owned	· 1.1 acres of vacant lands are publicly owned
Parks & Open Space	N/A	· All parks & open space lands in the BOA are within the Village of Painted Post
		· 35 acres devoted to community service
		· 8 acres devoted to recreation & entertainment
		· 18.5 acres devoted to conservation/parks
Building Inventory	N/A	· Eight significant buildings/sites in the BOA have been chosen for a more detailed description. These include: a former car dealership, the former dresser rand foundry site, the Corning-Painted Post School Board building, the Krog building, the former Erwin Town Hall, the Immaculate Heart of Mary church, Crystal Cleaners and Storflex. These sites have been identified as pivotal to the BOA's redevelopment
Historic or Archeologically Significant Areas	N/A	· Due to flooding, there is a low likelihood for the presence of historic artifacts
		· Three properties are listed on the National Register of Historic Places
Natural Resources & Environmental Resources	· Due to the presence of fill in areas proximate to the Chemung River, detailed soil analysis is recommended for new construction	· Groundwater is monitored for potential contamination and has continued to meet safe drinking standards
	· Generally, soil is good for construction throughout the BOA	· Water quality of the Chemung River has continually improved over the past 40 years
	· Flood control is present throughout the BOA due to previous flooding events and must not be disturbed by new development	· Air quality standards are met throughout the BOA area
Economic & Market Trends Analysis	· Saturated market for commercial space	· Industrial space in high demand
	· BOA features dated commercial space	· Growth expected in transportation-related industries
	· Local area lacks modern housing & variety	· Growth expected in gas industry support sectors
		· Potential for traveler support retail & restaurants
		· Strong housing market in surrounding region

Recommendations

As a conclusion of the exhaustive analysis of the Brownfield Opportunity Area, a number of recommendations have been made that are determined to be the best course of action moving into the Step 3 section of the program and to spur redevelopment of the project area.

Further Environmental Investigation

Several properties within the BOA have been recommended for more extensive environmental investigation in Step 3 in the form of Phase I and Phase II Environmental Site Assessments. These are in addition to the six Phase I Environmental Site Assessments and one summary assessment conducted in Step 2.

Although it is not included in the roster of strategic sites, it is recommended that 511 E. High St. be included in the analysis and redevelopment planning concurrently with Strategic Site E, the former auto parts store and Crystal Cleaners site. 511 E. High has been a focus of redevelopment efforts over many years. A former auto service and gas station, it has or had underground storage tanks, and sits in a cluster of known and suspected contaminated sites. Because of the topography, there is suspected communication between 511 East High and Strategic Site E -- that is, it is believed that contaminants could well be moving between the two sites. Therefore, it makes sense to determine what contaminants are present at 511 East High as well as at Strategic Site E, where they have originated and how to clean them up and make sure they do not spread farther afield.

The condition of 511 East High and its potential future has been a priority for Riverside Village leaders for years. The site's owner has reportedly had a long and frustrating history of trying to put together a redevelopment plan with environmental regulators. It is doubtful that a clean-up and reuse of Strategic Site E is going to be truly successful if across the street 511 East High continues to remain vacant and blighted. This is particularly true if 511 East High is indeed cross-contaminating other sites.

The following matrix identifies the appropriate investigative actions, indicating additional investigations to be undertaken in Step 3:

Table 42: Further Investigation Recommendations

Property/Strategic Site	Phase I	Phase II
A	Completed	Step 3
B	Completed	Step 3
E	Completed	Step 3
F	Completed	Step 3
G	Completed	Step 3
H	Step 3	Step 3
511 East High St.	Step 3	Step 3

Zoning Revisions

A review of the zoning ordinances of each of the BOA municipalities has identified a number of inconsistencies in development visions of adjacent and adjoining parcels across municipal boundaries. The primary inconsistencies occur at the Village of Painted Post and Village of Riverside border, within and adjacent to Strategic Site F. Properties at this location, considered a single development site are divided into three separate zoning districts, residential and industrial within Painted Post, commercial within Riverside. Furthermore, properties to the south, surrounding the Hart Street Area also find themselves in a mix of residential, industrial and commercial zones.

To maintain a cohesive vision for the redevelopment of the BOA, it is important that lands within the BOA are regulated by consistent development codes. It is recommended that each of the three municipalities, under the guidance of Southern Tier Central, engage in a collaborative rezoning process to update their respective zoning codes according to the Future Land Use Concept for the Brownfield Opportunity Area. The most significant revision will include the introduction of a mixed use district into the villages of Painted Post and Riverside. It is recommended that the Town of Erwin's Zoning code be used as a model starting point for the redrafting of the zones.

W. Water Street Bridge Project

A major project recommendation of the BOA is to improve access to the study area's largest development site, Strategic Site C, the former Dresser Rand Foundry. A total of six options were evaluated in a S trategic Site C access repoRoute Each was considered based upon the quality of access it p rovided, feasibility, potential costs and impacts to surrounding land uses. It was the recommendation of the report that a Bridge should be constructed in the northwest portion of the site, connecting Strategic Site C to West Water Street and, indirectly, to the interchange of Interstate 86. This option provides the greatest level of access with minimal impacts to the surrounding established neighborhoods. The estimated cost for this project is $5.5 million. H owever, this cost should be considered in light of its potential to stimulate a substantial private sector investment into Strategic Site C.

It is recommended that Southern Tier Central, Three Rivers Development Corporation, the Steuben County IDA and the Village of Painted Post pursue funding for this project as a catalytic infrastructure improvement for the local economy. A project *white paper* should be submitted to the Regional Economic Development Council identifying the potential benefits of such a project and requesting funding for its pursuit.

Intersection Improvements

Based upon the Traffic and Parking Analysis, two intersections have been identified as in need of improvement by 2022 should the urban design plan reach full build-out potential. The intersection of Route 415 and Bronson Street will need to be modified. An analysis of the intersection with the installation of an actuated signal reveals the LOS can be improved to C (20.4) seconds. Additionally, the intersections of Route 415 and Taylor Street and Buffalo Street and East Water Street, each which service the plaza containing Site G, will be significantly affected. Installation of a signal at the Route 415 and Taylor Street intersection along with coordination with the signal at Buffalo Street will help the flow of traffic through this area.

Streetscape Projects

Local municipalities should also focus on streetscape improvements, to improve the marketability, appeal and quality of life within the BOA. P riorities for streetscape improvements are Victory Highway/Pulteney Street as well as North Hamilton Street. Each of These are the primary east-west and north-south thoroughfares in the BOA. Improvements should include a reduction of curb-cut access points to improve traffic flow, introduction of traffic calming tools such as bump-outs and raised crosswalks as well as greater pedestrian signal controls. These streetscapes will provide identity to the project area and enhancing the local quality of life by encouraging healthy lifestyles.

Beautification

The project municipalities should employ a series of beautification initiatives to achieve immediate improvement to the project area. These initiatives should focus upon low-cost ($5,000 or less), near-term project aimed at providing "quick-wins" for the BOA program, improving the image of the local communities and building enthusiasm and support for the project. Following are potential beautification projects:

- Hanging Flower Baskets on North Hamilton Street
- Streetlight Banners along Victory Highway/Pulteney Street identifying each of the municipalities in the BOA
- Wayfinding signage at the corner of Victory Highway & North Hamilton Street
- Community Garden at the D, L & W Rail Depot
- Enhanced "welcome" signage to each of the communities adjacent to each Interstate 86 Exit

Pedestrian Connectivity

Develop enhanced pedestrian connectivity within the heart of the BOA, adjacent to North Hamilton Street. The pathways identified in the Urban Design Plan will enhance connectivity between the local residential community, Village Square retail, commercial services and employment. They also promote healthy lifestyles and enhance viewsheds within the community, especially to the landmark Corning-Painted Post School Board building. These connections build upon existing public rights of way and will require the acquisition of two properties on Charles Street and two properties on Steuben Street.

Property Acquisition

Local economic development entities should pursue the acquisition of several properties within the BOA for future development. These properties include those within Strategic Site H to accommodate the future bridge connection as well as redevelopment of the site. Future acquisition of residential properties in the Hart Street area may also be considered for future industrial, should Site C reach build-out.

165 Charles Street Redevelopment

The Corning-Painted Post School Board Building at 165 Charles Street is among the most important landmarks in the BOA. The building is expected to no longer meet the facilities needs of the school district and requires an adaptive reuse. The building should be redeveloped as senior multi-unit housing with community facilities for events and recreation. The Village of Painted Post and local economic development organizations should establish a public-private partnership for the redevelopment of the structure sharing in the costs of public amenities.

Marketing

Project sponsors should develop marketing materials targeted towards prospective developers, aimed at attracting them to a location in the BOA. Materials should consist of a large scale plot of the Urban Design Plan for display in local municipal and economic development offices as well as a brochure detailing the Urban Design Plan, the BOA's major amenities and suggesting potential redevelopment assistance programs.

Business Retention & Expansion Strategy

Business leaders make location decisions based upon their ability to cut their costs, availability of a quality workforce and access to training and educational resources for their workers as well as financing and incentives. Business location decisions are also made on the basis of proximity to transportation resources, competitors, suppliers and customers. Additional important elements of the decision to move or stay put include how supportive is the business atmosphere – is there a Chamber of Commerce, Small Business Development Center, business alliance or other organizations, how helpful and prompt is the municipality in processing requests or issuing permits. Quality of life is also an important aspect to help the business attract and retain employees – are there good schools, nice parks, friendly people and good retail? Will employees and be happy and productive here?

An attraction and retention strategy is needed to help make the case for businesses to locate in Erwin, Painted Post and Riverside and it requires a team effoRoute In the BOA partners such as the Erwin and Steuben County IDAs and Three Rivers Development Corp. would appropriately take the lead in attraction and retention of larger-scale businesses such as manufacturers and industry. To attract and retain the small businesses that form the backbone of the economy, local residents and small business leaders have a central role. These stakeholders can form a team – or reignite a team that has already been empowered – to call on prospects and make the case for locating in the BOA.

This team's focus should also be on existing businesses as an important aspect of the overall strategy. These businesses may be looking for expansion opportunities in real estate or into new business sectors, they may need to identify partner organizations and allies in their clusters for customers and clients and to identify partners in economies of scale. Often these existing businesses watch new businesses receive incentives for which they are not eligible – unless they move to another community. It's important to call on them, make sure they know there are sources of assistance for them and thank them for their loyalty.

The business attraction and retention strategy is based on the results of the retail gap analysis, business survey, real estate analysis, regional economic indicators, and input from the consultant team. The business environment within the Brownfield Opportunity Area is relatively good and improving. Some tools the team will need are probably already available such as a fact sheet summarizing the area's demographics, workforce statistics including education, and quality of life facts and figures. The Step One pre-nomination study includes a real estate "slip sheet" on almost every property in the BOA . that can be used as a starting point for development of an inventory of available properties.

According to the retail gap analysis, there is an un-met need in the BOA for two small restaurants, a small drugstore, a small grocery, and one or two used car dealerships. Also, the retail gap analysis showed a significant growth opportunity for non-store retailers (phone, web, and catalogue based sales). Within a 15 mile radius of the study area there is nearly a $ 50 million dollar un-met need for non-store retailers; home based businesses in the BOA could access this vast market.

According to the business survey, one-half of businesses started in the BOA and the other half moved into the BOA. This indicates that the economic environment is strong enough to attract businesses. Approximately 92% percent of survey respondents believe that this location is ideal; that is high praise for the E/PP/R BOA. Only a few businesses in the BOA operated during the weekend; which demonstrates there is room for growth of existing businesses in the evenings or during the weekends.

After reviewing the retail gap analysis, the business survey results, and the I-86/I-99 Corridor Blueprint Study there appear to be growth opportunities within the E/PP/R BOA for four distinct types of businesses. Together, these four strategies will result in a diversification of the local economy, an increase in local employment, and a significant increase in local spending due to the multiplier effect:

1) I-86/I-99 interchange based development (fast food and vehicle service)

2) Growth within the existing businesses of the BOA (additional products/services and longer hours of operation)

3) Start-up growth, from a strong partnership with existing regional incubators

4) Growth in the non-retail home business sector of the economy.

Action by local government will be necessary to attract and retain vital businesses within the BOA. Local zoning and planning board involvement are fundamental for community approved business developments. Planning/zoning can vary dramatically between communities; community supported zoning laws are an important element for attracting development. The existing zoning is a particular area of concern for two communities in the BOA; outdated master plans are a barrier to business friendly zoning in Painted Post/Riverside. These five steps will allow local governments to create a more attractive business environment.

Creating strong partnerships with the Corning Chamber of Commerce, Three Rivers Development, and The Steuben County IDA may result in additional business growth. The Village of Riverside should work with residents to create a Comprehensive Plan and revised Zoning map; good zoning is vital for development in the Village. The Painted Post Board of trade should expand the scope of their activities in the community.

Future Land Use Concept

The Future Land Use Concept serves as the basis for organization of future development within the Brownfield Opportunity Area. The concept is also the blueprint for how each of the Municipalities should update or amend their respective zoning codes in anticipation of the BOA's redevelopment. It is recommended that the three municipalities work together to draft their zoning code updates, to ensure consistencies in development regulation across municipal boundaries. The Future Land Use Concept is developed around a central theme of identifying opportunities for infill development in the BOA that will not only support new economic growth, but will also enhance the existing quality of life for those who live and work in the area. This approach is sustainable, planning for new development that will utilize existing transportation and utility infrastructure and take advantage of an available workforce.

A historic urban development pattern and expanding transportation infrastructure form the basis upon which the land use concept is defined. With an interstate exit at each end of the study area, the BOA will be anchored by neighborhood and highway-oriented commercial centers. Taking advantage of growing traffic volumes, these areas will offer restaurant, retail, accommodations and services that can serve both the local population as well as the many travelers who move throughout the area. These developments should follow good design standards, fronting the street, limiting curb cuts with coordinated access and orienting parking to the rear of the site.

The concept preserves existing residential neighborhoods in the boa, with the most significant population bound by High, Steuben and Chemung Streets in Painted post. This neighborhood is flanked by significant public parkland to the north and south, providing substantial sports and leisure recreation opportunities. The plan identifies locations to enhance pedestrian and recreational linkages, using bicycle lanes, sidewalks and trails to better integrate the residential population with the area's parks.

East of Steuben Street it is proposed that largely commercial and industrial land uses be transitioned into a new mixed-use neighborhood. This dense development pattern will build off of and strengthen the North Hamilton Street urban core, providing a mix of commercial space with townhouse and apartment living opportunities. This development will be pedestrian oriented and will occur as presently industrial lands slowly transition out of their present use.

The BOA will find its economic strength in its two major industrial and commercial/industrial flex space campuses. Located at Strategic Sites C and H as well as stretching from the current Dresser-Rand Plant, through the Hart Street Area to Storflex at Victory Highway, these areas will provide significant opportunity for employment growth in the BOA, functioning as the economic generator for the development of surrounding lands. The Future Land Use Concept is presented on the following page:

Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 22

Future Land Use Concept

This map was prepared for the Town of Erwin, the New York State Department of State and the New York State Department of Environmental Conservation with state funds provided through the Brownfield Opportunity Area program.

- Highway Commercial
- Mixed-Use
- Residential
- Industrial
- Commercial/Industrial Flex
- Community Service
- Parks & Recreation
- Primary Linkages
- Pedestrian & Recreational Linkages
- Strategic Sites

0 625 1,250 2,500 Feet

Southern Tier Central Regional Planning & Development Board

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HUNT ENGINEERS ARCHITECTS SURVEYORS

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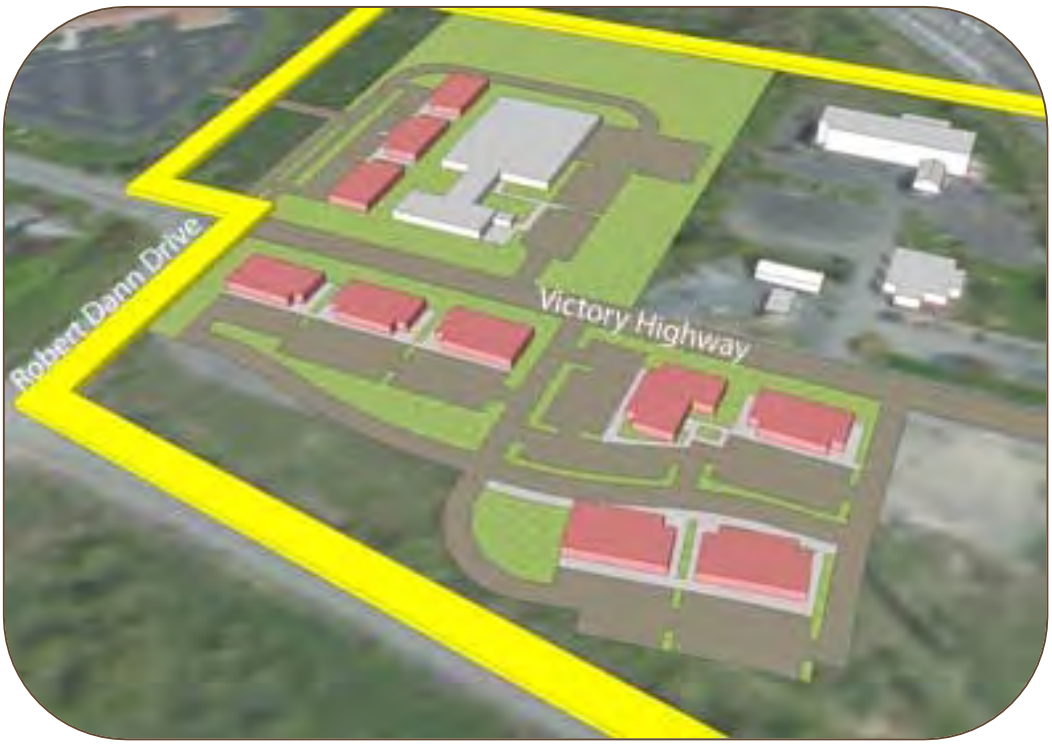
Urban Design Plan

The principle concept for the Urban Design Plan is to provide the physical conditions for the development of a diversified economy. The plan is organized with a systematic approach that unifies and strengthens the urban layout of the BOA project area. The future of the BOA will see new economic growth that sustainably revitalizes previously developed areas and supports social and community growth within each of the municipalities.

Commercial Retail

The Brownfield Opportunity Area, is anchored at the east and west by Interstate 86 interchanges. Likewise, lands adjacent to the interchanges is primed to take greater advantage of the heavy traffic volumes which serve as a natural base for commercial retail development.

Development to the west of Interchange 43, at the northwest area of the BOA, is designated as new 45,000 square feet of neighborhood commercial retail. The focus of this development will be to provide necessary retail and services the local population, as well as some traveler accommodations, such as a hotel for visitors to the Corning and Finger Lakes areas. Important physical improvements that have been incorporated into this site is a new drive into Strategic Site A off of Victory Highway at the intersection of Robert Dann Drive. This will provide the development safe, signalized access and also provide ancillary egress to the neighboring church property, presently experiencing traffic congestion moving in and out of its property.



Neighborhood Commercial Development at Strategic Sites A & B

Highway Commercial Development at Strategic Site G

These facilities will be complementary to highway retail development at the other end of the BOA, including Strategic Site G. This area's strategic location along Pulteney Street, between Exit 45 and the Corning Museum of Glass, provides an opportunity to capture the tourism market with national restaurant and some retail opportunities.

The development of this site is designed to be more respectful of the urban nature of the Village, bringing the built environment up to Pulteney Street and locating parking facilities to the interior of the development sites via a new connector street within the site. These structures may also be developed as 27,000 square feet of urban commercial office buildings, expanding local facilities for a growing service industry.

Mixed-Use & Townhouse Infill Development at Strategic Sites E & F

Commercial Mixed-Use

A measure of success for the Brownfield Opportunity Area will be a strengthened downtown core along and adjacent to Hamilton Street. This area is presently the vibrant corridor of the BOA, with industry, offices, restaurants, retail and parks space. A pedestrian-friendly scale and layout contributes an active and diverse streetscape. The Commercial Mixed-Use development area aims to strengthen these characteristics, further diversifying local land uses and expanding pedestrian connectivity. A new mid-block east-west roadway between W. High and Chemung Streets will be constructed from Steuben to Bronson Streets. This road will be the spine serving new commercial office and mixed-use development in the core of the BOA. Buildings will reflect existing development patterns, with a series of "courts" centering new development nodes. T his development has a potential of up to 300,000 mixed-use space and 48 1,000 square foot townhomes.

Walkable Urban Infill & Vistas

The new street will feature strong multimodal and pedestrian amenities, branching off of Hamilton Street, including sidewalks, landscaping and bicycle lanes. A strictly pedestrian connector will extend the new street from Steuben to Charles Street, terminating at the historic school building, serving as a visual and community anchor.

Industrial & Flex

Surrounding the new Commercial Mixed-Use are opportunities to continue the BOA legacy of industry and manufacturing. A n industrial development corridor will stretch from one of the BOA to the other, centered around Hamilton Street and Hodgman Park. The southern end of the corridor, below the present Dresser Rand facilities, will be devoted to new industrial development. E xisting pockets of residential development should be land-banked to create larger development sites for future industrial growth. Strategic Site C, the former Foundry site, will provide for more flex space than can accommodate a mix of 350,000 square feet of industrial and office development.

This area will be accessed by an upgraded W. Water Street through the site, with a p ossible connecting bridge at the northwest corner of Site C, linking into the northern section of Water Street and Victory Highway. T he central location of the industrial corridor will provide similar support for commercial development in the downtown core, similar to the benefits experienced in the Village from the presence of Dresser Rand.

Industrial/Flex-Space Campus at Strategic Site C

Residential, Parks & Open Space

The Urban Design Plan aims to maintain the existing residential development found throughout the BOA. The former school building on Charles Street, Strategic Site D, provides an opportunity for a new residential anchor for the BOA as market-rate apartments. Residences in the BOA will be enhanced through new quality of life developments. The existing multi-use trail system will be expanded to provide better linkages between the residential base, the school campus, Craig Park and Hodgman Park.

Pedestrian access along core roadways within the downtown will be enhanced, connecting residents to employment, commercial and retail development. Building upon the existing quality of life amenities in the BOA, providing a great place to live and raise a family, will be essential to attracting new companies and sparking new economic growth.

Developing Infrastructure for a vibrant, healthy walkable live-work community

Erwin / Painted Post / Riverside

Brownfield Opportunity Area

2012

Figure 23

Urban Design Plan

- Industrial/Flex Space Development
- Commercial/Retail Development
- Residential Townhouse Development
- Mixed-Use Infill
- Existing Structures

New 4-way Access at Robert Dann Dr.

41,500 s.f. Neighborhood

350,000 s.f. Industrial

48 Townhouse Units - 1,000 s.f./ea

300,000 s.f. Mixed-Use Infill

200,000 s.f. Industrial

27,000 s.f. Highway Retail

Painted Post Water Project

W. Water Street Bridge

Aerial view of potential W. Water St. Bridge

View from I-86 of potential W. Water St. Bridge

Adaptive Reuse - Senior Housing

Pedestrian & Public Space Enhancements

Recreational Connectivity

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IMPLEMENTATION

This section discusses the methodology for moving forward and implementing the E/PP/R BOA Preliminary Step 2 Nomination Study. The central tool to this section is an Implementation Matrix, which identifies the plan's recommendations and provides directives of who is responsible for each item, its timeframe and a potential cost.

Implementation Guidelines

As the project communities seeks to implement the actions necessary to move forward the redevelopment of the E/PP/R BOA, a set of guidelines should be followed, designed to provide a framework for addressing the recommended actions in the plan, as well as actions that are proposed and implemented in the future:

Guideline 1 The appropriate boards and commissions should be assigned the responsibility of developing strategies and actions to implement the BOA Program

Guideline 2 The municipalities should support thorough environmental review under the State Environmental Quality Review Act in considering new development proposals

Guideline 3 The Town should expedite review and approval of development proposals deemed consistent with the recommendations of the Nomination Study as well as local comprehensive planning

Implementation Matrix

As Erwin, Painted Post and Riverside move forward into redevelopment of the BOA program as a guiding document for the future, the most important phase becomes the actual implementation. I t is essential to establish strategies to ensure that implementation occurs and the vision developed in the Nomination Study comes to life.

The implementation matrix on the following page is a series of action-oriented tactics to bring the plan into reality. The Strategy is organized in a way that is straightforward, useful and comprehensive as the plan itself. F or each action, a timeframe and, if available, an estimated cost are given for completing the item. Responsibility is assigned for each recommendation, designating the parties that must carry out the action.

Table 43: Implementation Matrix

	Action Item	Responsible Party	Potential Cost	Timeframe
1	Municipal acceptance of the Nomination Study and Urban Design Plan	TE, VPP, VR	N/A	Immediate
2	Complete SEQRA	STC	N/A	Immediate
3	Prepare Application for Project Advancement	STC	N/A	Immediate
4	Coordinated updates to zoning law for all three municipalities	STC, TE, VPP, VR	$5,000 - $10,000	0 - 3 years
5	Draft a sample RFP to solicit potential developers for redevelopment of BOA properties	STC	N/A	Immediate
6	Seek funding for detailed design of the Strategic Site C/W. Water Street access bridge	STC, TRD, SCIDA, VPP	N/A	0 - 3 years
7	Seek funding for streetscape improvements of North Hamilton Street and Victory Highway/Pulteney Street	TE, VPP, VR	N/A	5+ years
8	Install actuated traffic signal at the intersection of Route 415 and Bronson Street	NYS DOT	$40,000 - $80,000	3 - 5 years
9	Install a traffic signal at the intersection of Taylor Street and Route 415, coordinated with adjacent signals	NYS DOT	$40,000 - $80,000	3 - 5 years
10	Install a traffic signal at the intersection of Buffalo Street and East Water Street	NYS DOT	$40,000 - $80,000	3 - 5 years
11	Coordinate a plan for shared municipal services	TE, VPP, VR	$5,000 - $15,000	3 - 5 years
12	Form a partnership with private developer for the redevleopment of 165 Charles Street	VPP	N/A	0 - 3 years
13	Pursue asbestos abatement funding for 165 Charles Street	TRD, SCIDA, VPP, Private Developer	N/A	0 - 3 years
14	Collaborate with municipalities and economic development organizations to pursue acquisition of properties within the BOA	TRD, SCIDA, TE, VPP, VR	N/A	0 - 3 years

Table 44: Implementation Matrix (cont.)

	Action Item	Responsible Party	Potential Cost	Timeframe
15	Conduct a Phase I Environmental Assessment for Strategic Site H	VPP, TE, Property Owner, Developer	Step 3	0 - 3 years
16	Conduct a Phase I Environmental Assessment for 511 East High Street	VR, Property Owner, Developer	Step 3	0 - 3 years
17	Conduct a Phase II Environmental Assessment for Strategic Site A	TE, Property Owner, Developer	Step 3	0 - 3 years
18	Conduct a Phase II Environmental Assessment for Strategic Site B	TE, Property Owner, Developer	Step 3	0 - 3 years
19	Conduct a Phase II Environmental Assessment for Strategic Site E	VPP, VR, Property Owner, Developer	Step 3	0 - 3 years
20	Conduct a Phase II Environmental Assessment for Strategic Site F	VPP, Property Owner, Developer	Step 3	0 - 3 years
21	Conduct a Phase II Environmental Assessment for Strategic Site G	VR, Property Owner, Developer	Step 3	0 - 3 years
22	Conduct a Phase II Environmental Assessment for Strategic Site H	VPP, TE, Property Owner, Developer	Step 3	0 - 3 years
23	Conduct a Phase II Environmental Assessment for 511 East High Street	VR, Property Owner, Developer	Step 3	0 - 3 years
24	Work with regional economic development organizations to pursue development of sectors recommended in the business retention and expansion strategy	STC, TRD, SCIDA	N/A	0 - 3 years
25	Develop pedestrian and multi-modal linkages according to the Urban Design Plan	SC, VPP	$250,000 - $500,000	5+ years
26	Develop low-cost beautification initiatives in each municipality according to recommendations	TE, VPP, VR	$500 - $5,000	3 - 5 years
27	Develop materials to market the BOA to prospective developers	TRD, SCIDA, STC	N/A	Immediate

PRELIMINARY FUNDING MATRIX

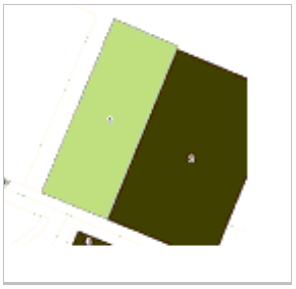
Given the challenging conditions facing brownfields and adjacent areas due to contamination, aging infrastructure and inadequate access, development must often overcome financial obstacles often not faced by other locations. As a result, brownfield developments frequently require financial and technical assistance to address remediation, infrastructure and access issues. The following matrix provides a preliminary inventory of assistance sources available to brownfield projects:

Table 45: Financial Assistance Matrix

Source		Type of Assistance	Scope	Eligible Applicants
1	Environmental Protection Fund	Grant Funding	planning, design, feasibility studies, and construction projects	Municipalities
2	EPA Brownfields Assessment Grant	Grant Funding	inventories, planning, environmental assessments,	State, Municipalities
3	EPA Revolving Loan Fund	Grant Funding	and community outreach.	State, Municipalities
4	EPA Brownfields Cleanup Grant	Grant Funding	Remediation Activities	State, Municipalities
5	Advanced Manufacturing Jobs and Innovation Accelerator Challenge	Grant Funding	Funding for programs aimed at generating advanced manufacturing jobs	State, Municipalities, Non-Profits, Colleges
6	EPA Environmental Workforce Development and Job Training grant	Grant Funding	Workforce development & job training	State, Municipalities, Non-Profits, Development Corporations
7	NYS Site Preparation Tax Credit	Tax Credit	Site Preparation	Property Owner, Developer
8	On-site Groundwater Remediation Credit	Tax Credit	Remediation Activities	Property Owner, Developer
9	Environmental Restoration Program	Grant Funding	Investigation & Remediation	Municipalities
10	Inactive Hazardous Waste Disposal Site Program (Superfund)	Grant Funding	identifying, investigating and cleaning up sites where consequential amounts of hazardous waste may exist	Municipalities
11	HUD Neighborhood Stabilization Program	Grant Funding	Purchase, demolition and landbanking of abandoned or foreclosed properties	Municipalities
12	HUD Neighborhood Initiative Grant	Grant Funding	Economic Stimulation Activities	Municipalities
13	Community Development Block Grant Entitlement Grants	Grant Funding	Training, Technical Assistance, Capital Projects, Home Rehabilitation	Municipalities
14	Communities at Work Fund	Grant Funding	Community and Economic Development, Job Creation, Small Business and Microenterprise Dev.	Non-Profits
15	US Dept. of Commerce Economic Development Administration	Grant Funding	Community and Economic Development, Job Creation	Non-Profits

Appendix: Parcel Inventory

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Vacant		
280.00-01-056.00	**Public\Private** Private		
Owner Nam	Gibralter Mgmt	**BOA ID**	1
Address	130		
Street	Victory	**Acres**	3.155
Town\Villa	Erwin	**Zoning**	HIGHWAY BUSINESS / AGRICULTURAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This property is vacant. It has never been developed.
Property Description Describe, the physical characteristics of the property, buildings, and	This is 3.099 acres of flat, open land. The property is located at the "T" intersection of Robert Dann Drive with NYS Route 415 (Victory Highway). There is a traffic signal in place. The Town of Erwin is installing a new water line along Victory Highway creating a new water district. There is a natural gas line in front of the property. There are 225 feet of road frontage along Route 415. Sale of property: Erwin to Baker & Grossman on 7/8/75 then Baker & Grossman to GBR Three Ac LLC on 1/1/95.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	The property has been farmland from 1800's to 1970's. No contamination is expected to be found.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID 280.00-01-012.00

Type Brownfield

Public\Private Private

Owner Nam Hakes

Address 124

Street Victory

Town\Villa Erwin

BOA ID 2

Acres 5.03

Zoning HIGHWAY BUSINESS

Forclosure List ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

This is a partially used commercial property. Some pavement remains on the parcel.

Property Description

Describe, the physical characteristics of the property, buildings, and

5.00 acres - flat land. The Town of Erwin is installing a new water district in 2009 that will access the property.

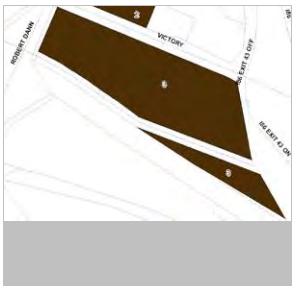
Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Farmland 1800's-1960's, site of Jim Fuller Chevrolet, Gordon Hakes Car Mart & RV Sales, Birnie Transportation School Bus Garage. Check for contamination issues - possible oil storage tank. Gordon Hakes did not maintain use of property.

Property flooded in June 1972.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Brownfield		
280.00-01-017.10	**Public\Private** Private		
Owner Nam	Hakes	**BOA ID**	3
Address	125	**Acres**	8.563
Street	Victory		
Town\Villa	Erwin	**Zoning**	HIGHWAY BUSINESS HIGHWAY BUSINESS

Forclosure List ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

this is vacant undeveloped property.

Property Description

Describe, the physical characteristics of the property, buildings, and

The parcel contains 9.17 acres of flat land. 7.47 acres are useable acres that appear to be out of the floodplain.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Check for contamination issues. First address from Erwin Realty sub-division of 1926, 117 Victory Highway, 119 Victory Highway & 139 Victory Highway. Purchased by Laura "Betty" Merrick 117 Victory Highway 7/5/46,

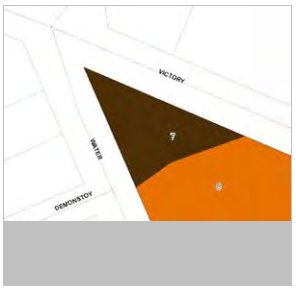
Purchased by Laura "Betty" Merrick 119 Victory Highway 1936.(?) Purchased by Laura "Betty" Merrick 7/5/1946. All of 117 Victory Highway was taken by the State of New York for Route 15 (now I-86) on 6/23/59.

Esso Gas Station & garage removed. Then 1967 Balance of 119 Victory Highway taken by NYS 1967. Restaurant building removed same year. Property address 125-151 Victory now under one parcel Town of Erwin tax listing. Sold to Dann Motel Corp 12/19/67

Flood June 1972. House & other buildings demolished 1973. Land only. Purchased by Gordon Hakes 3/19/79. Purchased by Victory Highway Holdings 1/24/2008.

Flood property - between railroad right of way and river. No buildings on this land. Doug

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Brownfield		
298.08-01-004.00	**Public\Private** Private		
Owner Nam	Jamison	**BOA ID**	7
Address	93	**Acres**	0.353
Street	Victory Hwy		
Town\Villa	Erwin	**Zoning**	HIGHWAY BUSINESS

Forclosure List ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

Luckys Auto Sales paved lot.

Property Description

Describe, the physical characteristics of the property, buildings, and

The building is a former gas station located on a paved lot with a curb-cut on Route 415 and access to West Water Street.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Old address is 600 West Water Street. On 1/12/27 Erwin sold to Robert Reed - built the original "Rambler's Rest." On 4/5/46 Reed sold to Robert Johnson and continued the "Rambler's Rest." On 3/5/62 Johnson sold to Lloyd Hooker - subdivided the property.

On 11/14/66 Hooker sold to Gulf Oil Corp. 11/29/84 Golf sold to George Jamison. 4/3/2002 Joint title with Mary Jamison. Property now changed address from 600 W. Water Street to 93 Victory Highway. Golf removed all gas tanks.

Owner says tanks were removed in 1981. Jamison constructed the present building on 9/30/85, with addition 2/2/87. Property had been used as Jamison Marine (boat repair & sales). Leased building and land for used car dealership,

car detailing and now vacant.Odd shaped lot, with possible contamination issues. Just off I-86 @ Exit #43. The Town of Erwin is building a new water line in 2009 which will serve

Assessment completed in 1984.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
298.08-01-020.00	**Public\Private** Private		
Owner Nam	McKay	**BOA ID**	8
Address	87		
Street	Victory Hwy	**Acres**	1.874
Town\Villa	Erwin	**Zoning**	RESIDENTIAL 7200 S.F. LOTS / RESIDENTIAL 7200 S.F. LOTS

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is under-utilized commercial property.
Property Description Describe, the physical characteristics of the property, buildings, and	1.87 Acres. The property contains a restaurant, sporting goods, barber shop, house, and open land.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Old address - 584-596 West Water Street, 1/12/27-Erwin sold to Robert Reed-built the original "Rambler's Rest", 4/5/46-Reed sold to Robert Johnson-continued the "Rambler's Rest", 3/5/62-Johnson sold to Lloyd Hooker, 11/14/66 Hooker sold to Robert Congdon, 3/7/96. Congdon sold to Michael McKay (son-in-law), property now changed address from West Water Street to 87 Victory Highway. Car wash building was converted to a sporting goods business. A mobile home park was closed and removed in 1987. This property with Victory Highway frontage has long been a commercial site. It is possibly still available, as it was on the real estate market. Just off I-86 @ Exit #43. Town of Erwin is building a new water line in 2009 which will serve the property.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type**	Brownfield			
298.08-01-017.00	**Public\Private**	Private			
Owner Nam	Firestone Tire		**BOA ID**	9	
Address	100		**Acres**	0.648	
Street	Victory				
Town\Villa	Erwin		**Zoning**	HIGHWAY BUSINESS	

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The site is developed as the Firestone Store, but there may be sufficient land for expansion or a higher intensity use; thus, it is considered under-utilized.
Property Description Describe, the physical characteristics of the property, buildings, and	.65 Acres. There is a building with 210 x 65 lot. The building contains hydraulic lifts, oil changing equipment and similar automotive repair fixtures.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	The property was farmland from 1800's to 1970's. Purchased by Robert Baker in 1973. Firestone built in 1974. Check for contamination issues - possible oil storage tank. Great location. Just of I-86 Exit #43. Town of Erwin is installing a new water line along Victory Highway to be completed in 2009 which will serve this property..

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize				
298.08-01-021.10	**Public\Private** Private				
Owner Nam	Moses	**BOA ID**	10		
Address	83	**Acres**	0.429		
Street	Victory Hwy				
Town\Villa	Erwin	**Zoning**	RESIDENTIAL 7200 S.F. LOTS	RESIDENTIAL 7200 S.F. LOTS	**Forclosure List** ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	Underutilized commercial property
Property Description Describe, the physical characteristics of the property, buildings, and	.408 acres. A commercial garage is located on the property.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	1800's Farm land then it was open property. A small mobile home park located there (date?). Then an auto body & used car sales. Check for contamination. Subdivision of West Water Street, PP Development to Una Hills, Hills to David Anderson 6/29/45 Anderson to Edity Pierce 6/7/52, lower parcel sold to Mack Cass 4/28/53, Theresa Baum present owner-property and name changed - new married name. She also owns manufactured housing park, located at 5-19 Carapella Court. This property is off West Very narrow property. Small driveway off Victory Highway. The property has a well & septic system. In 2009, the Town of Erwin to install new water district. Parcel should be developed with McKay parcel for larger commercial use. According to owners, the site is currently served by the Erwin Water District.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Vacant				
298.08-01-024.10	**Public\Private** Private				
Owner Nam	YMCA	**BOA ID**	11		
Address	578	**Acres**	3.7		
Street	W Water				
Town\Villa	Erwin	**Zoning**	RESIDENTIAL 7200 S.F. LOTS	HIGHWAY BUSINESS	**Forclosure List** ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The property is vacant land with a building.
Property Description Describe, the physical characteristics of the property, buildings, and	Contains creeks and floodplain. A small paved portion at Victory Highway is built up out of the floodplain. A one-story concrete block building was built after 1975.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	William Thomas owns the following 576, 578, 580 W. Water St. 576 W. Water is open land, included in the sale from the Village of Painted Post 1/13/93. Land of basic no use. 578 W. Water is open land purchased from the Village of Painted Post 1/13/93 Key property owned by William Thomas is 580 W. Water St., Knights of Columbus purchased land 1/29/75 and built one story concrete block clubhouse, William Thomas purchased property with building 3/28/88, since then, property has had many tenants. This is a 6,000 square ft. building, Mr. Thomas is interested in selling all three (3) parcels. Area will be part of the 2009 water district project.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
298.12-01-018.00	**Public\Private** Public		
Owner Nam	Village	**BOA ID**	12
Address	450	**Acres**	45.76
Street	W Water		
Town\Villa	Painted Post	**Zoning**	INDUSTRIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	Underutilized old Foundry, not listed as brownfield. DEC studied/remediation completed. Village owned, rezoned 12/98 or 1/99 to medium density residential/professional office, On 8/1/2005 the property was deeded from IR to Painted Post Development. LLC
Property Description Describe, the physical characteristics of the property, buildings, and	Undeveloped 44.79 acres mostly bare with one small remaining tin building and a few trees. Topography is primarily flat. Cement floor remains. 1800 sq. ft. with large 5'X5' room contains sprinkler controls.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Prior Foundry owned by Ingersoll Rand and then Dresser Rand. A cast iron foundry and pattern shop with both indoor and outdoor casting storage. Originally operated with 2 coke fired furnaces and later converted to an electric furnace. Original use of the property was a mill pond and mill powered by water diverted from the nearby Cohocton River.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Brownfield		
299.09-02-015.12	**Public\Private** Public		
Owner Nam	CPP Historical	**BOA ID**	13
Address	277	**Acres**	2.104
Street	Steuben		
Town\Villa	Painted Post	**Zoning**	MEDIUM DENSITY RESIDENTIAL / URBAN CENTER RESIDENTIAL

Forclosure List ○ Yes

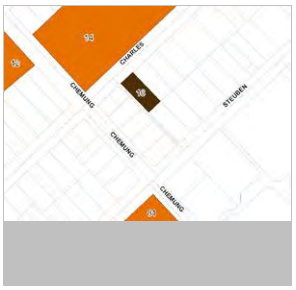
Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The property is a potential Brownfield. It is a park with an active museum and bike path, one story wooden building - former railroad station.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 2.10 acres. There is currently one building on property with attached paved area for parking and a bike path which runs through it. The property is landscaped with grass and trees.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Town of Erwin Depot Museum - currently. Prior railroad station. Prior to 1972 flood ,this property was commercial. It contained a diner and an enterprise that sold coal and building supplies along with a block ice machine. Potential contamination from railroad activities and former coal yard.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize				
299.13-01-026.00	**Public\Private** Public				
Owner Nam	CPP	**BOA ID**	14		
Address	165	**Acres**	4.379		
Street	Charles St				
Town\Villa	Painted Post	**Zoning**	URBAN CENTER RESIDENTIAL	**Forclosure List**	○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The property is underutilized because the current use is not developed to full commercial tax-paying potential. Actively used as school district administration office complex, warehouse and building and grounds shop.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 4.3 acres of grass and paved area for parking, a few trees and bushes. The three story building is used for the main building with a single story wing addition. There are two parking lots.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Currently used as school district office complex. Former Painted Post Middle School. Originally Painted Post High School. Prior to 1867 - open land.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Brownfield		
299.13-01-035.00	**Public\Private** Private		
Owner Nam	Winters	**BOA ID**	16
Address	214-216	**Acres**	0.192
Street	Charles St		
Town\Villa	Painted Post	**Zoning**	URBAN CENTER RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The property is considered a Brownfield. Currently it is a two-family residence fully occupied.
Property Description Describe, the physical characteristics of the property, buildings, and	.19 Acre Lot contains land and building. Lot size is 54.98' x 150.34'. The two-story building has anh attached garage, upper screened porch and a carport.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	It is a two-family residence. Formerly, it was a mom & pop neighborhood store with family dwelling upstairs. Kerosene was on product sold here for use in home heating. Potential undetermined contamination.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.13-03-003.00	**Public\Private** Private		
Owner Nam	Krog	**BOA ID**	18
Address	222	**Acres**	1.943
Street	N Hamilton St		
Town\Villa	Painted Post	**Zoning**	INDUSTRIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This site is an underutilized commercial/industrial use.
Property Description Describe, the physical characteristics of the property, buildings, and	The site is 1.96 acres with a two-story "tin" building built in 1966 and parking lot and landscaping. It has access to Chemung Street.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	The building was originally owned by Dresser Rand and used as offices. Currently it is vacant, for sale and classified in the Empire Zone. Prior to construction of the office complex, this was residential property

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID 299.13-03-011.10

Type Brownfield

Public\Private Private

Owner Nam Krystof

Address 150

Street E High St

Town\Villa Painted Post

BOA ID 19

Acres 0.190

Zoning BUSINESS

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	Thissite is a potential brownfield. The commercial building has a second floor residential use.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is .19 acres and contains land and a wood structure building on a 102 x 120 irregular lot with asphalt parking area. Direct access to East High Street via traffic signal.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Current use: The ground floor has a public Laundromat and upper level has two apartments. Originally, a gasoline station with service bay stood on this site. Kendall Gas Station was demolished 1968. Status of tanks is unknown.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Brownfield		
299.13-01-007.00	**Public\Private** Public		
Owner Nam	Village	**BOA ID**	20
Address	123-145	**Acres**	0.601
Street	W Water		
Town\Villa	Painted Post	**Zoning**	PLANNED COMMERCIAL DISTRICT

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This site is a potential Brownfield site. It is the Town of Erwin parking lot adjacent to Town Hall. It is paved with some landscaping.
Property Description Describe, the physical characteristics of the property, buildings, and	The lot size is .60 acres or 345' x 65'. There are no buildings on site. Site is paved with asphalt pavement and has access to West Water Street.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	The site has a history of commercial and residential uses. Originally, it was residential and business buildings. The Sinclair Gas Station was located there prior to 1946, then it became a residence. (Destroyed by 1972 flooding?)

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.13-05-049.00	**Public\Private** Private		
Owner Nam	Hull	**BOA ID**	21
Address	242		
Street	E High St	**Acres**	0.089
Town\Villa	Painted Post	**Zoning**	URBAN CENTER RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This property is developed as an apartment complex.
Property Description Describe, the physical characteristics of the property, buildings, and	The property is Apartment complex on 50 x 75 ft. lot.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Originally a "Red and White" grocery store on the first floor with residential area on the second floor. We are concerned that there may have been contamination while the property ws operating as the store. This is unverified at this time.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Vacant		
299.13-05-048.00	**Public\Private** Private		
Owner Nam	Hull	**BOA ID**	22
Address	239	**Acres**	0.108
Street	First St		
Town\Villa	Painted Post	**Zoning**	URBAN CENTER RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	Residential - vacant land
Property Description Describe, the physical characteristics of the property, buildings, and	Lot size is .11 acres or 50 x 90 ft. It is used for parking for 242 East High Street. The site is paved and accesses High Street (?)
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	History undocumented at this time.

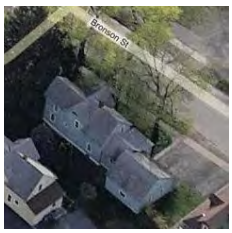
Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.13-05-009.00	**Public\Private** Private		
Owner Nam	Lillywhite	**BOA ID**	23
Address	325	**Acres**	0.173
Street	E High St		
Town\Villa	Painted Post	**Zoning**	URBAN CENTER RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This site is developed as a esidential site.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is .18 acres. A two-story single-family residence on a 50 x 145.49 lot which is grassed and has trees on it.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	No history of the residential house has been undertaken at this time..

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Underutilize		
299.13-05-025.00	**Public\Private** Private		
Owner Nam	Massi	**BOA ID**	24
Address	350	**Acres**	0.107
Street	E High St		
Town\Villa	Painted Post	**Zoning**	URBAN CENTER RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	Developed as a tenant house..
Property Description Describe, the physical characteristics of the property, buildings, and	The property contains a single-family house sitting on a 50 x 92 ft. lot with grass and trees. This house has an attached garage and an enclosed porch. The site is .11 acres.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Single family residence. No history has been undertaken at this time.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Brownfield		
299.13-05-023.00	**Public\Private** Private		
Owner Nam	Hakes	**BOA ID**	26
Address	410	**Acres**	0.070
Street	E High St		
Town\Villa	Painted Post	**Zoning**	URBAN CENTER RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The property is developed as a single family residence.
Property Description Describe, the physical characteristics of the property, buildings, and	The property contains a single-family residence on a 70 x 45 ft lot. There is a detached single garage, grass, trees and bushes on property. The parcel is .07 acres.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Groundwater contamination from Brownfield site #29 may be a concern.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID 299.13-05-021.00

Type Brownfield

Public\Private Private

Owner Nam Hakes

Address 218

Street Bronson St

Town\Villa Painted Post

BOA ID 29

Acres 1.599

Zoning INDUSTRIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The parcel is partially developed with one building.
Property Description Describe, the physical characteristics of the property, buildings, and	One out-building sits on 1.59 acres. the land is flat with very little vegetation and some paved and graveled areas. The parcel is located in both the Village of Painted Post and Village of Riverside. It has acces on High Street and Bronson Street.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	The parcel has had many uses over the years. It was once a scrap metal yard, then used for industrial storage, and finally it housed a used car mart which was destroyed in a fire. The property had been tied up in litigation. There is concern about potential contamination from these industrial/commercial uses.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	299.17-01-006.00	**Type**	Vacant
		Public\Private	Private
Owner Nam	Dresser Rand	**BOA ID**	31
Address		**Acres**	4.909
Street		**Zoning**	INDUSTRIAL
Town\Villa	Painted Post		

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This triangular lot has been vacant land since the 1972 flood.
Property Description Describe, the physical characteristics of the property, buildings, and	This parcel is 4.68 acres. It is grassed with some gravelled areas.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	No research has been done to date.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.17-01-026.00	**Public\Private** Private		
Owner Nam	Dresser Rand	**BOA ID**	32
Address		**Acres**	0.925
Street	W Side of Kane St		
Town\Villa	Painted Post	**Zoning**	INDUSTRIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The site is an underutilized commercial site.
Property Description Describe, the physical characteristics of the property, buildings, and	The site is flat and includes .94 acres used as an electrical sub-station with pavement, gravelled areas and some vegetation..
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	The site hosts a NYS Electric sub-station. No research on history has been conducted to date.

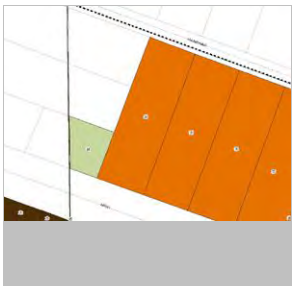
Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	299.17-01-024.00	**Type**	Underutilize
Public\Private	Public		
Owner Nam	Painted Post	**BOA ID**	33
Address	151	**Acres**	2.164
Street	Kane St	**Zoning**	INDUSTRIAL
Town\Villa	Painted Post		

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The site is a developed commercial site.
Property Description Describe, the physical characteristics of the property, buildings, and	The property is 2.15 acres of flat land with buildings, parking areas and lawn. It is accessed off Bryan and Hart Streets and is visible from Interstate 86..
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	The property was originally a farm. Currently, it is used as the village garage and wastewater treatment plant with a discharge to the Chemung River.

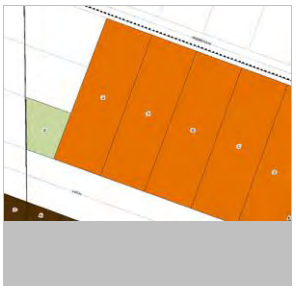
Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Underutilize				
299.14-01-023.00	**Public\Private** Private				
Owner Nam	Alteri	**BOA ID**	34		
Address	415	**Acres**	0.183		
Street	E High St				
Town\Villa	Riverside	**Zoning**	COMMERCIAL	**Forclosure List**	○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The site is an underutilized parcel of land which contains an active two-family tenant house in residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.18 acres (50 foot frontage x 152 foot depth) of flat land on High Street. The parcel contains old style house, with vinyl siding, built in 1927. There are shrubs in the front yard with large trees in the rear. The concrete sidewalk is along the road. It accesses an alley and has an unpaved driveway and 3-car garage in rear. No curb cuts. House connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Originally owned by P.P & Corning Emporium Co.. W. & E. Mose 12/8/1932. J. M. Edminster to M. Edminster 9/5/1942. L. E. & C. D. Wade to J. R. & A. S. Bastin 6/22/1965. M. Edminster to J. & A. Bastin 7/19/1965. J. R. & A. S. Bastin to A. A. & M. J. Alteri 5/26/1971. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID 299.14-01-024.00

Type Underutilize

Public\Private Private

Owner Nam Wilson

Address 503

Street E High St

Town\Villa Riverside

BOA ID 35

Acres 0.175

Zoning COMMERCIAL

Forclosure List ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

The site is an underutilized parcel of land that contains an active one-family house in residential area.

Property Description

Describe, the physical characteristics of the property, buildings, and

The parcel is 0.17 acres (50 foot frontage x 152foot depth) of flat land on High Street. Parcel contains old style house, with aluminum siding, built in 1900. Pine tree on left front side of property. Large tree on right front side of property.

A concrete sidewalk is along the road. The parcel has an alleyway, large trees, storage shed and parking in the rear. There are no curb cuts. The house connected to Village water and sewer.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Previous Owners: Painted Post Improvement Company to A. Allen 3/16/1896. A. Allen to W. Morse 12/17/1898. J. L. Morse & E. M. Luce to J. M. Wilson 10/28/1959.

J. M. Wilson to T. R. & J. C. Wilson 10/28/1959. J. C. Wilson to P. H. Wilson 8/29/1985. P. H. Wilson to L. D. & S. L. Wilson 5/4/1988.

No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.14-01-025.00	**Public\Private** Private		
Owner Nam	Wallington	**BOA ID**	36
Address	505		
Street	E High St	**Acres**	0.182
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is an underutilized parcel of land that contains an active one-family house in residential area
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.18 acres (50 foot frontage x 152 foot depth) on flat land on High Street. Parcel contains old style house, with aluminum siding, built in 1910. A concrete sidewalk is along the road. An alley, Large trees, storage shed and parking are in rear of property. There are no curb cuts. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous owners: Painted Post/Corning Improvement Co. to B. E. Starr (no date). B. E. Starr to H. L. & J. C. Starr 8/22/1927. H. L. & J. C. Starr to V. & M. Dillion 5/11/1950.V. & M. Dillion to M. Martin (no date). M. Martin to K. K. Loudenslager 4/19/2002. K. Loudenslager to (?) Wallington 2/2005. (?) Wallington to G. Wells 9/2006. No contamination is suspected.

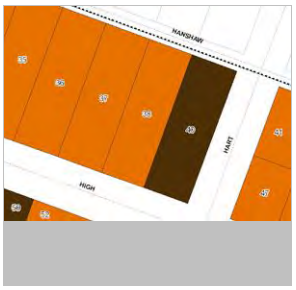
Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.14-01-026.00	**Public\Private** Private		
Owner Nam	Reagan	**BOA ID**	37
Address	507		
Street	E High St	**Acres**	0.181
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is an underutilized parcel of land that contains an active one-family house in a residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.18 acres (50 foot frontage x 152 foot depth) on flat land on High Street. The parcel contains an old style house, with wood siding, built in 1900. There are large tree on the right and left front side of house. A concrete sidewalk is along the road. An alleyway, large trees, two-car garage and parking are located in the rear of the property. There are no curb cuts. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous owners: Lot # 48 of Painted Post/Corning Improvement Co. to S. Sorenson (no date listed). S. Sorenson (on his death) to H. C. Sorenson, M. S. McChesney & M. S. Tuma 2/10/1938. H. C. Sorenson, M. S. McChesney & M. S. Tuma to L. & B. McChesney 4/26/1940. L. & B. McChesney 1940-1991. B. McChesney to B. P. Reagan 1991. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

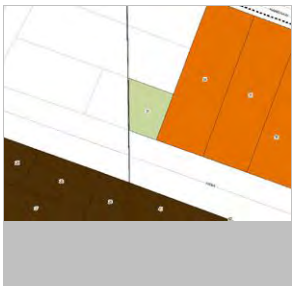


Tax Parcel ID	**Type** Underutilize		
299.14-01-027.00	**Public\Private** Private		
Owner Nam	HUD	**BOA ID**	38
Address	509		
Street	E High St	**Acres**	0.175
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is an underutilized parcel of land that containsan an active one-family house in residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.18 acres of flat land on High Street. The parcel contains an old style house with wood siding, built in 1900. Small trees grow on the right front side house. Concrete sidewalk is along the road. An alleyway, large trees, storage shed and unpaved driveway are locatd in the rear of the property. There are no curb cuts. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous owners: Corning Improvement Co. to H. F. & R. W. Spear (no date listed). H. F. Spear & R. W. Spear to R. W. & M. H. Spear 9/27/1952. R. H. Spear to A. T. & T. M. Cross 8/21/1991 to 8/2005. Aurora Loan 8/2005. HUD 8/2005. HUD to D. E. Kapral 5/2006. Possible contamination – parcel on right side contained underground gas tanks.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Vacant		
299.14-01-022.00	**Public\Private** Private		
Owner Nam	VanZile	**BOA ID**	39
Address	413		
Street	E High St	**Acres**	0.046
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	Pull parcel from Brownfield Grant Program.
Property Description Describe, the physical characteristics of the property, buildings, and	
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Brownfield		
299.14-01-028.00	**Public\Private** Private		
Owner Nam	JMK 235 Inc	**BOA ID**	40
Address	511		
Street	E High St	**Acres**	0.184
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The parcel is a Brownfield. It contains an active auto business in residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.18 acres (50 foot frontage x 152 foot depth)of flat land on High Street and Hart Street. The parcel contains a building, which houses a small office, sales area and garage area with three bays for car repair. The building was built in 1958, sits on the corner of two streets, and has an alleyway in the rear. It includes a blacktop parking lot and concrete sidewalk in front. It has an unpaved parking area in rear. There are no curb cuts on High Street. There are no curbs on Hart Street. The building is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous owners: Subdivision of Painted Post-Corning Improvement Co. H. Clark to F. R. Aulls 2/1924. F. R. Aulls to W. H. Morse 2/8/1924. W. H. Morse to L. H. Morse 3/11/1955. L. H. Morse & J. L. Morse to R. Alderman 6/2/1959. R. Alderman to M. S. Alderman 3/17/1987. M. S. Alderman to J. Kapral 1/1992. J. Kapral to J. & R. Savino 1/1992. J. &. R. Savino to JMK 235 Inc. 8/1997. The site is most recently known as Briggs Auto Service. Contamination due to underground gas tanks is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.14-03-007.00	**Public\Private** Private		
Owner Nam	Keenly	**BOA ID**	41
Address	12	**Acres**	0.092
Street	Hart St		
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The parcel is an underutilized parcel of land that contains an active one-family house in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	This site is 0.09 acres (50 foot frontage x 76 foot depth) of flat land on Hanshaw Street (side street) off Hart Street. Land contains old style house, with alum/vinyl siding, built in 1920. The concrete sidewalk is along the road. An Alleyway and shed are on the side of the house. The parcel has a shared driveway. There are no curbs. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous owners: Corning Improvement Co. to C. E. & N. M. Parker 9/4/1934. C. E. & N. M. Parker to Corning Savings & Loan 9/4/1934 Corning Savings & Loan to A. W. Payne 10/6/1941. A. W. Payne to H. A. McConnell 3/30/1954. H. A. McConnell to I. B. & F. L. Kellogg 10/4/1957. I. B. Kellogg to J. A. Keenly & L. E. Bergstrom 6/5/1991. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.14-03-009.00	**Public\Private** Private		
Owner Nam	Anglehart	**BOA ID**	42
Address	515		
Street	E High St	**Acres**	0.351
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is an underutilized parcel of land that contains an active, one-family house in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.35 acres (100 foot frontage x 152 foot depth) on flat land on High Street. The land contains an old style house, with wood siding, built in 1895. The concrete sidewalk is along the road. An alleyway is in the rear. A wooden fence is constructed along the circumference of the back and side yards. There are curb cuts in the front yard. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous owners: Subdivision of Painted Post/Corning Emporium Co. Painted Post/Corning Improvement Co. to T. L. Smith 1/3/1898. K. Smith, P. Sears & B. B. Dickens (heirs to T. L. Smith) to A. B. & B. M. Anglehart 4/17/1947. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.14-03-010.00	**Public\Private** Private		
Owner Nam	Snyder	**BOA ID** 43	
Address	519	**Acres** 0.166	
Street	E High St		
Town\Villa	Riverside	**Zoning** COMMERCIAL	

Forclosure List ○ Yes

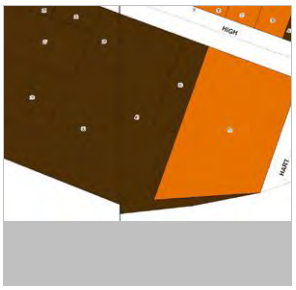
Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is an underutilized parcel of land that contains an active two-family tenant house in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.17 acres (50 foo frontage x 144 foot depth) on flat land on High Street. The parcel contains an old style house, with composition siding, built in 1900. A concrete sidewalk is along the road. There is a non-paved driveway in the front yard. There is an alleyway and storage shed in rear and a fenced-in rear yard. There is a curb cut in the front yard. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous owners: Sub-division of Painted Post & Corning Emporium Co.. Painted Post /Corning Improvement Co. to R. R. & P. M. Moss 10/21/1927. R. R. & P. M. Moss to M. L. Richards 7/31/1950. M. L. Richards to J. & J. Snyder 8/1965. J. Snyder to J. Snyder 3/1993. No contamination.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize				
299.14-03-011.00	**Public\Private** Private				
Owner Nam	Snyder	**BOA ID**	44		
Address	521	**Acres**	0.172		
Street	E High St				
Town\Villa	Riverside	**Zoning**	COMMERCIAL	**Forclosure List**	○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The parcel is underutilized. It containsan active two-family tenant house in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	The lot is 0.17 acres (50 foot frontage x 144 foot depth) of flat land on Route 415. The parcel contains an old style house, with wood siding, built in 1920. A concrete sidewalk is along the road. There is a Large oak tree in front. An alleyway and parkingare in the rear. There is a fenced-in area approx. 6' x 10' in the rear yard. There are no curb cuts. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Subdivision APP file. Painted Post/Corning Improvement Co. to R. M. Gridley 7/13/1900. R. M. & A. I. Gridley to C. Durkin 5/10/1911. M. E. Durkin (heir to C. Durkin) to D. & M. Bishop 5/2/1946. D. O. & M. D. Bishop to J. & J. Snyder 8/1965. J. Snyder to J. Snyder 12/14/1992. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

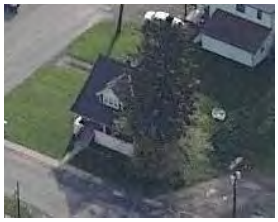


Tax Parcel ID	**Type** Brownfield		
299.18-01-011.00	**Public\Private** Private		
Owner Nam	Hakes	**BOA ID**	45
Address	412-414	**Acres**	0.577
Street	E High St		
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is a brownfield parcel of land in commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	This parcel is .58 acres of flat land on Route 415. It is unpaved with brush and graveled areass on the property. A concrete sidewalk is along the road. There are curb cuts. Village water and sewer are available.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Painted Post Improvement Co. to E. J. Benn (no date). E. J. Benn, C. M. Benn, A. Benn Markham Baker to G. Owens 10/8/1927. T. O. Poland to S. F. Owens 8/24/1938. S. Owens to T. Poland 3/28/1940. T. Poland to G. Owens 1/13/1941. G. C. Owens to A. G. & E. Pearson 6/23/1947. Mortgage held by C. Hooey, R. Hooey & R. Ahlgren 11/14/1966. Barker Properties 6/3/1969. G. Hakes 7/1969 to 2/2008. High Victory Holdings 2/2008. Contaminated. Parcel once contained a foundry/scrap yard, Barker Lumber Company, a gas station and Painted Post Car Mart.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	299.14-03-014.00	**Type**	Underutilize
Public\Private	Private		
Owner Nam	Nichols	**BOA ID**	46
Address	16	**Acres**	0.103
Street	John St		
Town\Villa	Riverside	**Zoning**	COMMERCIAL COMMERCIAL

Forclosure List ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

This is an underutilized parcel of land that contains an active one-family house in a residential area.

Property Description

Describe, the physical characteristics of the property, buildings, and

The lot is.10 acres (50 foot frontage x 80 foot depth) of flat land on the corner of two streets - John and Dennison Streets. The parcel contains an old style house with wood siding, built in 1930.

A concrete sidewalk is along road in front of the house. There is an unpaved driveway in rear. There are no curbs. The house is connected to Village water and sewer.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Subdivision Painted Post & Corning Emporium Co. J. Lyon & Wife to C. Arndly 10/1/1887. J. R. Middick to A. Clark 10/31/1930. E. Johnson 6/1945. E. Johnson to K. Nichols 7/1976.

No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	299.14-03-008.00	**Type**	Underutilize
		Public\Private	Private
Owner Nam	Williams	**BOA ID**	47
Address	513	**Acres**	0.086
Street	E High St		
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	Tis is an underutilized parcel of land that contains an active, one-family residence in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	This parcel is .09 acres (50 foo frontage x 76 foot depth) of flat land on corner of two streets - Hart and Route 415.. The parcel contains a store/photo studio that has been converted to a residence. The front of the building is on Route 415. The building has wood siding and was built in 1910. A concrete sidewalk is along the road in front of the house. The parcel shares a paved driveway in rear. There are no curb cuts. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Subdivision of Painted Post & Corning Emporium Co.. Painted Post & Corning Improvement Co. to Corning Savings & Loan & C. E. & N. M. Parker 9/4/1934. Corning Savings & Loan to C. E. & N. M. Parker 10/20/1942. F. L. Parker, E. M. Mattoon & J. M. Holmes 9/15/1958. F. L. & M. R. Parker to I. & F. Kellogg 7/16/1962. S. T. Burgett to N. L. Burgett Williams 7/9/1979 I. & F. Kellogg to I. Kellogg 2/21/1996. I. Kellogg to C. & N. Williams 2/21/1996. No known contamination. However, the property across the street (#40) has contamination from underground gas tanks.

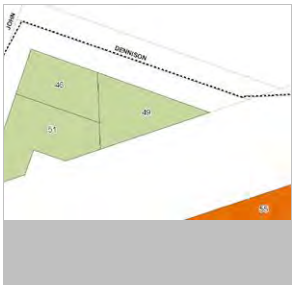
Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Brownfield		
299.14-03-012.00	**Public\Private** Private		
Owner Nam	Snyder	**BOA ID**	48
Address	523	**Acres**	0.163
Street	E High St		
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This parcel of land is a potential brownfield that contains active businesses on the lower level and a tenant apartment on the upper level in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	This parcel is 0.17 acres (50 foot frontage x 144 foot depth) of flat land on corner of John Street and Route 415. Front of building is on Route 415. Building has wood siding and was built in 1930. An alleyway is in the rear. A retail food business and game business are on the first floor. A rental apartment is on the second level and a propane gas tank storage buildingis in rear. A five to six car asphalt parking lois in front. There is minimal landscaping A concrete sidewalk is along the road in front of the building. There are no curbs on Route 415. There are no curbs on John Street. The building is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Painted Post & Corning Improvement Co. to W. Pepper 5/2/1914. W. Pepper to K. Durkin 6/6/1919. K. Durkin to L. Abbott 4/15/1927. L. L. & C. B. Abbott to Van Dyne Oil Co. 10/18/1930. Van Dyne Oil Co. to J. Snyder 2/23/1956. J. A. Snyder I to J. Snyder 3/22/1993. J. Synder to J. A. Synder II 10/2/2002 Possible contamination. The parcel contained a gas station at one time.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Underutilize				
299.14-03-015.00	**Public\Private** Private				
Owner Nam	Gasparri	**BOA ID**	49		
Address	4	**Acres**	0.117		
Street	Dennison St				
Town\Villa	Riverside	**Zoning**	COMMERCIAL	COMMERCIAL	**Forclosure List** ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

This underutilized parcel of land contains an active one-family house in a residential area.

Property Description

Describe, the physical characteristics of the property, buildings, and

The parcel is 0.26 acres (130.68 foot frontage x 86.14 foot depth) of flat land. The parcel contains an old style house, with alum./vinyl siding, built in 1924. It is the only house on the dead-end street. It has a 2 ½ car garage.

The parcel has an unpaved driveway. There are no curbs. The house is connected to Village water and sewer. There are trees in the rear yard along the railroad tracks.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

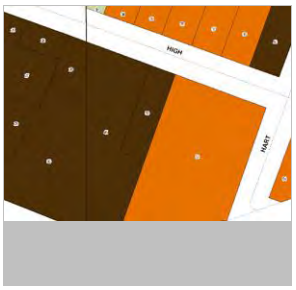
Subdivision Damoth Plot. Painted Post & Corning Improvement Co. to J. F. Barr 12/27/1921. M. M. & K. V. Gambell, M. E. & C. Barr (heirs to J. F Barr ?) to H. J. Barr 4/11/1934. H. J. & V. V. Barr to G. W. & M. I. Gould 4/20/1935.

G. W. & M I Gould to A. Jones 1/29/1937.A. & D. A. Jones to M. Seeley 11/19/1938. M. Seeley to N. Doud 7/22/1946. N. Doud to N. & E. Stanton 6/17/1949. Village of Riverside to N. C. Stanton 9/6/1955.

N. C. & E. E. Stanton to H. R. & I D. Johnson 1/21/1969. H. R. & I. D. Johnson to C. D. Watts 9/18/1972. C. D. Watts to J. A. & J. E. Snyder 9/21/1973. J. A. & J. E. Snyder to A. E. & J. E. Gasparri 6/26/1981.

No contamination.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Brownfield		
299.18-01-012.00	**Public\Private** Private		
Owner Nam	Hakes	**BOA ID**	50
Address		**Acres**	0.147
Street	E High St		
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is a brownfield parcel of land in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is .14 acres (40 foot frontage x 150 foot depth) of flat land on the corner of Route 415 and Bronson Street. It is unpaved, but has brush and graveled areas. A building is on the property. A concrete sidewalk is along Route 415. There is one curb cut on Route 415 and one on Bronson Street. Village water and sewer area available to the site.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Corning Improvement Co. to W. R. Devoe. W. R. & M. Devoe to M. Devoe 9/30/1942. M. Devoe to J. W. & M. Devoe 5/7/1952. J. & M Devoe to G. Hakes 11/6/1972. G. Hakes to High Victory Holdings 2/2008 Assumed to be contaminated. Parcel once contained a foundry/scrap yard, Barker Lumber Company, a gas station and Painted Post Car Mart.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Vacant		
299.14-03-013.00	**Public\Private** Private		
Owner Nam	Snyder	**BOA ID**	51
Address		**Acres**	0.153
Street	John St		
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is a vacant parcel in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 1.70 acres (109.635 foot frontage x 100 foot depth) of flat land on the corner of Route 415 & John Street. It is triangle shaped and unpaved. Trees area are along the railroad tracks on the side of the property. There are no curb cuts.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Painted Post/Corning Improvement Co. to A. & A. Olson 7/29/1903. A. & A. Olson to L. R. & M. Shelley 12/5/1930. J. L. Clark to L. R. & M. Shelley 10/21/1933. L. & M. Shelley to R. Shelley 7/7/1959. R. & E. C. Shelley to G. & S. Orso 9/8/1970. G. & S. Orso to J. & J. Snyder10/10/1972. J. Snyder I to J. Snyder 3/1993. J. Snyder to Christian Hope Center (no date). No known contamination. Gas station was located across street in 1940's/1950's

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Brownfield		
299.18-01-014.00	**Public\Private** Private		
Owner Nam	Bennett	**BOA ID**	52
Address	508	**Acres**	0.833
Street	E High St		
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is a suspected brownfield. The parcel contains an active dry cleaning business in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is .85 acres (160 foot frontage x 268.32 foot depth) of flat land on Route 415. The parcel contains a dry cleaning/laundry business. The building has wood siding and was built in 1989. There is an asphalt parking lot with mature landscaping. Trees and shrubs are along the railroad tracks at the rear of the building. A concrete sidewalk is along the road. There is a curb cut. The building is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: In '70-'71 Assessment Book this property was owned by C & E King. G. Hakes 4/29/1988. G. Hakes to Checo Inc. 3/7/1989. Checo Inc to Steuben County 6/12/1998. Steuben County to WJT Properties 6/23/1998. WJT Properties to P. A. Reppert 10/16/1998 P. A. Reppert to Bennett Enterprise 6/25/2001. Bennett Enterprise to R. Davis 2007(?). Contamination is suspected. Parcel once contained a foundry/scrap yard, Barker Lumber Company, a gas station, Painted Post Car Mart and different restaurants.

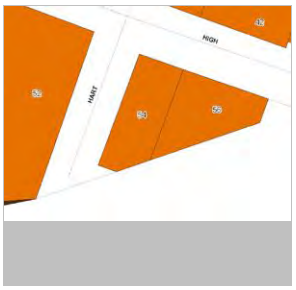
Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Vacant		
299.14-03-048.00	**Public\Private** Public		
Owner Nam	Village	**BOA ID**	53
Address	OFF		
Street	Pulteney St	**Acres**	0.284
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is vacant land in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	The lot is .28 acres of grassy flat land abutting the railroad. The parcel is located between the Storeflex employee parking lot and the Cutler Creek dike. It is landlocked by the DEC dike.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Painted Post Development Co. to J. A. & D. M. Cutler 7/30/1954. J. & D. Cutler to H. Cutler 1/1973. H. Cutler to Village of Riverside 1/1998. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Underutilize		
299.18-01-015.00	**Public\Private** Private		
Owner Nam	Knowles	**BOA ID**	54
Address	512	**Acres**	0.145
Street	E High St		
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

This underutilized parcel of land contains an active two-family house in a commercial area.

Property Description

Describe, the physical characteristics of the property, buildings, and

This parcel is 0.15 acres (50 foot frontage x 132 foot depth) of flat land on the corner of Route 415 and Hart Street. The parcel contains an old style house, with wood siding, built in 1900. There is a two-car garage and storage shed.

The lot has an unpaved driveway. A concrete sidewalk is along the road in front. There are no curb cuts on Route 415 or on Hart Street. The house is connected to Village water and sewer. Trees in the rear yard are along the railroad tracks.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Previous Owners: Painted Post/Corning Improvement Co. to D. Hollis 2/25/1903. H. W. Coles & C. Hollis Coles to L. M. H. Van Housen & C. Hollis Coles 10/27/1936. R. Knowles 12/ 1995. Steuben County 4/2002. (?)

No known contamination. Parcel across street (Parcel #52) once contained a foundry/scrap yard, gas station and lumber company.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.18-01-002.00	**Public\Private** Private		
Owner Nam	Storflex	**BOA ID**	55
Address	392	**Acres**	8.627
Street	Pulteney St		
Town\Villa	Riverside	**Zoning**	INDUSTRIAL / COMMERCIAL

Forclosure List ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

This underutilized parcel of land contains an active, manufacturing facility in industrial area.

Property Description

Describe, the physical characteristics of the property, buildings, and

The parcel is 8.73 acres of flat land on the corner of Route 415 and Hammel Street. It is near the Route 415 exit and I86 on/off ramps. The building houses offices, manufacturing, warehousing and shipping docks.

Batch feeder/ventilation system/dust collector system are on the top left side of the building. The building was built in 1942. Paved parking areas are located to the left of the building and across Route 415.

A concrete sidewalk is along the road in front of building and in front of parking area across the street. Curb cuts provide access to both parking areas. No curbs on Hammel Street. The facility is connected to Village water and sewer.
There is mature landscaping around the building. The parking lot is fenced.

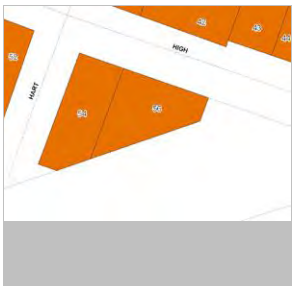
Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Previous Owners: Corning Glass Works (dates ?) Corning Glass Works to Weyerhauser Co. 1/1979. Weyerhauser Co. to Steuben IDA 4/1979-2/2004. Steuben IDA to R. Santell 2/2004 (?).

No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

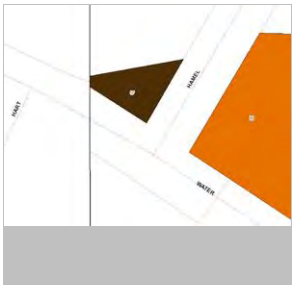


Tax Parcel ID	**Type**	Underutilize			
299.18-01-016.00	**Public\Private**	Private			
Owner Nam	Snyder		**BOA ID**	56	
Address	514-516		**Acres**	0.151	
Street	E High St				
Town\Villa	Riverside		**Zoning**	COMMERCIAL	

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This underutilized parcel of land contains an active two-family,tenant house in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.25 acres (100 foot frontage x 107.49 foot depth) of flat land on Route 415. The parcel contains an old style house, with wood siding, built in 1900. A concrete sidewalk is along the road. Trees are along the railroad tracks in back. The two-car garage, on left side, was used as a car repair shop by Luckner's Car Repair and Sparling's Car Repair. There is a curb cut. The house is connected to Village water and sewer, but the garage is not.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: C. J. & I. M. Van Housen to G. Pechenak (date ?). G. Pechneak to A. T. Pechenak 8/12/1949 (???). A. T. Pechenak to tenants E. J. & R. Bleichner 1/25/1937. E. J. & R. M. Bleichner to J. & J. Snyder 9/7/1972. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID 299.18-01-010.00

Type Brownfield

Public\Private Private

Owner Nam Warren

Address

Street Water St

Town\Villa Riverside

BOA ID 57

Acres 0.061

Zoning RESIDENTIAL

Forclosure List ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

This is a potential Brownfield site in a commercial area.

Property Description

Describe, the physical characteristics of the property, buildings, and

The parcel is .09 acres of triangle-shaped grassy, flat land. Railroad tracks are in the rear of the property. Three large trees, smaller trees, brush and undergrowth are on the property. There are no curb cuts.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Previous Owners: M. & H Frazer to E. Frazer 5/1/1899. E. Frazer to W. M. Bronner 9/14/1901. W. M. Bronner to C. A. & B. G. Lewis 6/15/1923.

M. Lewis, M. Lewis & G. McGoff (heirs to C. A. & B. G. Lewis ?) to B. L. Simpson 8/24/1944. B. L. Simpson to S. R. & L. Warren 5/25/1955.

No contamination is known, but is suspected..

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.18-02-047.00	**Public\Private** Private		
Owner Nam	Race	**BOA ID**	58
Address	27	**Acres**	0.107
Street	Balcom Ave		
Town\Villa	Riverside	**Zoning**	RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This underutilized parcel of land contains anactive one-family house in a residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.11 acres (40 foot frontage x 110 foot depth) of flat land on Balcom Street off Route 415. The parcel contains old style house, with wood siding, built in 1920. The lot includes a one-car garage and non-paved driveway. A concrete sidewalk is along road. There are no curbs. The house is connected to Village water and sewer. There is a concrete gutter between the roadway and parcel.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Balcom Farm Property. M. M. Balcom heirs to Nancy Townsend 7/29/1903. F. J. Townsend, & B. W. & A. T. Heermans to L. & E. Benjamin 5/8/1923. L. & E. Benjamin to P. & M. Race 9/1960. Originally farm land. No contamination is suspected

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Vacant		
299.18-02-046.00	**Public\Private** Private		
Owner Nam	Race	**BOA ID**	59
Address		**Acres**	0.173
Street	Balcom Ave		
Town\Villa	Riverside	**Zoning**	RESIDENTIAL

Forclosure List ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

This is vacant land in a residential area.

Property Description

Describe, the physical characteristics of the property, buildings, and

This parcel is .17 acres of grassy, flat land on Balcom Street off Route 415. There is heavy vegetation around circumference of the parcel. A concrete sidewalk is along the street. There are no curbs.

There is a concrete gutter between roadway and the parcel. Village water and sewer are available.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Previous Owners: Balcom Farm Property. M. M. Balcom heirs to N. Townsend 7/30/1903. F. J. Townsend to F. E. & G. D. Smith 12/1/1926. F. &. G. Smith to S. C. Smith 10/17/1934.

S. J. Smith to J. E. Smith 9/27/1941. J. E. Smith to W. A. & M. G. Smith 6/4/1943. M. G. Smith to P. J. & M. L. Race 6/28/1944. Parcel is for sale with Steuben Realty Co.

Originally farm land, the parcel has always been vacant. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Vacant		
299.18-02-045.00	**Public\Private** Private		
Owner Nam	Race	**BOA ID**	60
Address		**Acres**	0.181
Street	Balcom Ave		
Town\Villa	Riverside	**Zoning**	RESIDENTIAL

Forclosure List ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

Vacant land in residential area.

Property Description

Describe, the physical characteristics of the property, buildings, and

The parcel is .17 acres (60 foot frontage x 127.7 foot depth), of grassy, flat land. There is heavy vegetation around circumference of the parcel. A concrete sidewalk is along the street. There are no curbs.

A concrete gutter is betweenthe roadway and the parcel. Village water and sewer is available.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Previous Owners: Balcom Farm Property. H. E. & M. H. Keeley 8/26/1948. H. E. & M. H. Keenley to P. J. & M. L. Race 9/26/1948. M. L. Race to P. J. Race 9/21/1960. Parcel is for sale with Steuben Realty Co.

Originally farm land, the parcel has always been vacant. No contamination is suspected.

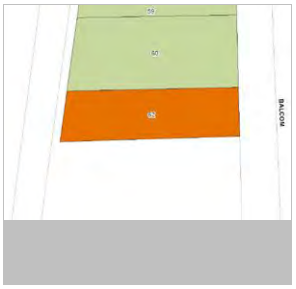
Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.18-02-056.00	**Public\Private** Private		
Owner Nam	Jelliff	**BOA ID**	61
Address	18		
Street	Balcom Ave	**Acres**	0.148
Town\Villa	Riverside	**Zoning**	RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This underutilized parcel of land contains an active, one-family house in a residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.14 acres (40 foot frontage x 155 foot depth) of flat land off Route 415 on Balcom Street. The parcel contains a ranch style house, with wood siding, built in 1930. The lot includes a shed and fenced-in back yard. a concrete sidewalk is along the road. There are no curbs. The house is connected to Village water and sewer. A concrete gutter exists between the roadway and parcel.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Balcom Farm Property. W. R. & Wife to C. Littlefield & F. Bierwiler 8/31/1926. C. Littlefield, F. Bierwiler & L. M. Bierwiler to H. M. Stevens 11/21/1928. C. L. Stevens & C. E. Stevens (heirs to H. M. Stevens to R. H. & M. E. Wolcott 11/25/1938. R. H. & M. E. Wolcott to D. &. E. Preston (no date). D. & E. Preston to R. Preston 5/1986. Originally farm land. No contamination.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Underutilize		
299.18-02-044.00	**Public\Private** Private		
Owner Nam	Johnson	**BOA ID**	62
Address	19	**Acres**	0.131
Street	Balcom Ave		
Town\Villa	Riverside	**Zoning**	RESIDENTIAL COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	Ths underutilized parcel of land containsan active, one-family house in a residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.13 acres (40 foot frontage x 135 foot depth) of flat land off Route 415 on Balcom Street. The parcel contains an old style house, with composition siding, built in 1920. There is a shed and fenced-in yard. A concrete sidewalk is along the road. There are no curbs. The house is connected to Village water and sewer. A concrete gutter exists between the roadway and parcel.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Balcom Farm Property. M. M. Balcom heirs to N. Townsend 7/29/1903. C. Woolever to G. M. Smith 4/21/1928. G. M. Smith to N. L. Bloom & S. F. Nelson 1/27/1960. N. L. Bloom & S, F. Nelson to E. & K. J. Overstrom 2/23/1962. E. H. & K. J. Overstrom to H. A & E. C. Barkley 6/10/1965 H. A. & E. C. Barkley to A. & S. Resvold 4/1973. A. & S. Resvold to J. & S. Bartholomay 5/1994. J. & S. Bartholomay 5/1994. HUD 8/2004. Originally farm land. No contamination.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
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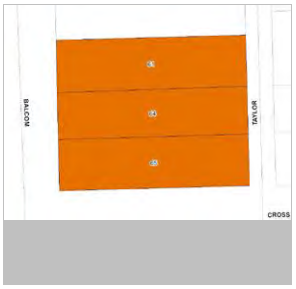
Tax Parcel ID	**Type** Brownfield		
299.18-01-060.00	**Public\Private** Private		
Owner Nam	New York State	**BOA ID**	63
Address		**Acres**	0.024
Street	Hart St	**Zoning**	RESIDENTIAL
Town\Villa	Riverside		

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is a potential Brownfield. It is currently vacant land in a residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is .02 acres of grassy, flat land. It is visible from I86. It is a portion of the old Imperial Club property. There are no curbs. Village water and sewer are available.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: R. H. Goff to W. H. Wilcox 7/12/1910. W. H. Wilcox to J. B. Jones & P. A. Payne 9/4/1917. J. B. & B. Jones to G. L. McIntyre 10/23/1920 Painted Post Development 12/1920. Ingersoll Rand Company 12/1959. Corning Community YMCA 8/2004. The parcel is currently landlocked by DEC flood control structures (??) No known contamination

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Underutilize		
299.18-02-057.00	**Public\Private** Private		
Owner Nam	Barney	**BOA ID**	64
Address	16	**Acres**	0.135
Street	Balcom Ave		
Town\Villa	Riverside	**Zoning**	RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This underutilized parcel of land contains an active one-family house in a residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.14 acres (40 foot frontage x 155 foot depth) of flat land off Route 415 on Balcom Street. The parcel contains a cottage style house, with wood siding, built in 1930. There are a shed and garage in the rear. A concrete sidewalk is along the road. There are no curbs. The house is connected to Village water and sewer. A concrete gutter exists between the roadway and parcel.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Balcom Farm Property. M. M. Balcom heirs to N. Townsend 7/29/1903. N. Townsend to H. & D. Ketchum 7/30/1903. H. & D. Ketchum to A. Morris 7/27/1944. A. E. & L. E. Morris to A. R. Thomas 3.23.1949. A. R. & K. O. Thomas to R. Carpenter 3/30/1970. R. L. & V. L. Carpenter to R. E. & H. L. Wright 10/2/975. R. E. & H. L. Wright to B. Barney (?) (no date). Originally farm land. No contamination is suspected.

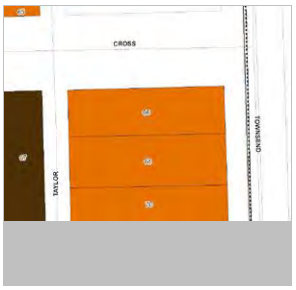
Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.18-02-058.00	**Public\Private** Private		
Owner Nam	Mayo	**BOA ID**	65
Address	14	**Acres**	0.148
Street	Balcom Ave		
Town\Villa	Riverside	**Zoning**	RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This underutilized parcel of land contains an active, one-family house in residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	This parcel is 0.14 acres (40 foot frontage x 155 foot depth) of flat land off Route 415 on Balcom Street. The parcel contains a ranch-style house, with wood siding, built in 1940. There is a partially fenced-in back yard. A concrete sidewalk is along the road. There are no curbs. The house is connected to Village water and sewer. A concrete gutter exists between the roadway and parcel.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Balcom Farm Property. W. Stiker 5/1974. W. & E. Stiker Trust 1/1992. W. & E. Stiker Trust 4/1995. Originally farm land. No contamination

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Underutilize				
299.18-02-067.00	**Public\Private** Private				
Owner Nam	Willow	**BOA ID**	66		
Address	20	**Acres**	0.111		
Street	Townsend Ave	**Zoning**	RESIDENTIAL	**Forclosure List**	○ Yes
Town\Villa	Riverside				

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The underutilized parcel of land contains an active, one-family house in residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	This parcel is 0.11 acres (40 foot frontage x 125 foot depth) of flat land off Route 415 on Taylor Street. The parcel contains an old style house, with brick exterior, built in 1920. The lot has a fenced-in back yard. The out-building in rear is in use. A concrete sidewalk is along the road. There are no curbs. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Balcom Farm Property. W. S. Mori ('70's) Originally farm land. No contamination is suspected.

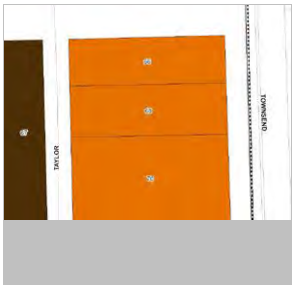
Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type**	Brownfield			
299.18-02-059.00	**Public\Private**	Private			
Owner Nam	Stiker		**BOA ID**	67	
Address	355				
Street	Pulteney St		**Acres**	1.042	
Town\Villa	Riverside		**Zoning**	COMMERCIAL	

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This parcel of land contains a building with active businesses and an active tenant house, in a commercial area and may be a brownfield..
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 1.00 acre of flat land on the corner of Route 415 and Balcom Avenue. The parcel contains three buildings. The large building houses the Subway Sub Shop, Car Quest Auto Parts and the rear half of the building is vacant. The largest portion of the building was built in 1965 and the sub shop was built in 2006. The smaller building houses A&A Motorcycle Repair Shop. This building is a service station-type building with a bay area. The building was built in 1965. The third building is old style house that contains 3-4 apartments. There 1 or 2 trees near house. Concrete sidewalk between large building and Route 415. Parking area in front and on left side of large building. Curb in front of parking area for large building only (on Rt. 415). No curbs near other buildings. The buildings and house are connected to village water/sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous site of Chilson Wilcox Auto Dealership, Stiker Used Car Sales and Sparling Gas/Service Station. Previous Owners: Balcom Farm Property. W. & E. Stiker Trust 1/1992. W. & E. Stiker Trust 4/1995. A. & S. Stiker 7/1999. Originally farm land. Contamination unknown but this is considered a potential Brownfield.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Underutilize		
299.18-02-066.00	**Public\Private** Private		
Owner Nam	Dunning	**BOA ID**	68
Address	18	**Acres**	0.120
Street	Townsend Ave	**Zoning**	RESIDENTIAL
Town\Villa	Riverside		

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This underutilized parcel of land contains an active, one-family house in a residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.12 acres (40 foot frontage x 125 foot depth) of flat land off Route 415 on Taylor Street. The parcel contains an old style house, with composition siding, built in 1900. There is a fenced-in yard. A concrete sidewalk is along the road. There are no curbs. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Balcom Farm Property. M. M. Balcom heirs to F. J. Townsend (? Date). F. J. Townsend to E. J. Jerry 9/21/1907. E. J. & M. J. Jerry to F. E. Aber 1/13/1927. F. E. & B. F. Aber to B.R. & M. E. Taylor 7/9/1947. R. B. & M. E. Taylor to M. I. Blackwell (? date). M. I. Blackwell to D. J. Drane 4/2002. D. J. Drane to G. W. Dunning (? – date ?). Originally farm land. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.18-01-049.00	**Public\Private** Private		
Owner Nam	Panosian	**BOA ID**	69
Address	360-372		
Street	Pulteney St	**Acres**	7.726
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This underutilized parcel of land contains three buildings with active businesses and two pieces of vacant land in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 7.75 acres of flat land on the corner of exit 45 off Interstate 86 & Route 415. The parcel contains three buildings. The large building is a shopping center/strip mall that houses Dollar's Worth Dollar Store, Rent-a-Center, AT&T Store, Original Italian Pizza Shop and one vacant store. This building was built in 1977. The second building is an auto drive-in type shop that houses Monro Muffler. This building was built in 1979. The third building is a dining type building that houses Friendly's Restaurant. This building was built in 1979. Each building has a parking lot with substantial parking in front of the strip mall. Two vacant pieces of land are located to the left of the strip mall. Large grassy area with 10 trees covers the front area between the parking lot and Route 415. Three curb cuts
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	All three existing buildings are connected to Village water and sewer. Two vacant pieces of property have access to Village water and sewer. Previous Owners: Village of Riverside Urban Renewal Agency (11/24/1976). VORURA to R. Panosian (? date). Property once contained houses. No contamination suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize				
299.18-02-065.00	**Public\Private** Private				
Owner Nam	Gilbert	**BOA ID**	70		
Address	16				
Street	Townsend Ave	**Acres**	0.222		
Town\Villa	Riverside	**Zoning**	RESIDENTIAL	**Forclosure List**	○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This underutilized parcel of land contains an active,one-family house in residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.23 acres (80 foot frontage x 125 foot depth) of flat land off Route 415 on Taylor Street. The parcel contains an old style house, with wood siding, built in 1910. It has a fenced-in yard. There ia one-car garage and shed with coal storage on the lot. A concrete sidewalk is along the road. There are no curbs. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Balcom Farm Property. M. & J. McKinney (1970's). A. & B. Blodgett 1/1995. J. Seitz & E. Goldman 6/2001. G. & K. Hatch 8/2002 Originally farm land. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
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Tax Parcel ID	**Type** Underutilize		
299.18-02-064.00	**Public\Private** Private		
Owner Nam	Dominick	**BOA ID**	71
Address	12	**Acres**	0.119
Street	Townsend Ave	**Zoning**	RESIDENTIAL
Town\Villa	Riverside	**Forclosure List**	○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This underutilized parcel of land contains an active one-family house in ra esidential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.11 acres (40foot frontage x 125 foot depth) of flat land off Route 415 on Taylor Street. The parcel contains an old style house, with wood siding, built in 1920. It has a fenced-n yard with a two-car garage. A concrete sidewalk is along the road. There are no curbs. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Balcom Farm Property. W. & E. Stiker Trust 1/1992. W. & E. Stiker 4/1995 Originally farm land. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.18-02-063.00	**Public\Private** Private		
Owner Nam	Hughey	**BOA ID**	72
Address	10	**Acres**	0.121
Street	Townsend Ave		
Town\Villa	Riverside	**Zoning**	RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This underutilized parcel of land contains an active one-family house in a residential area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 0.11 acres (40 foot frontage x 125 foot depth) of flat land off Route 415 on Taylor Street. The parcel contains old style house, with composition siding, built in 1900. The lot has a fenced-in yard and a 16x20 carport. A concrete sidewalk is along the road. There are no curbs. The house is connected to Village water and sewer.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Balcom Farm Property. M. M. Balcom heirs to N. Townsend 7/29/1903. Townsend Co. & A. Herman to L. Hilton 9/6/1905. L. Hilton to A. Hilton 11/1/1917. A. D. Hilton to R. E. Harrison 9/16/1919. R. B. & C. W. Harrison to B. T. Sweigart 3/26/1923 B. T. Sweigart & C. H. Chase (executor of H. E. Sweigart to L. H. & J. J. Whitney. 4/10/1986. Originally farm land. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize				
299.18-02-062.00	**Public\Private** Private				
Owner Nam	Wright	**BOA ID**	73		
Address	8	**Acres**	0.118		
Street	Townsend Ave	**Zoning**	RESIDENTIAL	COMMERCIAL	**Forclosure List** ○ Yes
Town\Villa	Riverside				

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

This underutilized parcel of land contains an active one-family house in aresidential area.

Property Description

Describe, the physical characteristics of the property, buildings, and

This parcel is 0.11 acres (40foot frontage x 125 foot depth) of flat land off Route 415 on Taylor Street. The parcel contains an old style house, with wood siding, built in 1910. It has a fenced-in rear yard and garage.

A concrete sidewalk is along the road. There are no curbs. The house is connected to Village water and sewer. The used car dealership (next door) was once the location of a gas station.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Previous Owners: Balcom Farm Property. M. M. Balcom heirs to N. Townsend 7/29/1903. E. Moulthrop to J. Moulthrop 6/21/1939. J. & R. Moulthrop to H. & A. Franzen 12/30/1939. D. & K. Ingalls 6/1988.

Originally farm land. No known contamination.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Brownfield				
299.18-02-060.00	**Public\Private** Private				
Owner Nam	Stiker	**BOA ID**	74		
Address	354	**Acres**	0.39		
Street	Pulteney St				
Town\Villa	Riverside	**Zoning**	COMMERCIAL	**Forclosure List**	○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

This parcel of land, which may be a brownfield, contains an active used car dealership in a commercial area.

Property Description

Describe, the physical characteristics of the property, buildings, and

This parcels is 0.39 acres (153.4 foot frontage x 162 foot depth) of flat land on Route 415. The parcel contains a building with office and two service bays, with wood siding, built in 1986. There is an asphalt parking lot for approximately 30 vehicles.

The parcel fronts village streets with curb cuts on each side of building. The concrete sidewalk in front of parking lot is along Route 415. The building is connected to Village water and sewer.

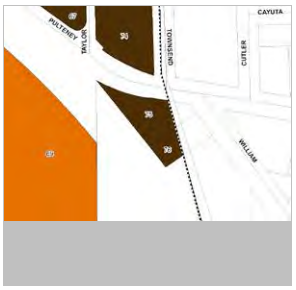
Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Previous Owners: Balcom Farm Property. W. & E. Stiker Trust 1/1992. W. &. E. Stiker Trust to ? 4/1995. ???

Originally farm land. Gas station on premises at one time. Potential contamination could exist..

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties



Tax Parcel ID	**Type** Brownfield				
299.18-01-039.00	**Public\Private** Private				
Owner Nam	Hammer	**BOA ID**	75		
Address	350	**Acres**	0.261		
Street	Pulteney St				
Town\Villa	Riverside	**Zoning**	COMMERCIAL	**Forclosure List**	○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

Uthis parcel of land, that may be a brownfield, contains an active two-story building in a commercial area.

Property Description

Describe, the physical characteristics of the property, buildings, and

The parcel is 0.19 acres (165 foot frontage x 50 foot depth) on flat land on Route 415. The parcel contains a building with retail sales area and office, vacant office/sales space and tenant apartment, with brick siding, built in 1960.

Asphalt parking area in front of the building. The lot has trees and landscaping. There are no curbs. The building is connected to Village water and sewer.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Previous Owners: Crystal City Improvement Company to J. M. Beck (? date). J. M. Beck to E. Hall 12/28/1920. E. E. Hall Jr. & Wife to L. Narzisenfield 7/26/1921.

Carpenter & Pfeifer Inc. to T. I. Carpenter 9/18/1972. T. Carpenter to 350 W. Pulteney Real TY (Realty ?) Corp. 4/1978. The building is for sale with Realty USA.

The building once housed a car sales area (1947) and gas station. Potential contamination may be present.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Brownfield		
299.18-01-040.00	**Public\Private** Private		
Owner Nam	McCarty	**BOA ID**	76
Address	340/342	**Acres**	0.108
Street	William St		
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This parcel may be a brownfield and contains an active retail store in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	This parcel is 0.11 acres (60 foot frontage x 81.88 foot depth) of flat land off Route 415. The parcel containsa building with retail sales area, built in 1978. There is an asphalt parking area in front of the building. There are no curbs. Building once housed a barbershop. The building is served by village sewera and water.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: Crystal City Improvement Company. R. & M. Hunter 10/1978. No known contamination but may be a brownfield.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Brownfield		
NYS DOT	**Public\Private** Public		
Owner Nam	NYSDOT	**BOA ID**	77
Address		**Acres**	0.678
Street			
Town\Villa	Riverside	**Zoning**	COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This is a vacant parcel of land in a commercial area which could be a brownfield.
Property Description Describe, the physical characteristics of the property, buildings, and	This parcel is 0.89 acres of flat land on Route 415. The parcel is close to an intersection, traffic signals and I86 on/off ramps. The property contains 5 trees. The parcel may be better suited for parking lot extension and green space with benches. No curb cuts exist and none are permitted by NYSDOT (??). Village water and sewer is available to the property.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: ? Gas station was on this parcel at one time. No known contamination but potential exists.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID NYS DOT

Type Vacant

Public\Private Public

Owner Nam NYSDOT

Address

Street

Town\Villa Riverside

BOA ID 78

Acres 0.622

Zoning COMMERCIAL

Forclosure List ○ Yes

Use Status

Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,

This vacant parcel of land is in a commercial area.

Property Description

Describe, the physical characteristics of the property, buildings, and

The parcel is 0.92 acres of flat land on Route 415. The parcel is close to an intersection, traffic lights and I86 on/off ramps. The property contains 8-10 trees. There are no existing curb cuts.

Curb cuts would be permitted on right side of parcel only, due to traffic flow, traffic lights and I86 on ramp. On ramp bounds left side of the parcel. Village water and sewer are available.

Use and Environmental History

Describe, the sites operational history,potential contamination issues and ground water conditions

Previous Owners: ? Prior to I86 expansion this parcel of land housed a fast food restaurant (MacDonalds) . No contamination suspected..

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID NYSDOT

Type Vacant

Public\Private Public

Owner Nam NYSDOT

Address

Street

Town\Villa Riverside

BOA ID 79

Acres 0.203

Zoning COMMERCIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	This vacant parcel of land is in a commercial area.
Property Description Describe, the physical characteristics of the property, buildings, and	This parcel is 0.03 acres of flat land off Route 415. The parcel is close to an intersection, traffic lights and I86 on/off ramps. The property contains 4-6 trees. There are no existing curb cuts. The I86 on ramp bounds the left side of parcel. Village water and sewer are available.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous Owners: ? Prior to I86 expansionm this parcel of land contained a retail paint and carpeting store. No contamination is suspected.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.13-05-039.00	**Public\Private** Private		
Owner Nam	Dresser Rand	**BOA ID**	80
Address		**Acres**	3.827
Street		**Zoning**	INDUSTRIAL
Town\Villa	Painted Post		

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	Previous industrial site.
Property Description Describe, the physical characteristics of the property, buildings, and	This parcel is 3.82 acres. It is part of Dresser Rand property and contains large metal buildings and pavement. No other information available at this time. No tax sheet as part of Dresser Rand property.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Originally a lumber mill to supply wood requirements for the Ingersoll Rand factory which was phased out and buildings erected to house office space, parts storage and light industrial manufacturing. Currently used as storage space. No known contamination.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize				
299.13-02-003.00	**Public\Private** Public				
Owner Nam	Feinberg et. al.	**BOA ID**	81		
Address	PARKING	**Acres**	4.008		
Street	Village Sq				
Town\Villa	Painted Post	**Zoning**	PLANNED COMMERCIAL DISTRICT	**Forclosure List**	○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	Parking area and landscaping for use by businesses in the Village Square shopping area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 7.23 acres of flat parking lot and landscaped areas used for Village Square Mall. Trees and landscaping needs to be added or replaced in some areas. Stamped asphalt surfaced added in 2006 (?) on walkways to unify and update. New pole lights installed in 2006 (?)..
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	The area was ormerly residential and commercial buildings prior to 1972 flood. No known contamination.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.13-03-023.00	**Public\Private** Private		
Owner Nam	Immaculate Heart of Mary	**BOA ID**	82
Address	121	**Acres**	1.197
Street	E High St		
Town\Villa	Painted Post	**Zoning**	URBAN CENTER RESIDENTIAL

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	The parceil is a vacant church with associated buildings and parking area.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is 1.20 acres fronting Route 415 at the Hamilton Street intersection. There is a flat parking area 50 x 168 ft. Mature trees and landscaping are on the lot as well as church building, school (1 story, built in 1952) and a rectory.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Previous owners (???). No known contamination.

Pre-Nomination Study
Descriptive Profile of
Brownfield and
Underutilized Properties

Tax Parcel ID	**Type** Underutilize		
299.13-03-012.21	**Public\Private** Private		
Owner Nam	Krystof	**BOA ID**	83
Address	138	**Acres**	0.53
Street	E High St	**Zoning**	BUSINESS
Town\Villa	Painted Post		

Forclosure List ○ Yes

Use Status Describe, the sites current condition in terms of use and operational statusi.e vacan, abandonded, partially developed,	Developed commercial use.
Property Description Describe, the physical characteristics of the property, buildings, and	The parcel is .52 acres and has a two-story building with parking area, small area of grass with shrubs on a 80 x 120 lot.
Use and Environmental History Describe, the sites operational history,potential contamination issues and ground water conditions	Current Use: Hair Salon and upper level apartment. Formerly residential properties. No known contamination.

BARGAIN AND SALE DEED
FORMER INGERSOLL-RAND FOUNDRY SITE
STEUBEN COUNTY
PAINTED POST, NEW YORK

THIS INDENTURE, made this ___ day of November 2004, by and between **INGERSOLL-RAND COMPANY**, a New Jersey corporation, having an address at 155 Chestnut Ridge Road, Montvale, New Jersey 07645 (the "Grantor") and **PAINTED POST DEVELOPMENT, LLC**, a New York limited liability company, having an address at 4 Centre Drive, Orchard Park, New York 14127 (the "Grantee"), and acknowledged by the **VILLAGE OF PAINTED POST**, Steuben County, New York (the "Village") and the **NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION** (the "DEC").

WITNESSETH, that Grantor, in consideration of One Dollar lawful money of the United States, the use restrictions contained herein and other good and valuable consideration paid by Grantee, does hereby grant and release unto Grantee, its successors and assigns forever, the premises set forth and described in SCHEDULE "A" attached hereto and made a part hereof, said premises located in the vicinity of 450 West Water Street, Painted Post, New York and containing approximately forty-eight (48) acres with certain improvements thereon (the "Foundry Premises" or the "Premises");

TOGETHER with the appurtenances and all the estate and rights of Grantor in and to said Premises;

SUBJECT TO all valid and existing covenants, easements, encumbrances and restrictions of record affecting said Premises;

BEING that portion of the parcel conveyed to Grantor by deed recorded on July 26, 2000 at the Steuben County Clerk's Office in Liber 1667 of Deeds at Page 312;

TO HAVE AND TO HOLD the Premises herein granted unto Grantee, its heirs, successors and assigns forever subject to the terms, restrictions and covenants set forth herein and all valid and existing covenants, easements, encumbrances and restrictions of record affecting said Premises;

AND Grantor and Grantee covenant and agree as follows:

FIRST, that in order to protect human health and the environment and promote community objectives, the restrictions and covenants have been included herein to assure the use of the Premises is consistent with the environmental condition of the Premises. The restrictions and covenants contained herein benefit both the Grantor and Grantee and the general public welfare.

A. Industrial / Commercial Use Restrictions

1. The Grantee covenants for itself, its successors and assigns, that the Premises shall be used solely for the following uses currently authorized in an "Industrial District" under Section 280.18, entitled "USE REGULATIONS - SCHEDULE OF USES TABLE", of the Village of Painted Post Zoning Law ("the Village Zoning Law"): commercial vehicle; low-profile business; offices-general; offices - one practicing professional in existing building; offices - more than one practicing professional; planned commercial districts (consistent with the restrictions contained herein); retail business or service not otherwise specially mentioned under the Village Zoning law (consistent with the restrictions contained herein); wholesale business or service not otherwise specifically mentioned under the Village Zoning Law; manufacture, fabrication, extraction, assembly warehousing and other handling of material; research laboratories; storage facility indoor; trucking/wholesale warehouse terminals (with approval by a majority of the Village of Painted Post Planning Board); accessory use/building/structure on same or separate lot; communication tower (new or co-location on existing tower) public utility or transportation use - office; public utility or transportation use - repairs, service or storage; satellite dish; and mixed use (more than one of the above permitted uses); provided, however, the following uses, otherwise authorized in an "Industrial District" under the Village Zoning Law, shall be prohibited hereunder: automobile repair garage; automobile sales area; bowling alley; car washing station; convenience/mini-markets (with or without gas); day-care center; drive-in movie; equipment rental or sales yard; gasoline filling station; grocery store; laundry or dry cleaning plant; newsrack; newspaper offices and printing shops; restaurant; roadside stand; storage yards for equipment; theater or concert hall; veterinary office, animal hospital or kennels; contractors yard and equipment; storage facility, outdoor; nursing or convalescent home; agricultural use for crops; agricultural use for manufacture; cemetery; church or other places of worship; club, membership; crematory; cultural facilities (library, art gallery, museum, etc.); golf course or country club; hospital or sanitarium; institutional or philanthropic use; and/or private, public or parochial school. All other uses including, but not limited to, day care center, adult entertainment uses and all uses under the category "Residential Uses" in the "SCHEDULE OF USES TABLE" contained in the Village of Painted Post Zoning Law are strictly prohibited. A copy of the current version of Section 280.18 of the Village of Painted Post Zoning Law along with a copy of the relevant definitions from the Village of Painted Post Zoning Law are attached hereto as Schedule "B" and incorporated herein.

B. Enforcement

1. The use restrictions and covenants contained herein are binding on the Grantee, its successors and assigns, and shall run with the Premises, and are forever enforceable by the DEC and each and every person or entity who shall be an owner of the Premises. Additionally, the use restrictions and covenants contained herein may be enforced by the Village as if such use restrictions had been imposed as part of a site plan approved by the Village.

2. As it may be impossible to measure monetarily the damages which may accrue to the beneficiaries hereunder by reason of a violation of the provisions hereof, any beneficiary hereunder shall be entitled to relief by way of injunction or specific performance, as well as any other relief available at law or in equity, to enforce the provisions hereof. The failure of any beneficiary hereunder to enforce any provision hereof shall in no event be construed as a waiver

of the right of that beneficiary or any other beneficiary hereunder to enforce any provision of this deed as to the same or similar violation occurring prior to or subsequent to any such failure to enforce. No liability shall attach to the Grantor or any subsidiary or other affiliate of the Grantor (or any officer, director, employee, member, agent, committee or committee member of any of them) or to any other beneficiary hereunder (excepting, however, the subject owner in breach) for failure to enforce the provisions hereof. If the DEC or any other beneficiary hereunder successfully brings an action to extinguish a breach or otherwise enforce the provisions hereof, the costs of such action, including legal fees, shall become a binding, obligation of the owner in breach.

3. The use restrictions and covenants contained herein shall be inserted by the Grantee, its successors or assigns, and any and all future owners of the Premises, in any deed or other legal instrument by which the Grantee, its successors or assigns, and any and all future owners of the Premises, divests itself of either the fee simple title or any other lesser estate in the Premises or any portion thereof. Notwithstanding this provision, failure to include the use restrictions and covenants contained herein in subsequent conveyances does not abrogate the status of such restrictions and covenants as binding upon the parties, their successors and assigns.

4. The Grantee, for itself, its successors and assigns, and any and all future owners of the Premises, (i) covenants that it will not undertake or allow any activity on or use of the Premises that would violate the use restrictions and covenants contained herein and (ii) will indemnify, defend and hold harmless the Grantor, its successors and assigns for breach of said covenant

5. The Grantor and Grantee agree and understand that the Grantee, by its acceptance of this deed, agrees that, as part of the consideration for this deed, the Grantee covenants and agrees for itself, its successors and assigns, forever, that this deed is made and accepted upon each of the restrictions and covenants contained herein which restrictions and covenants shall be binding upon and enforceable against the Grantee, its successors and assigns, and any and all future owners of the Premises, in perpetuity; and the covenants and restrictions set forth herein are a binding servitude on the Premises herein conveyed.

C. Modification and Termination

1. Any modification or termination of the provisions hereof affecting any part of the Premises shall require the written consent of all owners of the Premises or any part thereof from the date hereof and the DEC which consent shall not be unreasonably withheld, conditioned or delayed. Any modification or termination of the provisions hereof shall not become effective until the instrument evidencing such modification or termination has been duly recorded in the Steuben County Clerk's office.

2. Neither the provisions hereof nor any modification thereof shall be interpreted as permitting any action or thing prohibited by the applicable laws, ordinances, rules or regulations of any governmental authority having jurisdiction over the part of the Premises affected or by specific restrictions imposed by any other instrument relating to the Premises or to such part of the Premises.

3. No change of conditions or circumstances shall operate to amend the provisions hereof, and the provisions hereof may be modified or terminated only in the manner provided herein. The determination by any court of competent jurisdiction that any provision hereof is unenforceable, invalid or void shall not affect the enforceability or validity of any other provision hereof.

SECOND, that Grantor covenants that Grantor has not done or suffered anything whereby the said Premises have been encumbered in any way whatsoever and that Grantor, in compliance with Section 13 of the Lien Law, will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of any improvement and will apply the same first to the payment of any cost of any improvement before using any part of the total of the same for any other purpose.

IN WITNESS WHEREOF, Grantor has executed this Deed the day and year first above written.

INGERSOLL-RAND COMPANY

By: _____
Name:
Title:

Agreed to and Accepted
this _____ day of November, 2004 by:

PAINTED POST DEVELOPMENT, LLC

By: _____
Peter L. Krog, Member

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION

By: _____
_____, _____

VILLAGE OF PAINTED POST

By: _____
Edward A. Franklin, Jr., Mayor

PLEASE RECORD AND RETURN TO:

Munesh Patel, Esq.
Harris Beach LLP
99 Garnsey Road
Pittsford, New York 14534
Tel. (585) 419-8722

John A. Pappano, Esq.
Phillips Lytle LLP
3400 HSBC Center
Buffalo, New York 14203
Tel. (716) 847-5404
STATE OF _____)

COUNTY OF _____) ss.:

On the ____ day of _____ in the year 2004, before me, the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____

Notary Public

STATE OF NEW YORK)
COUNTY OF _____) ss.:

On the ____ day of _____ in the year 2004, before me, the undersigned, a Notary Public in and for said State, personally appeared Peter L. Krog, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____

Notary Public

STATE OF NEW YORK)
COUNTY OF _____) ss.:

On the ____ day of _____ in the year 2004, before me, the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____

Notary Public

STATE OF NEW YORK)
COUNTY OF _____) ss.:

On the ____ day of _____ in the year 2004, before me, the undersigned, a Notary Public in and for said State, personally appeared Edward A. Franklin, Jr., personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____

Notary Public

SCHEDULE A - PROPERTY DESCRIPTION (Ingersoll-Rand Foundry Parcel)

Attached hereto

SCHEDULE B - VILLAGE ZONING LAW SECTION 280.18 AND DEFINITIONS

Attached hereto

Property Boundaries

- Property Boundary Line

Zoning

- Industrial
- Business
- Village Center District
- Low-Density Residential
- Medium-Density Residential
- Conservation
- Hwy I-86
- West Water Street Development

Maxar

WEST WATER STREET PREDEVELOPMENT
VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

PAINTED POST VILLAGE ZONING MAP with AERIAL IMAGERY (2024)

FAGAN ENGINEERS & LAND SURVEYORS PC

0 — 1,500 — 3,000 Feet

N W E S

SCALE: 1:10,000
(PRINTED 11" x 17")

PROJECT #: 2020-045.001
SEPTEMBER 2025

Appendix D
Soils Reports

FAGAN ENGINEERS & LAND SURVEYORS PC

450 WEST WATER STREET PROPERTY
VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

SOIL TYPE MAP
with AERIAL IMAGERY (2024)

0 — 1,000 — 2,000 Feet

N W E S

SCALE: 1:4,500
(PRINTED 11" x 17")

PROJECT #: 2020-045.001
DECEMBER, 2024

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive | Suite 2
Rochester, NY 14623
585.359.9000

MEMORANDUM

12 June 2020
File No. 135100-002

TO: Tyoga Container Company, Inc.
Charlie Frysinger, CEO
C/O Larson Design Group

FROM: Haley & Aldrich of New York
Glenn White, Carrie Layhee, P.E., John DiGenova

SUBJECT: Tyoga Container Distribution Center Project
Geotechnical and Environmental Investigation Preliminary Memorandum
Former Ingersoll-Rand Foundry Site
West Water Street
Painted Post, New York

This memorandum summarizes the subsurface explorations performed and our findings for the preliminary phase of geotechnical and environmental investigations for the subject project. This memorandum includes analytical testing results, description of subsurface conditions, and provides preliminary design and construction recommendations with respect to geotechnical and environmental conditions at the project site. The work was performed in accordance with our proposal dated 19 May 2020 and your subsequent authorization.

Existing Site Conditions and Site History

The site includes 49 acres and is located in the town of Painted Post off of West Water Street in Steuben County, New York (Figure 1 – Project Locus). The site is just east of Interstate 86 (New York State Route 17) and the Cohocton River and north of the Chemung River and Tioga River. Refer to Figure 1 for the Project Locus. We understand the site was formally a machine shop and foundry that began operations in 1848 and ended in 1986.

We understand multiple subsurface explorations have been performed at the site by others. Based on review of historical site reports, environmental impacts are present in the shallow fill and not in the native soils beneath the fill. Environmental contaminants at the site include primarily polychlorinated biphenols (PCBs) and polyaromatic hydrocarbons (PAHs). The nature of the contamination is associated with historical use and storage of various petroleum products, and products of incomplete combustion. Some heavy metals and petroleum-related volatile organic compounds were also reported. There is a

300-foot radius on the site that was identified by the New York State Department of Environmental Conservation (NYSDEC) in the 1994 Record of Decision to contain contaminated soil. The radius was incorporated into a deed restriction which remains on the property to date. In 2005, the deed restriction was revised to include the entire 49-acre property.

Site grades are relatively flat between El. 938 to 945 and slope slightly downwards to the west. The site is generally open with some vegetated and wooded areas.

Elevations described herein are in feet and reference the National Geodetic Vertical Datum of 1929 (NGVD29).

Proposed Development

The proposed distribution center construction consists of an 1840 by 325 ft warehouse with two 2-story office areas that will be 4,136 sq. ft and 5,640 sq. ft. The proposed development will also have truck loading spaces, trailer storage spaces, vehicle parking spaces, and two proposed infiltration basin areas to the south of the building and parking areas. The proposed finished floor elevation for the warehouse and office spaces is El. 942.5. The bottom of the infiltration basins is at El. 932 and El. 932.5. We understand the anticipated floor loading for the warehouse is on the order of 375 psf. Column loads for the proposed warehouse are on the order of 110 kips.

Subsurface Explorations

Twelve test borings, planned and monitored by Haley & Aldrich of New York (Haley & Aldrich) as part of the preliminary phase investigation, were drilled at the site from 27 May 2020 to 3 June 2020. Eleven of the test borings, designated HA20-2, HA20-4, HA20-7, HA20-10, HA20-14, HA20-15, HA20-16, HA20-18, HA20-21, HA20-22, and HA20-23 were performed in the area of the proposed warehouse footprint to depths ranging between 30 and 65 ft below ground surface. NYSDEC was notified prior to beginning the boring program. One test boring, designated HA20-33, was performed in the area of the proposed infiltration basin #2 to a depth of 14 ft below ground surface. The test borings were drilled by Nothnagle Drilling, Inc. of Scottsville, New York. A photoionization detector (PID) was used to screen all the soil samples collected during the drilling. The test boring locations are shown on Figure 2 and the test boring logs are presented in Appendix A.

Analytical Testing

Soil samples for analytical testing were collected at depths ranging from 1 to 8 ft below ground surface at the five boring locations within the vicinity of the known impacted area of the site which included borings HA20-14, HA20-15, HA20-16, HA20-22, and HA20-23. Analytical testing included metals, polychlorinated biphenols (PCBs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and polyaromatic hydrocarbons (PAHs). The samples were submitted to and analyzed by Alpha Analytical of Westborough, Massachusetts. Results of the analytical testing are presented in Table I and

are compared to the NYSDEC 6 NYCRR Part 375 Table 375-6.8(b) Commercial and Industrial Restricted Use Soil Cleanup Objectives Laboratory analytical reports are included in Appendix B.

Geology

The proposed development site is located in the Appalachian Plateau province of south-central New York State; the Appalachian Plateau is a glaciated plateau of moderate relief. Elevations range from about 1,700 ft above mean sea level in the upland areas to 930 ft in the valley bottoms. The proposed development site is located on the north side of the valley bottom near the confluence of the Cohocton and Tioga Rivers, which combine to form the Chemung River.

REGIONAL GEOLOGY

The consolidated rocks underlying the region are comprised of marine sediments of Paleozoic age. The uppermost bedrock unit beneath the unconsolidated deposits has been mapped as the Java Group comprised of the Wiscoy Formation, a mixture of undifferentiated sandstones and grey-black argillite shale of Upper Devonian, and the Hanover and Pipe Creek shales. These sedimentary rocks generally are present beneath the highlands on the northwestern sides of the Cohocton River and form the hills to the north of the proposed development site. The upper sedimentary bedrock is reportedly between 300 and 700 ft thick, and underlain by older sedimentary strata. The Java Group overlies even thicker sedimentary sandstones, siltstones and shale of the Nunda and Gardeau Formation of the West Falls Group of upper Devonian age. The bedding of the bedrock is nearly horizontal, but dips slightly to the north-northeast.

The topography of the regional area is significantly influenced from Pleistocene glaciation, which flowed southward and covered the region. The glaciers deepened and widened most of the bedrock valleys. As the Pleistocene glaciers retreated northward around 10,000 years ago, they left a thick blanket of unconsolidated material in the valleys. The valley-filled aquifers along the major drainage features are generally underlain by low permeable basal glacial till and lacustrine deposits of silts/clays that were likely deposited in ancestral glacial lakes when the ice sheets were stationary. As the ice melted and glaciers withdrew in the late Pleistocene period, significant meltwater resulted in the deposition of thin to very thick deposits of well sorted sand and gravels, referred to as outwash sand & gravel which was deposited above the finer-grained material in the valley areas. Depending on the location, the meltwater filling the valleys deposited layers of sand, gravel, silt and clay; near the confluence of the Cohocton and Tioga Rivers, the valley has a relatively thin layer of sand and gravel overlying a thicker section of fine-grained sediments. Near the major rivers and in the flood plains, thin layers of alluvial silt and fine sand over the outwash sand and gravel deposits. Dense non-stratified material deposited by the ice in the upland areas is generally till, which ranges in size and composition from clay to boulders.

SITE GEOLOGY

Based on soil borings completed to evaluate subsurface conditions across the proposed development site, the property is comprised of fill material that has been added to grade the property and remove fine-grain flood plain sediments that are typically encountered along the terraces extending from the

Cohocton River. Based on geologic logs constructed during the drilling of the soil borings, the upper soils across the site are comprised of approximately 2 ft to as much as 12 ft of fill material that was used to grade the property. The fill material is comprised of fine to coarse grain sand and silt and may contain anthropologic material including brick, wood fragments and some foundry sands. Immediately beneath the fill deposits, and depending on the location, a fine-grain clay layer is present, most notably in boring HA-22. The clay deposits were encountered at depths ranging from 5 to 10 ft below grade and generally ranged in thickness between 1 and 5 ft, but the clay deposits were locally thicker, as much as 19.5 ft (boring HA-22). The finer grained silts and clays are interpreted to be glacial lacustrine material, which is inconsistently and locally deposited across the central portion of the property, and may represent a period where glacial ice melt was limited or an area where remnant ice down wasted, resulting in localized ponding that created much lower depositional settings. Beneath the clays, or in areas where the clay is not present, the soils are comprised of coarse-grained sands and gravels, with some cobbles, representing glacial outwash material. In the deeper borings advanced at the proposed development site thus far (HA-22), beneath the outwash sand and gravel deposits, a lower clay unit (HA-22) was encountered at a depth of 40 ft below grade. These deeper fine-grained units were 10 to 20 ft thick and underlain by additional outwash material below the silts/clays. Although not drilled at the site, borings installed in the local area indicate that the depth to bedrock is approximately 135 to 150 ft.

Subsurface Conditions

SOIL CONDITIONS

Subsurface soil conditions encountered during the preliminary investigation phase are described below, in order of increasing depth below ground surface. It should be noted that one or more strata may not be present at a particular location. Refer to the test boring logs in Appendix A for a more detailed description of conditions encountered at a particular location.

Topsoil/Asphalt/Concrete: Topsoil, asphalt, or concrete was encountered at the surface at some of the boring locations. The thickness of the surficial material ranged from 0.3 to 1.5 ft. The concrete is likely remnants of the foundry building foundation slabs.

Existing Fill: A layer of existing granular fill was encountered which was found to be between 2 to 13 ft thick at the test boring locations. The fill generally consisted of very loose to medium dense silty SAND and/or well graded SAND with varying amounts of gravel and silt. Some portions of the fill contained trace amounts of wood, coal, and foundry sand/ash.

Upper Glaciolacustrine: An upper layer of glaciolacustrine, ranging in thickness from 1.7 to 14.5 ft, was encountered at boring locations HA20-2, HA20-10, HA20-18, HA20-21, HA20-22, and HA20-23 directly below the existing fill. The glaciolacustrine was generally described as very soft to stiff lean CLAY with varying amounts of sand and gravel.

Glacial Outwash: Glacial outwash deposits, generally consisting of medium dense to dense well graded SAND, poorly graded SAND, well graded GRAVEL, and/or poorly graded GRAVEL with varying amounts of silt and clay were encountered at the boring locations at depths ranging from 2 to 20 ft below ground

surface. The glacial outwash was generally found to be 15.5 to 28 ft thick prior to boring termination. In some cases the glacial outwash was encountered twice in between the glaciolacustrine.

Lower Glaciolacustrine: Below the glacial outwash a lower glaciolacustrine was encountered at boring locations HA20-7, HA20-18, HA20-21, and HA20-22 at depths between 28 and 40 ft below ground surface. The glaciolacustrine was described as very soft to very stiff lean CLAY with varying amounts of sand and gravel. The deposit was found to be 2 to 36 ft thick and was not fully terminated at boring locations HA20-18 and HA20-21.

GROUNDWATER

Groundwater was observed in the test borings during and/or shortly after drilling at depths ranging between 12.5 to 44 ft below ground surface. Three groundwater observation wells are planned for the final investigation phase so that long term static groundwater levels can be measured. Water levels can be expected to vary with seasonal change, precipitation, construction activities, and other factors. The local geology, topography, and presence of wetlands can also impact groundwater levels at the site. Water levels encountered during and following construction may differ from those encountered in the explorations and reported herein.

Preliminary Geotechnical Recommendations

Based on the findings during the investigation thus far we have developed the following preliminary geotechnical recommendations for the proposed warehouse building.

The existing fill is not suitable for foundation support in its current condition. Below the existing fill, which was found to be 2 to 13 ft thick, competent naturally deposited glaciolacustrine and glacial outwash are suitable for foundation support. We offer the following preliminary geotechnical recommendations for the proposed building foundations and floor slab:

- Building foundations can bear on naturally deposited soils which were encountered 2 to 13 ft below ground surface. The existing fill should be removed and replaced with imported structural fill material within the zone of influence of the foundations. The zone of influence consists of an imaginary line 1 ft beyond the bottom edge of the footing and down and out on a 1 horizontal to 1 vertical slope extending to the bearing stratum.

- As an alternative to removal and replacement, ground improvement of the existing fill could be implemented so that building foundations could bear at frost depth on the improved existing fill. We have considered two ground improvement techniques for this site which are described below:

    - Rapid Impact Compaction (RIC): RIC consists of the densification of shallow soils using a hydraulic hammer that repeatedly strikes the ground. Soils can be compacted to a depth of about 10 to 15 ft beneath existing grades.

- Deep Dynamic Compaction (DDC): DDC consists of the densification of soils by dropping a heavy weight repeatedly from heights of 40 to 100 ft. Soils can be compacted to depths of about 25 to 30 ft beneath existing grades.

We note that removal of 1 to 2 ft of the upper existing fill material is recommended and should be replaced with imported structural fill to serve as a working pad for the execution of ground improvement.

We suspect that the ground improvement will be the more cost-effective alternative.

- Bottom of footings bearing in soil should be positioned at least 4 ft below adjacent ground or slab surface exposed to freezing.

- The allowable bearing capacity for the building foundations still needs to be assessed further but based on the conditions encountered it will be relatively low, i.e., between 2 ksf and 3 ksf.

- The building floor slab could bear directly on the existing fill with a minimum 12 in. to 18 in. thick layer of imported dense graded aggregate material. The floor slab subgrade will need to be vigorously densified with heavy compaction equipment so that a uniform bearing surface is attained.

- Settlement evaluations for the proposed building foundations and floor slab will be performed following the final investigation phase. Laboratory testing for the upper and lower glaciolacustrine clays will be performed in order to estimate the settlement properties/behavior of these materials.

Preliminary Environmental Findings and Recommendations

Soil samples for laboratory analysis were collected from the fill layer at six borings locations. Each of boring locations except HA20-7 was within the approximate 300-foot radius area historically identified to contain contaminants of concern in the fill layer. Descriptions of the fill materials and the sample depths are indicated on the test boring logs in Appendix A. Samples were selected based on the presence of evidence of impacts including presence of foundry sand, ash, petroleum and/or highest PID reading. The fill layer was found to be consistent with historical reports for the Former Ingersoll-Rand Foundry Site. The analytical reports indicate various detections of PCBs, PAHs, SVOCs and metals. Only PAHs were detected at concentrations exceeding the commercial and/or industrial soil cleanup objectives.

HA20-7 was not located in the historically identified radius and evidence of impacts were not observed in the fill layer at HA20-7. A slight petroleum odor and sheen were observed on wet soils at the water table from 18 to 22 ft. The sample with the highest PID (7 ppm) from 20 -22 ft was collected for laboratory analysis. Petroleum constituents were detected at very low concentrations, far less than commercial and industrial soil cleanup objectives. The petroleum-related VOCs in the sample from HA20-7 were the only VOCs detected in the six samples collected. The evidence of petroleum in the

sample was reported to the Village of Painted Post, and the Village informed the NYSDEC of the findings. Follow-up communications have not been received from the Village or the NYSDEC to date. The petroleum finding does not appear to be a concern given the low concentrations detected.
The above findings are consistent with the historical documentation for the site except for the petroleum in HA20-7 which does not appear to present a concern, and would not be disturbed by the project. During future construction, the fill layer should be managed in accordance with the Soil/Fill Management Protocols established for the Former Ingersoll-Rand Foundry Site in August 2005, approved by the NYSDEC. The soil/Fill management protocols allow for potential reuse on site with appropriate cover. Any fill material that cannot be reused shall be disposed at a NYSDEC-permitted landfill.

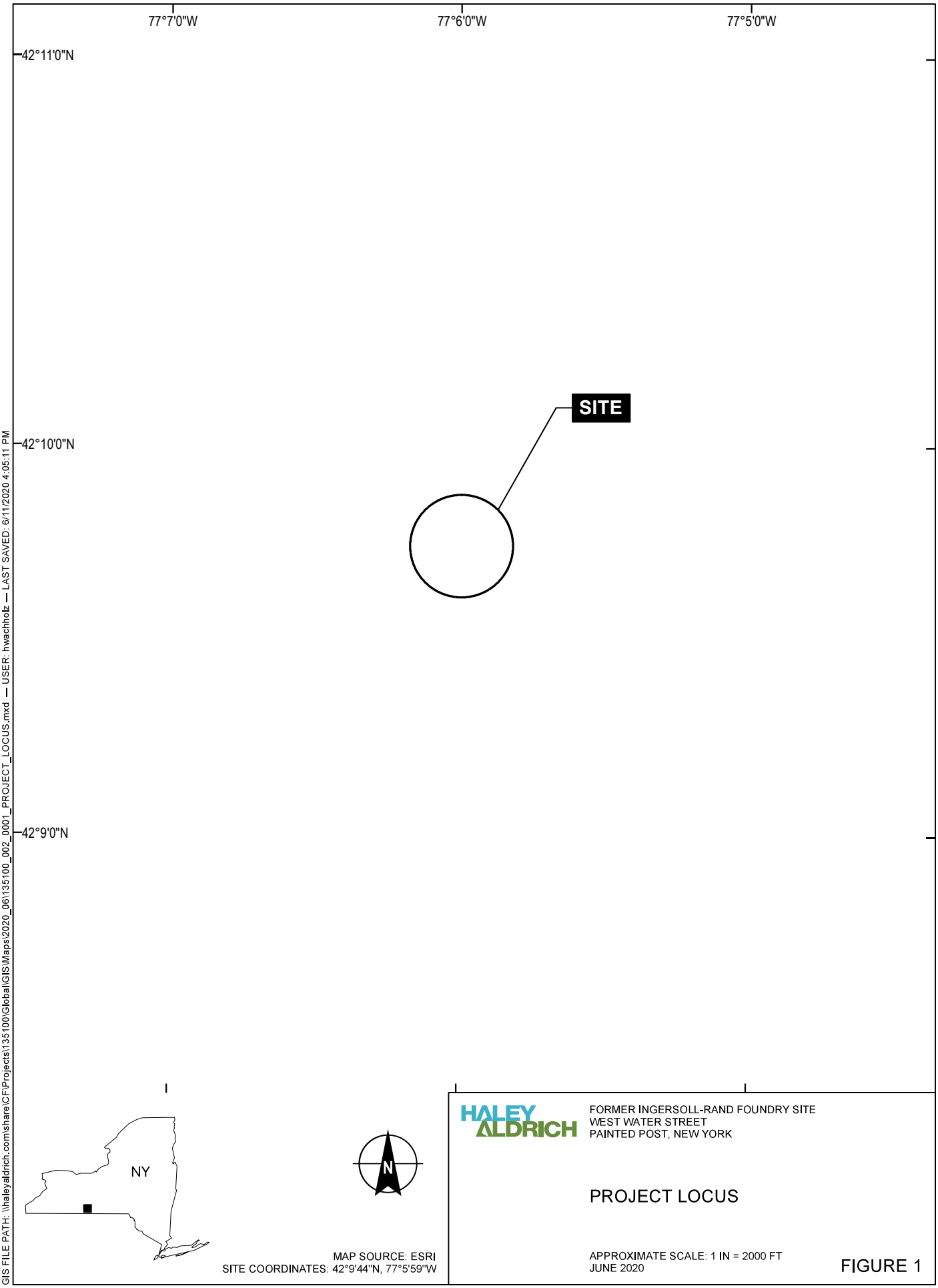
Closing

We appreciate the opportunity to provide services related to the project. Please do not hesitate to call if you wish to discuss.

Attachments:

- Figure 1 – Project Locus
- Figure 2 – Boring Location Plan
- Table I – Analytical Testing Results
- Appendix A – Test Boring Logs
- Appendix B – Analytical Results

\\haleyaldrich.com\share\CF\Projects\135100\002\Deliverables\Preliminary Memorandum\2020-0612-HAI-Preliminary Memorandum Painted Post NY-F.docx



GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\135100\GlobalGIS\Maps\2020_06\135100_002_0001_PROJECT_LOCUS.mxd — USER: hwachholtz — LAST SAVED: 6/11/2020 4:05:11 PM

MAP SOURCE: ESRI
SITE COORDINATES: 42°9'44"N, 77°5'59"W

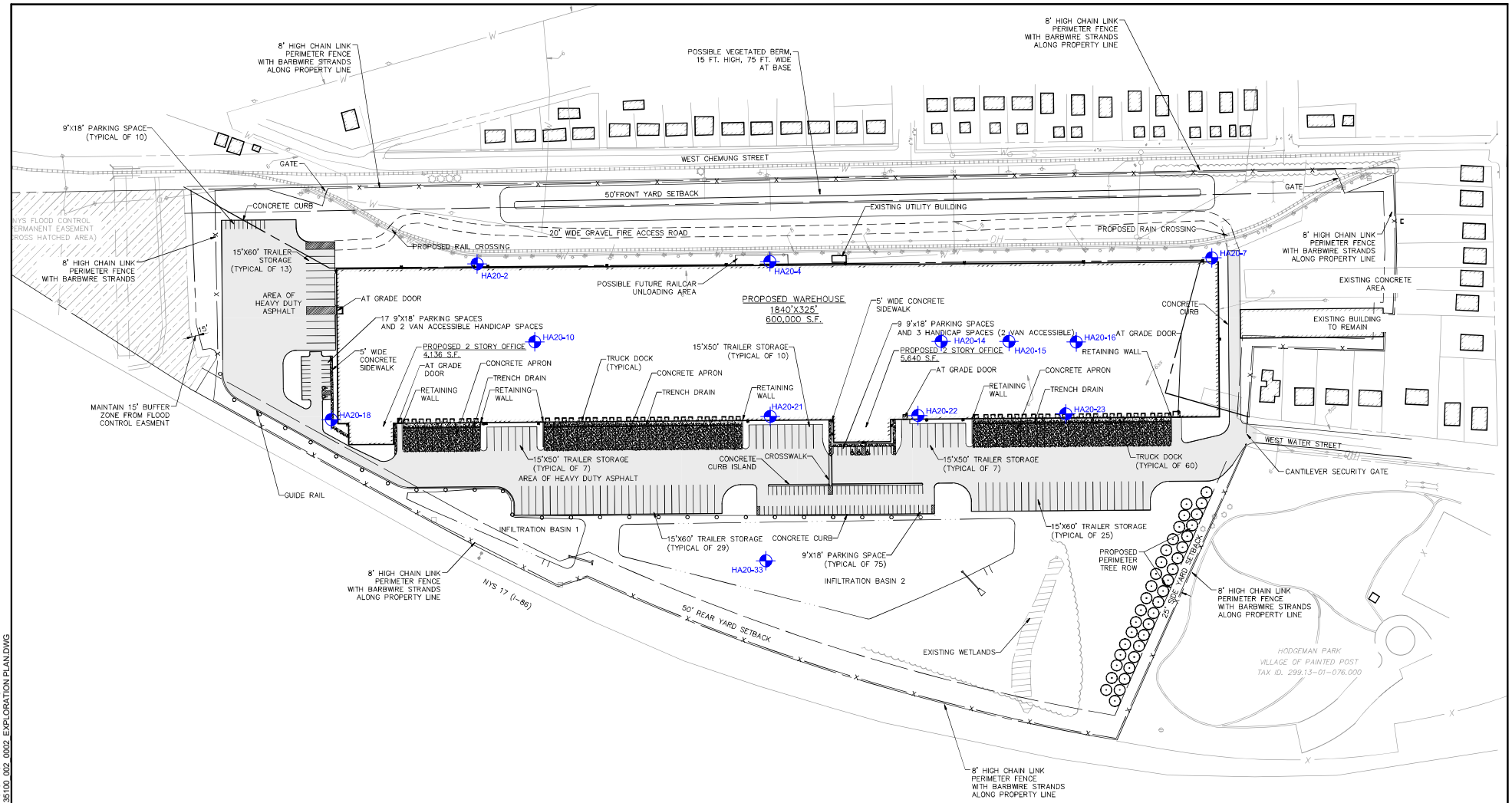
HALEY ALDRICH

FORMER INGERSOLL-RAND FOUNDRY SITE
WEST WATER STREET
PAINTED POST, NEW YORK

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
JUNE 2020

FIGURE 1



LEGEND

HA20-33 — DESIGNATION AND APPROXIMATE LOCATION OF TEST BORINGS PERFORMED BY NOTHNAGLE DRILLING, INC. DURING THE PERIOD 27 MAY 2020 TO 3 JUNE 2020.

NOTES

1. BACKGROUND CAD FILE IS ENTITLED "PROPOSED SITE PLAN" DATED MAY 2020 FROM LARSON DESIGN GROUP OF CORNING, NEW YORK.
2. TEST BORING LOCATIONS WERE LAID OUT IN THE FIELD BY A REPRESENTATIVE OF HALEY & ALDRICH USING AN AVENZA GIS MAP.
3. TEST BORINGS WERE MONITORED IN THE FIELD BY A REPRESENTATIVE OF HALEY & ALDRICH.

0 200 400
SCALE IN FEET

HALEY ALDRICH

FORMER INGERSOLL RAND FOUNDRY SITE
WEST WATER STREET
PAINTED POST, NEW YORK

BORING LOCATION PLAN

SCALE: AS SHOWN
JUNE 2020

FIGURE 2

Saved by: KPOSTOLOWSKI Printed: 6/9/2020 1:43 PM Sheet: FIG 2
Z:\CF\PROJECTS\135100\GLOBAL\CAD\135100_002_0002_EXPLORATION PLAN.DWG

TABLE I
FORMER INGERSOLL-RAND FOUNDRY SITE
WEST WATER STREET
PAINTED POST, NEW YORK

SAMPLE LOCATION				HA20-16		HA20-15		HA20-15		HA20-14		HA20-23		HA20-22		HA20-7	
SAMPLE ID				2020-0527-1100-HA20-16		2020-0527-1300-HA20-15		2020-0527-1300-HA20-15		2020-0528-0830-HA20-14		2020-0528-1130-HA20-23		2020-0528-1330-HA20-22		2020-0602-1500-HA20-7	
SAMPLING DATE				5/27/2020		5/27/2020		5/27/2020		5/28/2020		5/28/2020		5/28/2020		6/2/2020	
LAB SAMPLE ID				L2021799-01		L2021799-02		L2021799-02 R1		L2022023-01		L2022023-02		L2022023-03		L2022829-01	
SAMPLE TYPE				SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE DEPTH (ft.)				6-8		2-4		2-4		1-2		2-4		2-4		2022	
	NY-RESC	NY-RESI	Units	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
General Chemistry																	
Chromium, Trivalent	1500	6800	mg/kg	8	0.91	11	0.86	-	-	9.9	0.82	14	0.86	7.3	0.86	-	-
Solids, Total			%	88.2	0.1	93.3	0.1	-	-	97	0.1	92.5	0.1	92.7	0.1	77.2	0.1
Cyanide, Total	27	10000	mg/kg	ND	1.1	ND	1	-	-	ND	1	ND	1.1	ND	1	-	-
Chromium, Hexavalent	400	800	mg/kg	ND	0.907	ND	0.857	-	-	ND	0.825	ND	0.865	ND	0.863	-	-
Polychlorinated Biphenyls (PCBs)																	
Aroclor 1016	1	25	mg/kg	ND	0.0366	ND	0.0344	-	-	ND	0.0327	ND	0.0342	ND	0.0354	ND	0.0412
Aroclor 1221	1	25	mg/kg	ND	0.0366	ND	0.0344	-	-	ND	0.0327	ND	0.0342	ND	0.0354	ND	0.0412
Aroclor 1232	1	25	mg/kg	ND	0.0366	ND	0.0344	-	-	ND	0.0327	ND	0.0342	ND	0.0354	ND	0.0412
Aroclor 1242	1	25	mg/kg	ND	0.0366	ND	0.0344	-	-	ND	0.0327	ND	0.0342	ND	0.0354	ND	0.0412
Aroclor 1248	1	25	mg/kg	ND	0.0366	ND	0.0344	-	-	ND	0.0327	ND	0.0342	ND	0.0354	ND	0.0412
Aroclor 1254	1	25	mg/kg	ND	0.0366	ND	0.0344	-	-	ND	0.0327	ND	0.0342	ND	0.0354	ND	0.0412
Aroclor 1260	1	25	mg/kg	ND	0.0366	ND	0.0344	-	-	0.00742J	0.0327	ND	0.0342	ND	0.0354	ND	0.0412
Aroclor 1262	1	25	mg/kg	ND	0.0366	ND	0.0344	-	-	ND	0.0327	ND	0.0342	ND	0.0354	ND	0.0412
Aroclor 1268	1	25	mg/kg	ND	0.0366	ND	0.0344	-	-	ND	0.0327	ND	0.0342	ND	0.0354	ND	0.0412
PCBs, Total	1	25	mg/kg	ND	0.0366	ND	0.0344	-	-	0.00742J	0.0327	ND	0.0342	ND	0.0354	ND	0.0412
Semivolatile Organic Compounds (SVOCs)																	
Acenaphthene	500	1000	mg/kg	ND	0.15	0.064J	0.14	-	-	0.11J	0.14	0.11J	0.71	6.7	0.7	ND	0.17
Hexachlorobenzene	6	12	mg/kg	ND	0.11	ND	0.1	-	-	ND	0.1	ND	0.53	ND	0.53	ND	0.13
Fluoranthene	500	1000	mg/kg	ND	0.11	2.6	0.1	-	-	1.6	0.1	4	0.53	5.3	0.53	ND	0.13
Naphthalene	500	1000	mg/kg	ND	0.18	0.11J	0.18	-	-	1	0.17	0.23J	0.89	0.68J	0.88	ND	0.21
Benzo(a)anthracene	5.6	11	mg/kg	ND	0.11	2	0.1	-	-	1.2	0.1	3.2	0.53	5.9	0.53	ND	0.13
Benzo(a)pyrene	1	1.1	mg/kg	ND	0.15	2.5	0.14	-	-	2.5	0.14	5.5	0.71	15	0.7	ND	0.17
Benzo(b)fluoranthene	5.6	11	mg/kg	ND	0.11	5.1	0.1	-	-	3	0.1	9.7	0.53	15	0.53	ND	0.13
Benzo(k)fluoranthene	56	110	mg/kg	ND	0.11	1.3	0.1	-	-	0.77	0.1	2.4	0.53	4.9	0.53	ND	0.13
Chrysene	56	110	mg/kg	ND	0.11	2.7	0.1	-	-	1.5	0.1	4.9	0.53	6.2	0.53	ND	0.13
Acenaphthylene	500	1000	mg/kg	ND	0.15	ND	0.14	-	-	1.3	0.14	ND	0.71	0.79	0.7	ND	0.17
Anthracene	500	1000	mg/kg	ND	0.11	0.18	0.1	-	-	0.55	0.1	ND	0.53	1	0.53	ND	0.13
Benzo(ghi)perylene	500	1000	mg/kg	ND	0.15	2.5	0.14	-	-	2	0.14	7.8	0.71	14	0.7	ND	0.17
Fluorene	500	1000	mg/kg	ND	0.18	0.037J	0.18	-	-	0.59	0.17	ND	0.89	1	0.88	ND	0.21
Phenanthrene	500	1000	mg/kg	ND	0.11	0.99	0.1	-	-	2	0.1	0.94	0.53	5.3	0.53	ND	0.13
Dibenzo(a,h)anthracene	0.56	1.1	mg/kg	ND	0.11	0.69	0.1	-	-	0.5	0.1	1.4	0.53	3.3	0.53	ND	0.13
Indeno(1,2,3-cd)pyrene	5.6	11	mg/kg	ND	0.15	2.4	0.14	-	-	1.9	0.14	6.8	0.71	16	0.7	ND	0.17
Pyrene	500	1000	mg/kg	ND	0.11	2.2	0.1	-	-	2.6	0.1	3.5	0.53	7.1	0.53	0.14	0.13
Dibenzofuran	350	1000	mg/kg	ND	0.18	0.056J	0.18	-	-	0.089J	0.17	ND	0.89	0.22J	0.88	ND	0.21
Pentachlorophenol	6.7	55	mg/kg	ND	0.15	ND	0.14	-	-	ND	0.14	ND	0.71	ND	0.7	ND	0.17
Phenol	500	1000	mg/kg	ND	0.18	ND	0.18	-	-	ND	0.17	ND	0.89	ND	0.88	ND	0.21
2-Methylphenol	500	1000	mg/kg	ND	0.18	ND	0.18	-	-	ND	0.17	ND	0.89	ND	0.88	ND	0.21
3-Methylphenol/4-Methylphenol	500	1000	mg/kg	ND	0.27	ND	0.25	-	-	0.033J	0.24	ND	1.3	ND	1.3	ND	0.3
Total Metals																	
Arsenic, Total	16	16	mg/kg	4.62	0.439	2.33	0.42	-	-	6.32	0.406	3.05	0.406	2.5	0.425	-	-
Barium, Total	400	10000	mg/kg	23.4	0.439	18.1	0.42	-	-	48.7	0.406	13.5	0.406	15.5	0.425	-	-
Beryllium, Total	590	2700	mg/kg	0.272	0.22	0.185J	0.21	-	-	0.633	0.203	0.138J	0.203	0.115J	0.212	-	-
Cadmium, Total	9.3	60	mg/kg	ND	0.439	ND	0.42	-	-	0.345J	0.406	0.284J	0.406	0.195J	0.425	-	-
Chromium, Total			mg/kg	8.03	0.439	10.6	0.42	-	-	9.92	0.406	14.4	0.406	7.31	0.425	-	-
Copper, Total	270	10000	mg/kg	34.8	0.439	6.61	0.42	-	-	22.1	0.406	14	0.406	10.1	0.425	-	-
Lead, Total	1000	3900	mg/kg	6.44	2.2	13.1	2.1	-	-	13.1	2.03	8.89	2.03	10.6	2.12	-	-
Manganese, Total	10000	10000	mg/kg	433	0.439	179	0.42	-	-	444	0.406	92.2	0.406	150	0.425	-	-
Mercury, Total	2.8	5.7	mg/kg	ND	0.071	0.32	0.067	-	-	ND	0.065	ND	0.068	ND	0.068	-	-
Nickel, Total	310	10000	mg/kg	11.5	1.1	6.12	1.05	-	-	11.5	1.01	6.7	1.02	10	1.06	-	-
Selenium, Total	1500	6800	mg/kg	ND	0.878	ND	0.841	-	-	ND	0.812	ND	0.813	ND	0.849	-	-
Silver, Total	1500	6800	mg/kg	ND	0.439	ND	0.42	-	-	ND	0.406	ND	0.406	ND	0.425	-	-
Zinc, Total	10000	10000	mg/kg	53.7	2.2	30.7	2.1	-	-	37	2.03	11.7	2.03	19.5	2.12	-	-
Volatile Organic Compounds (VOCs)																	
Methylene chloride	500	1000	mg/kg	ND	0.0053	ND	0.0048	ND	0.0048	ND	0.0049	ND	0.0052	ND	0.0049	ND	0.0052
1,1-Dichloroethane	240	480	mg/kg	ND	0.0011	ND	0.00096	ND	0.00095	ND	0.00098	ND	0.001	ND	0.00098	ND	0.001
Chloroform	350	700	mg/kg	0.00022J	0.0016	0.00024J	0.0014	0.00021J	0.0014	ND	0.0015	ND	0.0016	ND	0.0015	ND	0.0016
Carbon tetrachloride	22	44	mg/kg	ND	0.0011	ND	0.00096	ND	0.00095	ND	0.00098	ND	0.001	ND	0.00098	ND	0.001
Tetrachloroethene	150	300	mg/kg	ND	0.00053	ND	0.00048	ND	0.00048	ND	0.00049	ND	0.00052	ND	0.00049	ND	0.00052
Chlorobenzene	500	1000	mg/kg	ND	0.00053	ND	0.00048	ND	0.00048	ND	0.00049	ND	0.00052	ND	0.00049	ND	0.00052
1,2-Dichloroethane	30	60	mg/kg	ND	0.0011	ND	0.00096	ND	0.00095	ND	0.00098	ND	0.001	ND	0.00098	ND	0.001
1,1,1-Trichloroethane	500	1000	mg/kg	ND	0.00053	ND	0.00048	ND	0.00048	ND	0.00049	ND	0.00052	ND	0.00049	ND	0.00052

TABLE I
FORMER INGERSOLL-RAND FOUNDRY SITE
WEST WATER STREET
PAINTED POST, NEW YORK

SAMPLE LOCATION				HA20-16		HA20-15		HA20-15		HA20-14		HA20-23		HA20-22		HA20-7	
SAMPLE ID				2020-0527-1100-HA20-16		2020-0527-1300-HA20-15		2020-0527-1300-HA20-15		2020-0528-0830-HA20-14		2020-0528-1130-HA20-23		2020-0528-1330-HA20-22		2020-0602-1500-HA20-7	
SAMPLING DATE				5/27/2020		5/27/2020		5/27/2020		5/28/2020		5/28/2020		5/28/2020		6/2/2020	
LAB SAMPLE ID				L2021799-01		L2021799-02		L2021799-02 R1		L2022023-01		L2022023-02		L2022023-03		L2022829-01	
SAMPLE TYPE				SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE DEPTH (ft.)				6-8		2-4		2-4		1-2		2-4		2-4		20-22	
	NY-RESC	NY-RESI	Units	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
Benzene	44	89	mg/kg	ND	0.00053	0.00027J	0.00048	0.00024J	0.00048	0.00047J	0.00049	ND	0.00052	ND	0.00049	ND	0.00052
Toluene	500	1000	mg/kg	ND	0.0011	0.00062J	0.00096	0.00063J	0.00095	0.003	0.00098	ND	0.001	ND	0.00098	0.00089J	0.001
Ethylbenzene	390	780	mg/kg	ND	0.0011	ND	0.00096	ND	0.00095	0.0024	0.00098	ND	0.001	ND	0.00098	ND	0.001
Vinyl chloride	13	27	mg/kg	ND	0.0011	ND	0.00096	ND	0.00095	ND	0.00098	ND	0.001	ND	0.00098	ND	0.001
1,1-Dichloroethene	500	1000	mg/kg	ND	0.0011	ND	0.00096	ND	0.00095	ND	0.00098	ND	0.001	ND	0.00098	ND	0.001
trans-1,2-Dichloroethene	500	1000	mg/kg	ND	0.0016	ND	0.0014	ND	0.0014	ND	0.0015	ND	0.0016	ND	0.0015	ND	0.0016
Trichloroethene	200	400	mg/kg	ND	0.00053	ND	0.00048	ND	0.00048	ND	0.00049	ND	0.00052	ND	0.00049	ND	0.00052
1,2-Dichlorobenzene	500	1000	mg/kg	ND	0.0021	ND	0.0019	ND	0.0019	ND	0.002	ND	0.0021	ND	0.002	ND	0.0021
1,3-Dichlorobenzene	280	560	mg/kg	ND	0.0021	ND	0.0019	ND	0.0019	ND	0.002	ND	0.0021	ND	0.002	ND	0.0021
1,4-Dichlorobenzene	130	250	mg/kg	ND	0.0021	ND	0.0019	ND	0.0019	ND	0.002	ND	0.0021	ND	0.002	ND	0.0021
Methyl tert butyl ether	500	1000	mg/kg	ND	0.0021	ND	0.0019	ND	0.0019	ND	0.002	ND	0.0021	ND	0.002	ND	0.0021
p/m-Xylene			mg/kg	ND	0.0021	ND	0.0019	ND	0.0019	0.0077	0.002	ND	0.0021	ND	0.002	ND	0.0021
o-Xylene			mg/kg	ND	0.0011	ND	0.00096	ND	0.00095	0.0089	0.00098	ND	0.001	ND	0.00098	ND	0.001
cis-1,2-Dichloroethene	500	1000	mg/kg	ND	0.0011	ND	0.00096	ND	0.00095	ND	0.00098	ND	0.001	ND	0.00098	ND	0.001
Acetone	500	1000	mg/kg	ND	0.011	ND	0.0096	ND	0.0095	ND	0.0098	ND	0.01	ND	0.0098	ND	0.01
2-Butanone	500	1000	mg/kg	ND	0.011	ND	0.0096	ND	0.0095	ND	0.0098	ND	0.01	ND	0.0098	ND	0.01
n-Butylbenzene	500	1000	mg/kg	ND	0.0011	ND	0.00096	ND	0.00095	0.00022J	0.00098	ND	0.001	ND	0.00098	ND	0.001
sec-Butylbenzene	500	1000	mg/kg	ND	0.0011	ND	0.00096	ND	0.00095	ND	0.00098	ND	0.001	ND	0.00098	0.0007J	0.001
tert-Butylbenzene	500	1000	mg/kg	ND	0.0021	ND	0.0019	ND	0.0019	ND	0.002	ND	0.0021	ND	0.002	ND	0.0021
n-Propylbenzene	500	1000	mg/kg	ND	0.0011	ND	0.00096	ND	0.00095	0.00037J	0.00098	ND	0.001	ND	0.00098	ND	0.001
1,3,5-Trimethylbenzene	190	380	mg/kg	ND	0.0021	ND	0.0019	ND	0.0019	0.0054	0.002	ND	0.0021	ND	0.002	0.00027J	0.0021
1,2,4-Trimethylbenzene	190	380	mg/kg	ND	0.0021	ND	0.0019	ND	0.0019	0.015	0.002	ND	0.0021	ND	0.002	0.00079J	0.0021
1,4-Dioxane	130	250	mg/kg	ND	0.086	ND	0.077	ND	0.076	ND	0.079	ND	0.083	ND	0.078	ND	0.084

Notes:
1. mg/kg = milligrams per kilogram
2. ND = Not detected above laboratory reporting limit
3. RL = Laboratory reporting limit
4. J = Estimated value
5. NY-RESC: New York NYCRR Part 375 Commercial Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.
6. NY-RESI: New York NYCRR Part 375 Industrial Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.

APPENDIX A

Test Boring Logs

HALEY ALDRICH

TEST BORING REPORT DRAFT

Boring No. HA20-2

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

File No.	135100-002
Sheet No.	1 of 2
Start	2 June 2020
Finish	2 June 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	940.0 (est.)
Datum	NGVD29
Location	See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1 3 4 3	S1 20	0.0 2.0	0.0	939.5 0.5	SM	Loose black silty SAND (SM), mps 3 mm, no odor, dry, contains sand seams			10	10	40	40				
							-FILL-										
	1 2 1 2	S2 16	2.0 4.0	0.0		SM	Very loose light brown silty SAND (SM), mps 3 mm, no structure, no odor, dry			10	30	30	30				
	1 1 3 6	S3 20	4.0 6.0	0.0		SM	Similar to S2			10	30	30	30				
5					935.0 5.0												
	2 3 3 4	S4 13	6.0 8.0	0.0		CL	Medium stiff gray lean CLAY (CL), no structure, no odor, moist, iron staining and trace gravel		5			10	85		L	M	M
	2 1 1 2	S5 20	8.0 10.0	0.0		CL	Very soft light brown lean CLAY (CL), no structure, no odor, moist					10	90		L	M	M
							-GLACIOLACUSTRINE-										
10	WOH 3 5 5	S6 11	10.0 12.0	0.0		CL	Medium stiff light brown to brown sandy lean CLAY with gravel (CL), no structure, no odor, moist	5	10	5	5	15	60			N	N
					927.0 13.0												
	4 11 7 7	S7 6	13.0 15.0	0.0		SW	Medium dense light brown to brown well graded SAND with gravel (SW), no structure, no odor, wet	10	10	10	25	40	5				
15							-GLACIAL OUTWASH-										
	4 6 4 5	S8 9	18.0 20.0	0.0	922.0 18.0	GW	Loose light brown to brown well graded GRAVEL with sand (GW), no structure, no odor, wet	30	30	5	5	25	5				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
6/2/20	09:45	0.5	N/A	30	17.1

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	30
Rock Cored (ft)	-
Samples	S10

Boring No. HA20-2

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-3 135100.GLB HA-TB+CORE+WELL-07-1.GDT \\HALEYALDRICH.COM\SHARE\CF\PROJECTS\135100002\FIELD\GINT\135100-002_TEST BORINGS.GPJ 11 Jun 20

HALEY ALDRICH

TEST BORING REPORT

DRAFT

Boring No. HA20-2
File No. 135100-002
Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
	21 19 23 25	S9 10	23.0 25.0	0.0		GW	Dense brown well graded GRAVEL with sand (GW), no structure, no odor, wet	30	30	5	5	25	5				
25							-GLACIAL OUTWASH-										
	17 14 25 23	S10 11	28.0 30.0	0.0		GW	Dense brown well graded GRAVEL with sand (GW), no odor, wet, contains fine sand pockets	25	25	5	10	30	5				
30					910.0 30.0		BOTTOM OF EXPLORATION 30.0 FT Note: Backfilled with soil cuttings.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-2

H&A-TEST BORING-07-3 135100.GLB HA-TB+CORE+WELL-07-1.GDT \\HALEYALDRICH.COM\SHARE\CF\PROJECTS\135100002\FIELD\GINT\135100-002_TEST BORINGS.GPJ 11 Jun 20

HALEY ALDRICH

TEST BORING REPORT DRAFT

Boring No. HA20-4

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

File No.	135100-002
Sheet No.	1 of 2
Start	2 June 2020
Finish	2 June 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	942.0 (est.)
Datum	NGVD29
Location	See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	7 12 12 16	S1 16	0.0 2.0	0.0		SM	Medium dense gray to dark brown silty SAND with gravel (SM), mps 0.75 in., no structure, no odor, dry, trace ash and cinders	15	5	10	20	20	30				
					940.0		-FILL-										
	13 10 11 11	S2 8	2.0 4.0	0.0	2.0	SP	Medium dense brown poorly graded SAND with gravel (SP), mps 2.0 in., no structure, no odor, dry	5	10	10	10	60	5				
					938.0												
	10 6 5 5	S3 11	4.0 6.0	0.0	4.0	SW	Medium dense brown well graded SAND with gravel (SW), mps 1.0 in., no structure, no odor, dry	5	10	20	30	30	5				
5	7 10 10 12	S4 9	6.0 8.0	0.0		SW	Similar to S3	5	10	20	10	50	5				
							-GLACIAL OUTWASH-										
	5 10 12 15	S5 13	8.0 10.0	0.0		SW	Medium dense brown well graded SAND with gravel (SW), mps 0.75 in., no odor, wet, contains fine sand pockets	5	10	20	25	35	5				
					932.0												
10	11 14 10 11	S6 3	10.0 12.0	0.0	10.0	GW	Medium dense brown well graded GRAVEL with sand (SW), mps 1.0 in., no structure, no odor, moist	40	30	5	5	15	5				
					929.0												
	7 9 11 18	S7 14	13.0 15.0	0.0	13.0	SW	Medium dense brown well graded SAND with gravel (SW), mps 1.0 in., no odor, moist, contains silt pockets	15	15	15	15	35	5				
15																	
	16 17 21 10	S8 16	18.0 20.0	0.0		SW	Dense brown well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, wet	15	15	35	15	15	5				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
06/01/20	12:30	0.5	-	30	17.5

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	30
Rock Cored (ft)	-
Samples	S10

Boring No. HA20-4

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY ALDRICH

TEST BORING REPORT

DRAFT

Boring No. HA20-4
File No. 135100-002
Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
	5 6 25 20	S9 15	23.0 25.0	0.0	919.0 23.0	SC	Dense brown clayey SAND with gravel (SC), mps 0.75 in., no odor, wet, contains 6.0 in. clay pocket from approximately 24.0 ft to 24.5 ft	5	10	20	15	15	35				
25							-GLACIAL OUTWASH-										
	8 14 16 16	S10 12	28.0 30.0	0.0	914.0 28.0	SW	Medium dense well graded SAND with gravel (SW), mps 1.0 in., no structure, no odor, wet	5	10	20	20	40	5				
30					912.0 30.0		BOTTOM OF EXPLORATION 30.0 FT Note: Backfilled with soil cuttings.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-4

H&A-TEST BORING-07-3 135100.GLB HA-TB+CORE+WELL-07-1.GDT \\HALEYALDRICH.COM\SHARE\CF\PROJECTS\135100002\FIELD\GINT\135100-002_TEST BORINGS.GPJ 11 Jun 20

TEST BORING REPORT DRAFT

Boring No. HA20-7

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

File No.	135100-002
Sheet No.	1 of 3
Start	2 June 2020
Finish	3 June 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	940.0 (est.)
Datum	NGVD29
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	6 10 5 4	S1 17	0.0 2.0	0.0	939.8 0.3	SP	-TOPSOIL- Medium dense brown poorly graded SAND with gravel (SP), mps 0.75 in., no structure, no odor, dry -FILL-	5	10	10	10	60	5				
	2 2 6 7	S2 15	2.0 4.0		938.0 2.0	SM	Loose light brown to black silty SAND (SM), mps 10 mm, no structure, no odor, dry, trace wood		5	15	20	30	30				
5	4 2 7 9	S3 20	4.0 6.0	0.0		SM	Loose black silty SAND (SM), mps 3 mm, no structure, no odor, dry			10	10	50	30				
	9 9 10 16	S4 17	6.0 8.0	0.0		SM	Medium dense brown to black silty SAND (SM), mps 6 mm, no structure, no odor, dry, trace coal		5	10	10	45	30				
	5 6 3 3	S5 6	8.0 10.0	0.0	932.0 8.0	SW	Loose light brown to brown well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, moist	5	10	25	25	30	5				
10	2 3 4 5	S6 7	10.0 12.0	0.0	930.0 10.0	SW-SM	Loose light brown to black well graded SAND with silt and gravel (SW-SM), mps 0.75 in., no structure, no odor, moist	5	10	15	25	35	10				
	4 8 15 12	S7 16	13.0 15.0	0.0	927.0 13.0	MH	Very stiff orange to gray sandy elastic SILT with gravel (MH), mps 19 mm., homogenous, no odor, moist -GLACIAL OUTWASH-	5	10	5	5	15	60				
15																	
	5 4 4 5	S8 6	18.0 20.0	5	922.0 18.0	SW	Loose brown to gray well graded SAND with gravel (SW), mps 0.75 in., slight petroleum-like odor, sheen visible, wet	5	10	25	25	30	5				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
06/03/20	11:30	0.5	N/A	60	20.2

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	60
Rock Cored (ft)	-
Samples	S18

Boring No. HA20-7

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

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Boring No. HA20-7
File No. 135100-002
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	12 5 7 12	S9 12	20.0 22.0	7		SW	Medium dense gray well graded SAND with gravel (SW), mps 0.75 in., slight petroleum-like odor, slight sheen visible, wet Note: Environmental sample collected from 20.0 to 22.0 ft.	5	10	25	25	30	5				
	10 7 6 7	S10 14	22.0 24.0	2		SW	Medium dense gray well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, wet	5	10	25	25	30	5				
	18 13 10 10	S11 9	24.0 26.0	0.0	916.0 24.0	GW	Medium dense gray well graded GRAVEL with sand (GW), mps 1.0 in., no structure, no odor, wet	25	25	10	15	20	5				
25																	
	4 9 6 6	S12 11	28.0 30.0	0.0	912.0 28.0	SW	Medium dense gray well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, wet	5	10	25	20	35	5				
30							-GLACIAL OUTWASH-										
	12 6 10 7	S13 5	33.0 35.0	0.0		SW	Medium dense brown well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, wet	5	10	25	25	40	5				
35																	
	9 7 9 11	S14 18	38.0 40.0	0.0	901.5 38.5	CL	Very stiff gray lean CLAY with sand (CL), mps 2 mm., well bonded, no odor, wet -GLACIOLACUSTRINE-			5	5	10	80		M	M	H
40																	
	15 13 11 12	S15 5	43.0 45.0	0.0	897.0 43.0	SW-SC	Medium dense gray well graded SAND with clay and gravel (SW-SC), mps 0.75 in., no structure, no odor, wet -GLACIAL OUTWASH-	5	10	15	20	40	10				
45																	
	8 15 20 26	S16 8	48.0 50.0	0.0	892.0 48.0	SM	Dense gray silty SAND with gravel (SM), mps 0.75 in., slightly bonded, no odor, wet	5	10	15	20	30	20				

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-7

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HALEY ALDRICH

TEST BORING REPORT

DRAFT

Boring No. HA20-7
File No. 135100-002
Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50																	
	6 19 15 18	S17 10	53.0 55.0	0.0		SM	Dense gray silty SAND with gravel (SM), mps 0.75 in., well bonded, no odor, wet	5	10	10	15	25	35				
55							-GLACIAL OUTWASH-										
	27 27 24 21	S18 0	58.0 60.0	0.0			No recovery										
60					880.0 60.0		BOTTOM OF EXPLORATION 60.0 FT Note: Backfilled with soil cuttings.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-7

H&A-TEST BORING-07-3 135100.GLB HA-TB+CORE+WELL-07-1.GDT \\HALEYALDRICH.COM\SHARE\CF\PROJECTS\135100002\FIELD\GINT\135100-002_TEST BORINGS.GPJ 11 Jun 20

HALEY ALDRICH

TEST BORING REPORT DRAFT

Boring No. HA20-10

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

File No.	135100-002
Sheet No.	1 of 2
Start	1 June 2020
Finish	1 June 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	943.0 (est.)
Datum	NGVD29
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	7 12 13 10	S1 17	0.0 2.0	0.0		SM	Dense brown to black silty SAND (SM), mps 5 mm., no structure, no odor, dry, contains foundry sand		5	15	10	40	30				
							-FILL-										
	6 4 4 5	S2 14	2.0 4.0	0.0		SM	Similar to S1, except loose		5	15	10	40	30				
	3 2 3 4	S3 12	4.0 6.0	0.0		SM	Loose brown to black silty SAND (SM), mps 5 mm, no structure, no odor, dry, trace ash		5	15	10	25	45				
5	11 14 16 13	S4 14	6.0 8.0	0.0		SM	Medium dense brown to black silty SAND (SM), mps 0.75 in., no structure, no odor, dry, race ash, contains foundry sand	5	5	10	10	40	30				
	3 3 3 2	S5 16	8.0 10.0	0.0		SM	Loose black silty SAND (SM), mps 7.0 mm, no structure, no odor, damp, trace coal		5	15	10	40	30				
10	5 5 5 9	S6 19	10.0 12.0	0.0		SM	Similar to S5		5	15	10	40	30				
				0.0	931.5 11.5	CL	Gray sandy lean CLAY (CL), mps 0.5 mm, no odor, damp, varves present				10	25	65				
							-GLACIOLACUSTRINE-										
	6 4 21 21	S7 18	13.0 15.0	0.0		CL	Similar to S6 below 11.5 ft, except very stiff				10	25	65				
15					928.5 14.5												
	14 17 18 21	S8 7	18.0 20.0	0.0		GW	Dense light brown to brown well graded GRAVEL with sand (GW), no structure, no odor, wet	35	30	5	5	20	5				
20							-GLACIAL OUTWASH-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
6/1/20	19:30	0.5	N/A	30	17.05

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	30
Rock Cored (ft)	-
Samples	S10

Boring No. HA20-10

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY ALDRICH

TEST BORING REPORT

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Boring No. HA20-10
File No. 135100-002
Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
	4 3 17 16	S9 6	23.0 25.0	0.0	920.0 23.0	SW	Medium dense light brown to brown well graded SAND with gravel (SW), no structure, no odor, wet	15	15	20	20	25	5				
25							-GLACIAL OUTWASH-										
	12 10 7 12	S10 6	28.0 30.0	0.0		SW	Medium dense light brown to brown well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, wet	10	15	20	20	30	5				
30					913.0 30.0		BOTTOM OF EXPLORATION 30.0 FT Note: Backfilled with soil cuttings.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-10

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HALEY ALDRICH

TEST BORING REPORT DRAFT

Boring No. HA20-14

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

File No.	135100-002
Sheet No.	1 of 2
Start	28 May 2020
Finish	28 May 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	941.0 (est.)
Datum	NGVD29
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	17 31 33 25	S1 14	0.0 2.0	0.0	940.5 0.5		-CONCRETE-										
						SW	Very dense light brown to black well graded SAND (SW), mps 5 mm, no structure, no odor, dry, trace foundry ash Note: Environmental sample collected from 1.0 ft to 2.0 ft.	5	5	20	25	35	10				
	16 10 15 10	S2 13	2.0 4.0	0.0	939.0 2.0	SM	Medium dense gray to brown silty SAND with gravel (SM), mps 5 mm, no structure, no odor, dry, trace foundry ash	5	10	15	20	25	25				
							-FILL-										
5	4 5 6 11	S3 11	4.0 6.0	0.0		SM	Medium dense light brown silty SAND with gravel (SM), mps 0.75 in., no structure, no odor, moist	5	10	10	20	30	25				
	13 10 11 10	S4 13	6.0 8.0	0.0	935.0 6.0	SW	Medium dense brown well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, moist	10	5	10	40	25	10				
	11 30 55	S5 5	8.0 9.5	0.0		SW	Very dense brown well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, moist	10	5	15	40	20	10				
10	24 26 36 22	S6 16	10.0 12.0	0.0		SW	Very dense light brown to brown well graded SAND with gravel (SW), mps 1.0 in., no structure, no odor, moist	20	10	15	15	30	10				
							-GLACIAL OUTWASH-										
	8 8 8 4	S7 0	13.0 15.0				No recovery in split spoon.										
15																	
	12 17 32 29	S8 12	18.0 20.0	0.0	923.0 18.0	GW	Dense brown well graded GRAVEL with sand (GW), mps 0.75 in., no structure, no odor, wet	30	25	5	5	25	10				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
5/28/20	10:00	0.5	N/A	30	17.80

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	30
Rock Cored (ft)	-
Samples	S10

Boring No. HA20-14

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY ALDRICH

TEST BORING REPORT

DRAFT

Boring No. HA20-14
File No. 135100-002
Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20					918.0												
	20 58	S9 7	23.0 24.0	0.0	23.0	SW	Very dense brown well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, wet	10	15	15	25	25	10				
25							-GLACIAL OUTWASH-										
	12 16 16 14	S10 6	28.0 30.0	0.0		SW	Dense gray to brown well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, wet	10	25	15	15	25	10				
30					911.0 30.0		BOTTOM OF EXPLORATION 30.0 FT Note: Backfilled with soil cuttings.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-14

H&A-TEST BORING-07-3 135100.GLB HA-TB+CORE+WELL-07-1.GDT \\HALEYALDRICH.COM\SHARE\CF\PROJECTS\135100002\FIELD\GINT\135100-002_TEST BORINGS.GPJ 11 Jun 20

HALEY ALDRICH

TEST BORING REPORT DRAFT

Boring No. HA20-15

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

File No.	135100-002
Sheet No.	1 of 2
Start	27 May 2020
Finish	27 May 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	941.0 (est.)
Datum	NGVD29
Location	See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	5 4 5 5	S1 15	0.0 2.0	0.0		SM	Loose light gray to black silty SAND (SM), mps 5 mm, no structure, no odor, dry, trace ash -FILL-		5	5	10	50	30				
	4 3 4 4	S2 14	2.0 4.0	0.0		SM	Loose black to dark brown silty SAND (SM), mps 5 mm, no structure, no odor, dry, trace ash Note: Environmental sample collected from 2.0 to 4.0 ft.		5	5	10	50	30				
5	5 5 4 9	S3 12	4.0 6.0	0.0		SM	Similar to S2, except black to light brown		5	5	10	50	30				
	13 22 21 24	S4 16	6.0 8.0	0.0	935.0 6.0	SW-SM	Dense brown to dark brown well graded SAND with silt and gravel (SW-SM), mps 0.75 in., no structure, no odor, dry	10	10	20	25	25	10				
	18 29 22 19	S5 16	8.0 10.0	0.0		SW-SM	Similar to S4, except very dense	10	10	20	25	25	10				
10	15 12 7 6	S6 6	10.0 12.0	0.0	931.0 10.0	SM	Medium dense brown to dark brown silty SAND with gravel (SM), no structure, no odor, moist -GLACIAL OUTWASH-	10	10	20	20	20	20				
	2 2 9 45	S7 11	13.0 15.0	0.0		SM	Medium dense brown silty SAND with gravel (SM), mps 1.0 in., no structure, no odor, wet	10	10	20	20	20	20				
15																	
	4 21 31 37	S8 24	18.0 20.0	0.0	923.0 18.0	SP	Very dense dark brown poorly graded SAND (SP), mps 0.75 in., no structure, no odor, wet	5	5	10	15	60	5				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
5/27/20	14:30	0.5	30	30	16.65

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	30
Rock Cored (ft)	-
Samples	S10

Boring No. HA20-15

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY ALDRICH

TEST BORING REPORT

DRAFT

Boring No. HA20-15
File No. 135100-002
Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
	15 25 36 17	S9 7	23.0 25.0	0.0		SP	Very dense dark brown poorly graded SAND with gravel (SP), mps 0.75 in., no structure, no odor, wet	10	10	10	15	50	5				
25							-GLACIAL OUTWASH-										
	16 18 16 18	S10 9	28.0 30.0	0.0	913.0 28.0	SW	Dense dark brown well graded SAND with gravel (SW), mps 1.0 in., no structure, no odor, wet	10	10	30	20	25	5				
30					911.0 30.0		BOTTOM OF EXPLORATION 30.0 FT Note: Backfilled with soil cuttings.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-15

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TEST BORING REPORT DRAFT

Boring No. HA20-16

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

File No.	135100-002
Sheet No.	1 of 2
Start	27 May 2020
Finish	27 May 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	941.0 (est.)
Datum	NGVD29
Location	See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2 2 2 2	S1 12	0.0 2.0	0.0		SM	Very loose black silty SAND (SM), mps 2 mm, no structure, no odor, dry -FILL-		5	10	10	40	35				
	9 13 12 10	S2 17	2.0 4.0	0.0	939.0 2.0	SW-SM	Medium dense light brown to brown well graded SAND with silt and gravel (SW-SM), mps 6 mm, no structure, no odor, dry	20	5	10	15	40	10				
5	6 6 5 5	S3 11	4.0 6.0	0.0		SW-SM	Medium dense light brown to brown well graded SAND with silt (SW-SM), mps 6 mm, no structure, no odor, moist	5	5	20	25	35	10				
	6 9 10 12	S4 12	6.0 8.0	0.0		SW-SM	Medium dense brown to dark brown well graded SAND with silt and gravel (SW-SM), mps 5 mm, no structure, no odor, moist Note: Environmental sample collected from 6.0 to 8.0 ft.	10	10	20	25	25	10				
	9 17 20 25	S5 15	8.0 10.0	0.0	933.0 8.0	SW	Dense brown well graded SAND with gravel (SW), mps 5 mm, no structure, no odor, moist	10	10	20	25	25	10				
10	60/5"	S6 2	10.0 10.4				No recovery, gravel blocking split spoon sampler, two cobbles in split spoon. -GLACIAL OUTWASH-										
15	60/5"	S7 3	15.0 15.4	0.0	926.0 15.0	GW-GM	Very dense brown well graded GRAVEL with silt and sand (GW-GM), mps 1.0 in., no structure, no odor, moist	35	15	10	20	10	10				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
5/27/20	12:20	0.5	N/A	30	17.18

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	30
Rock Cored (ft)	-
Samples	S10

Boring No. HA20-16

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY ALDRICH

TEST BORING REPORT

DRAFT

Boring No. HA20-16
File No. 135100-002
Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	11 22 36 39	S8 16	20.0 22.0	0.0	921.0 20.0	GW-GM	Very dense brown well graded GRAVEL with silt and sand (GW-GM), mps 1.0 in., no structure, no odor, wet -GLACIAL OUTWASH-	35	15	10	15	15	10				
25	15 25 28 27	S9 14	25.0 27.0	0.0	916.0 25.0	SW-SM	Very dense dark brown well graded SAND with silt and gravel (SW-SM), mps 1.0 in., no structure, no odor, wet	10	10	15	15	40	10				
	9 18 24 29	S10 18	28.0 30.0	0.0		SW-SM	Similar to S9, except dense	10	10	15	15	40	10				
30					911.0 30.0		BOTTOM OF EXPLORATION 30.0 FT Note: Backfilled with soil cuttings.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-16

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HALEY ALDRICH

TEST BORING REPORT DRAFT

Boring No. HA20-18

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

File No.	135100-002
Sheet No.	1 of 3
Start	29 May 2020
Finish	1 June 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	943.0 (est.)
Datum	NGVD29
Location	See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1 3 5 5	S1 12	0.0 2.0	0.0		OL/ OH	Medium stiff gray ORGANIC SOIL with sand (OL/OH), mps 3 mm., no structure, no odor, dry			5	5	10	80				
					941.5 1.5		-TOPSOIL-										
	7 6 4 3	S2 10	2.0 4.0	0.0		SM	Loose black silty SAND (SM), mps 2 mm, no odor, dry, sand seams, foundry sand			15	15	40	30				
							-FILL-										
5	4 3 3 3	S3 11	4.0 6.0	0.0		SM	Similar to S2			15	15	40	30				
	4 4 3 3	S4 10	6.0 8.0	0.0		SM	Loose black silty SAND (SM), mps 8 mm, no odor, dry, 5 mm sand seams, foundry sand, trace gravel		5	10	15	40	20				
	3 3 2 3	S5 6	8.0 10.0	0.0		SM	Similar to S4			15	15	40	30				
10	2 2 3 11	S6 12	10.0 12.0	0.0	933.2 9.8	CL	Medium stiff gray lean CLAY (CL), mps 0.5 mm, no odor, dry					10	90				
					931.5 11.5		-GLACIOLACUSTRINE-										
	15 16 16 29	S7 9	13.0 15.0	0.0		SW	Dense brown well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, dry	15	15	20	20	25	5				
15							-GLACIAL OUTWASH-										
	16 16 12 9	S8 10	18.0 20.0	0.0		SW	Medium dense gray well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, wet	15	15	20	20	25	5				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
6/1/20	11:10	0.5	N/A	65	44.1

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	65
Rock Cored (ft)	-
Samples	S17

Boring No. HA20-18

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY ALDRICH

TEST BORING REPORT

DRAFT

Boring No. HA20-18
File No. 135100-002
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
	60/4"	S9 1	23.0 23.3	0.0		SW	Similar to S8, except very dense	15	15	20	20	25	5				
25							-GLACIAL OUTWASH-										
	4 8 11 13	S10 21	28.0 30.0	0.0	914.0 29.0	SW	Medium dense gray well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, wet	5	10	20	20	40	5				
30																	
	2 3 5 5	S11 19	33.0 35.0	0.0		CL	Medium stiff gray lean CLAY (CL), mps 0.1 mm, no structure, no odor, wet					5	95		M	M	H
35																	
	WOH 1 3 4	S12 20	38.0 40.0	0.0		CL	Similar to S11, except soft					5	95		M	M	H
40							-GLACIOLACUSTRINE-										
	WOH WOH 2 3	S13 23	43.0 45.0	0.0		CL	Very soft gray lean CLAY (CL), mps 0.1 mm, no structure, no odor, wet					5	95				
45																	
	WOH 3 2 3	S14 24	48.0 50.0	0.0		CL	Similar to S13, except medium stiff					5	95		M	M	H

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-18

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HALEY ALDRICH

TEST BORING REPORT

DRAFT

Boring No. HA20-18
File No. 135100-002
Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50																	
	WOH WOH 2 3	S15 24	53.0 55.0	0.0		CL	Very soft gray lean CLAY (CL), mps 0.1 mm, no structure, no odor, wet					5	95				
55							-GLACIOLACUSTRINE-										
	WOH WOH WOH 1	S16 24	58.0 60.0	0.0		CL	Very soft gray lean CLAY (CL), mps 0.1 mm, no structure, no odor, wet					5	95				
60																	
	WOH WOH 2 4	S17 24	63.0 65.0	0.0		CL	Similar to S16					5	95				
65					878.0 65.0		BOTTOM OF EXPLORATION 65.0 FT Note: Backfilled with soil cuttings, additional gray cuttings leftover placed in 55 gallon drum.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-18

H&A-TEST BORING-07-3 135100.GLB HA-TB+CORE+WELL-07-1.GDT \\HALEYALDRICH.COM\SHARE\CF\PROJECTS\135100002\FIELD\GINT\135100-002_TEST BORINGS.GPJ 11 Jun 20

HALEY ALDRICH

TEST BORING REPORT DRAFT

Boring No. HA20-21

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

File No.	135100-002
Sheet No.	1 of 2
Start	29 May 2020
Finish	29 May 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	940.5 (est.)
Datum	NGVD29
Location	See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1 3 4 4	S1 17	0.0 2.0	0.0	940.0 0.5		-TOPSOIL-										
						SM	Loose black silty SAND (SM), mps 2 mm, no structure, no odor, dry, contains foundry sand			15	15	40	30				
	8 6 5 5	S2 14	2.0 4.0	0.0		SM	Similar to S1, except medium dense			15	15	40	30				
							-FILL-										
	5 6 6 5	S3 8	4.0 6.0	0.0		SM	Similar to S1, except trace gravel	5		10	15	40	30				
5	5 4 4 4	S4 12	6.0 8.0	0.0		SM	Loose black silty SAND (SM), mps 2 mm, no structure, no odor, moist, contains foundry sand										
					933.0 7.5												
	WOH WOH 5 16	S5 10	8.0 10.0	0.0		CL	Medium stiff gray-brown lean CLAY with gravel (CL), mps 8 mm, no structure, no odor, moist		15			10	75				
							-GLACIOLACUSTRINE-										
					931.0 9.5												
10	5 18 27 28	S6 17	10.0 12.0	0.0		SW	Dense light brown to brown well graded SAND with gravel (SW), mps 8 mm, no structure, no odor, moist	10	10	20	20	35	5				
	12 11 20 28	S7 7	13.0 15.0	0.0		SW	Dense light brown to gray-brown well graded SAND with gravel (SW), mps 1.0 in., no odor, moist, contains gravel pockets	20	10	10	20	35	5				
15							-GLACIAL OUTWASH-										
	4 1 2 2	S8 13	18.0 20.0	0.0		SW	Very loose gray-brown well graded SAND (SW), mps 4 mm, no structure, no odor, wet		5	25	25	40	5				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
5/29/20	12:30	0.5	N/A	30	12.60

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	30
Rock Cored (ft)	-
Samples	S10

Boring No. HA20-21

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

DRAFT

Boring No. HA20-21
File No. 135100-002
Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
	7 8 9 4	S9 11	23.0 25.0	0.0		SW	Medium dense, brown well graded SAND (SW), mps 3 mm, no structure, no odor, wet -GLACIAL OUTWASH-			25	30	40	5				
25					912.5												
	7 6 8 10	S10 18	28.0 30.0	0.0	28.0	CL	Stiff gray lean CLAY (CL), mps 0.1 mm, no structure, no odor, wet -GLACIOLACUSTRINE-					5	95				
30					910.5 30.0		BOTTOM OF EXPLORATION 30.0 FT Note: Backfilled with soil cuttings.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-21

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TEST BORING REPORT DRAFT

Boring No. HA20-22

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

File No.	135100-002
Sheet No.	1 of 3
Start	28 May 2020
Finish	29 May 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	939.5 (est.)
Datum	NGVD29
Location	See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	6 7 4 3	S1 19	0.0 2.0	0.0	939.0 0.5		-ASPHALT-										
						SM	Medium dense light brown to black silty SAND (SM), mps 2 mm, no structure, no odor, dry, trace foundry gravel			15	15	40	30				
	2 2 4 2	S2 13	2.0 4.0	0.0		SM	Loose black silty SAND (SM), mps 4 mm, no structure, no odor, dry, trace foundry sand Note: Environmental sample collected from 2.0 ft to 4.0 ft. -FILL-			15	15	40	30				
	3 2 1 1	S3 11	4.0 6.0	0.0		SM	Similar to S2			15	15	40	30				
5					934.0 5.5												
	1 1 5 10	S4 4	6.0 8.0	0.0		CL	Medium stiff black to gray lean CLAY with sand (CL), mps 0.4 mm, no structure, no odor, moist					15	85				
	2 1 1 2	S5 22	8.0 10.0	0.0		CL	Very soft gray lean CLAY with sand (CL), mps 0.4 mm, no structure, no door, moist -GLACIOLACUSTRINE-					15	85				
10	1 1 2 13	S6 18	10.0 12.0	0.0		CL	Soft gray lean CLAY (CL), mps 0.4 mm, no structure, no odor, moist, trace gravel					10	90				
	7 7 8 8	S7 3	12.0 14.0	0.0		CL	Stiff sandy lean CLAY with gravel (CL), no structure, no odor, moist		15	5	5	5	70				
15	5 6 8 7	S8 4	15.0 17.0	0.0		CL	Similar to S7	5	15	5	5	10	60				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
5/29/20	10:10	0.5	N/A	65	12.50

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	65
Rock Cored (ft)	-
Samples	S18

Boring No. HA20-22

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY ALDRICH

TEST BORING REPORT

DRAFT

Boring No. HA20-22
File No. 135100-002
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	4 2 3 9	S9 7	20.0 22.0	0.0	919.5 20.0	SP-SM	Loose gray poorly graded SAND with silt and gravel (SP-SM), mps 0.75 in., no structure, no odor, wet	5	10	5	5	65	10				
25	9 13 16 16	S10 24	25.0 27.0	0.0	914.5 25.0	SP	Medium dense poorly graded SAND with gravel (SP), mps 1.0 in., no structure, no odor, wet -GLACIAL OUTWASH-	5	10	5	5	70	5				
30	4 11 9 10	S11 5	30.0 32.0	0.0	909.5 30.0	SW	Medium dense gray well graded SAND with gravel (SW), mps 1.0 in., no structure, no odor, wet	10	20	10	25	30	5				
35	5 6 7 8	S12 4	35.0 37.0	0.0		SW	Similar to S11	10	20	15	20	30	5				
40	1 2 4 5	S13 22	40.0 42.0	0.0	899.5 40.0	CL	Medium stiff gray lean CLAY with sand (CL), mps 2 mm, no structure, no odor, wet			5	5	10	80		M	M	H
45	1 3 3 5	S14 22	45.0 47.0	0.0		CL	Medium stiff gray lean CLAY (CL), mps 0.1 mm, no structure, no odor, wet -GLACIOLACUSTRINE-					5	95		M	M	H

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-22

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HALEY ALDRICH

TEST BORING REPORT

DRAFT

Boring No. HA20-22
File No. 135100-002
Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50	1 1 5 8	S15 19	50.0 52.0	0.0		CL	Medium stiff gray lean CLAY (CL), mps 0.1 mm, no structure, no odor, wet					5	95		M	M	H
							-GLACIOLACUSTRINE-										
55	WOH WOH 1 5	S16 24	55.0 57.0	0.0		CL	Similar to S15, except very soft					5	95		M	M	H
	10 12 15 14	S17 6	58.0 60.0	0.0		CL	Very stiff gray lean CLAY with gravel (CL), mps 0.75 in., no odor, wet, frequent gravel	10	10			5	75				
60					876.5 63.0												
	27 42 27 48	S18 4	63.0 65.0	0.0		SP	Very dense gray poorly graded SAND with gravel (SP), mps 0.75 in., no structure, no odor, wet	5	10	5	5	70	5				
							-GLACIAL OUTWASH-										
65					874.5 65.0		BOTTOM OF EXPLORATION 65.0 FT Note: Backfilled with soil cuttings.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-22

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HALEY ALDRICH

TEST BORING REPORT DRAFT

Boring No. HA20-23

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

File No.	135100-002
Sheet No.	1 of 2
Start	29 May 2020
Finish	29 May 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	941.0 (est.)
Datum	NGVD29
Location	See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	22 12 15 14	S1 6	0.0 2.0	0.0	940.5 0.5	SM	-CONCRETE- Medium dense black silty SAND with gravel (SM), mps 0.75 in., no structure, no odor, moist	10	10	5	10	35	30				
	11 9 5 8	S2 14	2.0 4.0	0.0		SM	Medium dense black silty SAND (SM), mps 5 mm, no structure, no odor, dry, trace foundry sand Note: Environmental sample collected from 2.0 ft to 4.0 ft. -FILL-		5	5	10	50	30				
5	4 4 5 4	S3 10	4.0 6.0	0.0		SM	Similar to S2, except loose		5	5	10	50	30				
	3 6 3 3	S4 16	6.0 8.0	0.0		SM	Similar to S2, except no foundry sand and loose		5	5	10	50	30				
	1 1 1 5	S5 16	8.0 10.0	0.0	932.0 9.0	CL	Very soft brown to gray lean CLAY (CL), mps 0.25 mm, no structure, no odor, moist					10	90				
10	3 6 5 4	S6 10	10.0 12.0	0.0	931.0 10.0	SC	-GLACIOLACUSTRINE- Medium dense clayey SAND with gravel (SC), mps 0.75 in., no structure, no odor, moist	5	10	5	15	25	40				
					928.0												
	4 10 7 8	S7 11	13.0 15.0	0.0	13.0	SW-SC	Medium dense light brown well graded SAND with clay and gravel (SW-SC), mps 0.75 in., no structure, no odor, moist	5	10	10	25	40	10				
15							-GLACIAL OUTWASH-										
	27 24 18 24	S8 2	18.0 20.0	0.0	923.0 18.0	SW	Dense brown well graded SAND (SW), mps 3 mm, no structure, no odor, wet			30	30	35	5				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
5/29/20	12:45	0.5	N/A	32	17.25

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	32
Rock Cored (ft)	-
Samples	S11

Boring No. HA20-23

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY ALDRICH

TEST BORING REPORT

DRAFT

Boring No. HA20-23
File No. 135100-002
Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20					918.0												
	20 27 24 28	S9 16	23.0 25.0	0.0	23.0	GW	Very dense gray well graded GRAVEL with sand (GW), mps 0.75 in., no structure, no odor, wet	25	30	10	10	20	5				
25							-GLACIAL OUTWASH-										
	10 6 5 6	S10 8	28.0 30.0	0.0	913.0 28.0	SW	Medium dense gray well graded SAND with gravel (SW), mps 1.0 in., no structure, no odor, wet	15	15	15	20	30	5				
30	8 11 10 6	S11 5	30.0 32.0	0.0	911.0 30.0	GW	Medium dense gray well graded GRAVEL with sand (GW), mps 1.0 in., no structure, no odor, wet	25	30	10	10	20	5				
					909.0 32.0		BOTTOM OF EXPLORATION 32.0 FT Note: Backfilled with soil cuttings.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA20-23

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HALEY ALDRICH

TEST BORING REPORT DRAFT

Boring No. HA20-33

Project	Former Ingersoll Rand Foundry Site, Painted Post, New York
Client	Tyoga Container Company, Inc.
Contractor	Nothnagle Drilling, Inc.

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck: Brainard Killman BK-81
Inside Diameter (in.)	3.25	1.375	-	Bit Type: Cutting Head
Hammer Weight (lb)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: HSA
				Hoist/Hammer: Winch Automatic Hammer
				PID Make & Model: Honeywell MiniRAE 3000

File No.	135100-002
Sheet No.	1 of 1
Start	3 June 2020
Finish	3 June 2020
Driller	K. Busch
H&A Rep.	S. Larkin
Elevation	939.0 (est.)
Datum	NGVD29
Location	See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	PID Readings (ppm)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1 1 7 9	S1 20	0.0 2.0	0.0		SM	Loose black silty SAND (SM), mps 0.25 in., no structure, no odor, moist, trace coal and foundry sand/ash -FILL-			10	10	50	30				
	8 6 8 8	S2 16	2.0 4.0	0.0		SM	Medium dense dark brown to black silty SAND (SM), mps 10 mm, no structure, no odor, dry, trace coal and foundry sand/ash		5	10	10	40	35				
5	3 4 4 3	S3	4.0 6.0	0.0		SM	Loose dark brown to black silty SAND (SM), mps 8 mm, no structure, no odor, dry, trace wood and foundry sand/ash		5	10	10	35	40				
	3 4 7 9	S4 12	6.0 8.0	0.0		SM	Medium dense black silty SAND (SM), mps 8 mm, no structure, no odor, dry, trace coal and foundry sand/ash		5	10	10	30	45				
	3 4 4 3	S5 13	8.0 10.0	0.0		SM	Similar to S4		5	5	10	35	45				
10	4 2 3 7	S6 5	10.0 12.0	0.0		SM	Similar to S4		5	5	10	35	45				
				0.0	927.5 11.5	CL	Medium stiff gray to black lean CLAY with sand (CL), mps 2 mm, no structure, no odor, moist				5	15	80				
	12 15 19 24	S7 11	12.0 14.0	0.0	926.0 13.0	SW	Dense light brown to brown well graded SAND with gravel (SW), mps 0.75 in., no structure, no odor, moist	5	10	15	25	40	5				
					925.0 14.0		-GLACIAL OUTWASH- BOTTOM OF EXPLORATION 14.0 FT Note: Backfilled with soil cuttings.										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water
6/3/20	14:00	0.5	N/A	14	

Sample ID

O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (ft)	14
Rock Cored (ft)	-
Samples	S7

Boring No. HA20-33

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size (mps) is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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APPENDIX B

Analytical Results

ANALYTICAL REPORT

Lab Number:	L2021799
Client:	Haley & Aldrich 200 Town Centre Drive Suite 2 Rochester, NY 14623-4264
ATTN:	John DiGenova
Phone:	(585) 359-9000
Project Name:	FORMER INGERSOIL RAND FOUNDRY
Project Number:	135100-002
Report Date:	05/28/20

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2021799
Report Date: 05/28/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2021799-01	2020-0527-1100-HA20-16	SOIL	PAINTED POST, NEW YORK	05/27/20 11:00	05/27/20
L2021799-02	2020-0527-1300-HA20-15	SOIL	PAINTED POST,NEW YORK	05/27/20 13:00	05/27/20

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2021799
Project Number:	135100-002	**Report Date:**	05/28/20

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2021799
Project Number:	135100-002	**Report Date:**	05/28/20

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

Any reported concentrations that are below 200 ug/kg may be biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.

L2021799-02 (2020-0527-1300-HA20-15): The internal standard (IS) response for 1,4-dichlorobenzene-d4 (31%) and the surrogate recovery for 4-bromofluorobenzene (133%) were outside the acceptance criteria; however, re-analysis achieved similar results: 1,4-dichlorobenzene-d4 (32%) and 4-bromofluorobenzene (136%). The results of both analyses are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 05/28/20

ORGANICS

VOLATILES

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-01
Client ID: 2020-0527-1100-HA20-16
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/27/20 11:00
Date Received: 05/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/20 10:00
Analyst: MV
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	5.3	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	0.22	J	ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.25	1
Tetrachloroethene	ND		ug/kg	0.53	0.21	1
Chlorobenzene	ND		ug/kg	0.53	0.14	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.27	1
1,1,1-Trichloroethane	ND		ug/kg	0.53	0.18	1
Benzene	ND		ug/kg	0.53	0.18	1
Toluene	ND		ug/kg	1.1	0.58	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Vinyl chloride	ND		ug/kg	1.1	0.36	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1
Trichloroethene	ND		ug/kg	0.53	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.21	1
p/m-Xylene	ND		ug/kg	2.1	0.60	1
o-Xylene	ND		ug/kg	1.1	0.31	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
Acetone	ND		ug/kg	11	5.1	1
2-Butanone	ND		ug/kg	11	2.4	1
n-Butylbenzene	ND		ug/kg	1.1	0.18	1
sec-Butylbenzene	ND		ug/kg	1.1	0.16	1
tert-Butylbenzene	ND		ug/kg	2.1	0.13	1
n-Propylbenzene	ND		ug/kg	1.1	0.18	1

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-01 Date Collected: 05/27/20 11:00

Client ID: 2020-0527-1100-HA20-16 Date Received: 05/27/20

Sample Location: PAINTED POST, NEW YORK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/kg	2.1	0.21	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.1	0.36	1
1,4-Dioxane	ND		ug/kg	86	38.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	110		70-130

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-02
Client ID: 2020-0527-1300-HA20-15
Sample Location: PAINTED POST,NEW YORK

Date Collected: 05/27/20 13:00
Date Received: 05/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/20 10:28
Analyst: MV
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	4.8	2.2	1
1,1-Dichloroethane	ND		ug/kg	0.96	0.14	1
Chloroform	0.24	J	ug/kg	1.4	0.13	1
Carbon tetrachloride	ND		ug/kg	0.96	0.22	1
Tetrachloroethene	ND		ug/kg	0.48	0.19	1
Chlorobenzene	ND		ug/kg	0.48	0.12	1
1,2-Dichloroethane	ND		ug/kg	0.96	0.25	1
1,1,1-Trichloroethane	ND		ug/kg	0.48	0.16	1
Benzene	0.27	J	ug/kg	0.48	0.16	1
Toluene	0.62	J	ug/kg	0.96	0.52	1
Ethylbenzene	ND		ug/kg	0.96	0.14	1
Vinyl chloride	ND		ug/kg	0.96	0.32	1
1,1-Dichloroethene	ND		ug/kg	0.96	0.23	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	0.13	1
Trichloroethene	ND		ug/kg	0.48	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,3-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	0.16	1
Methyl tert butyl ether	ND		ug/kg	1.9	0.19	1
p/m-Xylene	ND		ug/kg	1.9	0.54	1
o-Xylene	ND		ug/kg	0.96	0.28	1
cis-1,2-Dichloroethene	ND		ug/kg	0.96	0.17	1
Acetone	ND		ug/kg	9.6	4.6	1
2-Butanone	ND		ug/kg	9.6	2.1	1
n-Butylbenzene	ND		ug/kg	0.96	0.16	1
sec-Butylbenzene	ND		ug/kg	0.96	0.14	1
tert-Butylbenzene	ND		ug/kg	1.9	0.11	1
n-Propylbenzene	ND		ug/kg	0.96	0.16	1

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-02 Date Collected: 05/27/20 13:00

Client ID: 2020-0527-1300-HA20-15 Date Received: 05/27/20

Sample Location: PAINTED POST,NEW YORK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/kg	1.9	0.19	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.9	0.32	1
1,4-Dioxane	ND		ug/kg	77	34.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	127		70-130
4-Bromofluorobenzene	**133**	Q	70-130
Dibromofluoromethane	112		70-130

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-02 R
Client ID: 2020-0527-1300-HA20-15
Sample Location: PAINTED POST,NEW YORK

Date Collected: 05/27/20 13:00
Date Received: 05/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/28/20 11:51
Analyst: MV
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	4.8	2.2	1
1,1-Dichloroethane	ND		ug/kg	0.95	0.14	1
Chloroform	0.21	J	ug/kg	1.4	0.13	1
Carbon tetrachloride	ND		ug/kg	0.95	0.22	1
Tetrachloroethene	ND		ug/kg	0.48	0.19	1
Chlorobenzene	ND		ug/kg	0.48	0.12	1
1,2-Dichloroethane	ND		ug/kg	0.95	0.24	1
1,1,1-Trichloroethane	ND		ug/kg	0.48	0.16	1
Benzene	0.24	J	ug/kg	0.48	0.16	1
Toluene	0.63	J	ug/kg	0.95	0.52	1
Ethylbenzene	ND		ug/kg	0.95	0.13	1
Vinyl chloride	ND		ug/kg	0.95	0.32	1
1,1-Dichloroethene	ND		ug/kg	0.95	0.23	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	0.13	1
Trichloroethene	ND		ug/kg	0.48	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,3-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	0.16	1
Methyl tert butyl ether	ND		ug/kg	1.9	0.19	1
p/m-Xylene	ND		ug/kg	1.9	0.53	1
o-Xylene	ND		ug/kg	0.95	0.28	1
cis-1,2-Dichloroethene	ND		ug/kg	0.95	0.17	1
Acetone	ND		ug/kg	9.5	4.6	1
2-Butanone	ND		ug/kg	9.5	2.1	1
n-Butylbenzene	ND		ug/kg	0.95	0.16	1
sec-Butylbenzene	ND		ug/kg	0.95	0.14	1
tert-Butylbenzene	ND		ug/kg	1.9	0.11	1
n-Propylbenzene	ND		ug/kg	0.95	0.16	1

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-02 R
Client ID: 2020-0527-1300-HA20-15
Sample Location: PAINTED POST,NEW YORK

Date Collected: 05/27/20 13:00
Date Received: 05/27/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/kg	1.9	0.18	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.9	0.32	1
1,4-Dioxane	ND		ug/kg	76	33.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	125		70-130
4-Bromofluorobenzene	**136**	Q	70-130
Dibromofluoromethane	108		70-130

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/28/20 08:11
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1375231-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.27	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/28/20 08:11
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1375231-5					
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	106		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2021799
Report Date: 05/28/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1375231-3 WG1375231-4								
Methylene chloride	102		103		70-130	1		30
1,1-Dichloroethane	119		119		70-130	0		30
Chloroform	108		108		70-130	0		30
Carbon tetrachloride	105		104		70-130	1		30
Tetrachloroethene	116		113		70-130	3		30
Chlorobenzene	112		112		70-130	0		30
1,2-Dichloroethane	108		110		70-130	2		30
1,1,1-Trichloroethane	108		107		70-130	1		30
Benzene	119		119		70-130	0		30
Toluene	115		113		70-130	2		30
Ethylbenzene	112		111		70-130	1		30
Vinyl chloride	84		85		67-130	1		30
1,1-Dichloroethene	101		100		65-135	1		30
trans-1,2-Dichloroethene	117		117		70-130	0		30
Trichloroethene	113		112		70-130	1		30
1,2-Dichlorobenzene	109		108		70-130	1		30
1,3-Dichlorobenzene	108		108		70-130	0		30
1,4-Dichlorobenzene	106		105		70-130	1		30
Methyl tert butyl ether	104		106		66-130	2		30
p/m-Xylene	116		114		70-130	2		30
o-Xylene	116		116		70-130	0		30
cis-1,2-Dichloroethene	108		107		70-130	1		30
Acetone	107		94		54-140	13		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2021799
Report Date: 05/28/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1375231-3 WG1375231-4								
2-Butanone	91		96		70-130	5		30
n-Butylbenzene	105		102		70-130	3		30
sec-Butylbenzene	110		107		70-130	3		30
tert-Butylbenzene	101		100		70-130	1		30
n-Propylbenzene	105		104		70-130	1		30
1,3,5-Trimethylbenzene	102		101		70-130	1		30
1,2,4-Trimethylbenzene	103		102		70-130	1		30
1,4-Dioxane	103		114		65-136	10		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		97		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	102		102		70-130

SEMIVOLATILES

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-01
Client ID: 2020-0527-1100-HA20-16
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/27/20 11:00
Date Received: 05/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 05/28/20 06:48
Analyst: SZ
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 05/28/20 03:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	19.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Fluoranthene	ND		ug/kg	110	21.	1
Naphthalene	ND		ug/kg	180	22.	1
Benzo(a)anthracene	ND		ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	45.	1
Benzo(b)fluoranthene	ND		ug/kg	110	31.	1
Benzo(k)fluoranthene	ND		ug/kg	110	30.	1
Chrysene	ND		ug/kg	110	19.	1
Acenaphthylene	ND		ug/kg	150	28.	1
Anthracene	ND		ug/kg	110	36.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	180	18.	1
Phenanthrene	ND		ug/kg	110	22.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	21.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	ND		ug/kg	110	18.	1
Dibenzofuran	ND		ug/kg	180	18.	1
Pentachlorophenol	ND		ug/kg	150	41.	1
Phenol	ND		ug/kg	180	28.	1
2-Methylphenol	ND		ug/kg	180	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	29.	1

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-01 Date Collected: 05/27/20 11:00

Client ID: 2020-0527-1100-HA20-16 Date Received: 05/27/20

Sample Location: PAINTED POST, NEW YORK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	88		25-120
Phenol-d6	85		10-120
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	83		30-120
2,4,6-Tribromophenol	111		10-136
4-Terphenyl-d14	75		18-120

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-02
Client ID: 2020-0527-1300-HA20-15
Sample Location: PAINTED POST,NEW YORK

Date Collected: 05/27/20 13:00
Date Received: 05/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 05/28/20 07:11
Analyst: SZ
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 05/28/20 03:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	64	J	ug/kg	140	18.	1
Hexachlorobenzene	ND		ug/kg	100	20.	1
Fluoranthene	2600		ug/kg	100	20.	1
Naphthalene	110	J	ug/kg	180	21.	1
Benzo(a)anthracene	2000		ug/kg	100	20.	1
Benzo(a)pyrene	2500		ug/kg	140	43.	1
Benzo(b)fluoranthene	5100		ug/kg	100	30.	1
Benzo(k)fluoranthene	1300		ug/kg	100	28.	1
Chrysene	2700		ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	27.	1
Anthracene	180		ug/kg	100	34.	1
Benzo(ghi)perylene	2500		ug/kg	140	21.	1
Fluorene	37	J	ug/kg	180	17.	1
Phenanthrene	990		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	690		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	2400		ug/kg	140	24.	1
Pyrene	2200		ug/kg	100	17.	1
Dibenzofuran	56	J	ug/kg	180	17.	1
Pentachlorophenol	ND		ug/kg	140	39.	1
Phenol	ND		ug/kg	180	26.	1
2-Methylphenol	ND		ug/kg	180	27.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	28.	1

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-02 Date Collected: 05/27/20 13:00

Client ID: 2020-0527-1300-HA20-15 Date Received: 05/27/20

Sample Location: PAINTED POST,NEW YORK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	83		25-120
Phenol-d6	85		10-120
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	90		30-120
2,4,6-Tribromophenol	108		10-136
4-Terphenyl-d14	86		18-120

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/28/20 01:10
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 05/27/20 14:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1374866-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Fluoranthene	ND		ug/kg	99	19.
Naphthalene	ND		ug/kg	160	20.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Dibenzofuran	ND		ug/kg	160	16.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/28/20 01:10
Analyst: SZ

Extraction Method: EPA 3546
Extraction Date: 05/27/20 14:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1374866-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		25-120
Phenol-d6	68		10-120
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	56		30-120
2,4,6-Tribromophenol	58		10-136
4-Terphenyl-d14	68		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2021799
Report Date: 05/28/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1374866-2 WG1374866-3								
Acenaphthene	51		67		31-137	27		50
Hexachlorobenzene	46		61		40-140	28		50
Fluoranthene	52		70		40-140	30		50
Naphthalene	52		67		40-140	25		50
Benzo(a)anthracene	49		66		40-140	30		50
Benzo(a)pyrene	50		69		40-140	32		50
Benzo(b)fluoranthene	51		71		40-140	33		50
Benzo(k)fluoranthene	50		66		40-140	28		50
Chrysene	49		66		40-140	30		50
Acenaphthylene	52		68		40-140	27		50
Anthracene	53		70		40-140	28		50
Benzo(ghi)perylene	50		67		40-140	29		50
Fluorene	53		70		40-140	28		50
Phenanthrene	51		66		40-140	26		50
Dibenzo(a,h)anthracene	49		68		40-140	32		50
Indeno(1,2,3-cd)pyrene	51		70		40-140	31		50
Pyrene	52		68		35-142	27		50
Dibenzofuran	51		66		40-140	26		50
Pentachlorophenol	42		55		17-109	27		50
Phenol	51		65		26-90	24		50
2-Methylphenol	56		72		30-130.	25		50
3-Methylphenol/4-Methylphenol	58		72		30-130	22		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2021799
Report Date: 05/28/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1374866-2 WG1374866-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	52		66		25-120
Phenol-d6	52		65		10-120
Nitrobenzene-d5	49		63		23-120
2-Fluorobiphenyl	41		52		30-120
2,4,6-Tribromophenol	41		57		10-136
4-Terphenyl-d14	45		60		18-120

PCBS

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2021799
Report Date: 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-01
Client ID: 2020-0527-1100-HA20-16
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/27/20 11:00
Date Received: 05/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 05/28/20 09:04
Analyst: JM
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 05/28/20 03:50
Cleanup Method: EPA 3665A
Cleanup Date: 05/28/20
Cleanup Method: EPA 3660B
Cleanup Date: 05/28/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.6	3.25	1	A
Aroclor 1221	ND		ug/kg	36.6	3.66	1	A
Aroclor 1232	ND		ug/kg	36.6	7.75	1	A
Aroclor 1242	ND		ug/kg	36.6	4.93	1	A
Aroclor 1248	ND		ug/kg	36.6	5.49	1	A
Aroclor 1254	ND		ug/kg	36.6	4.00	1	A
Aroclor 1260	ND		ug/kg	36.6	6.76	1	A
Aroclor 1262	ND		ug/kg	36.6	4.64	1	A
Aroclor 1268	ND		ug/kg	36.6	3.79	1	A
PCBs, Total	ND		ug/kg	36.6	3.25	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	91		30-150	B
Decachlorobiphenyl	81		30-150	B

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-02
Client ID: 2020-0527-1300-HA20-15
Sample Location: PAINTED POST,NEW YORK

Date Collected: 05/27/20 13:00
Date Received: 05/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 05/28/20 09:11
Analyst: JM
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 05/28/20 03:50
Cleanup Method: EPA 3665A
Cleanup Date: 05/28/20
Cleanup Method: EPA 3660B
Cleanup Date: 05/28/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	34.4	3.05	1	A
Aroclor 1221	ND		ug/kg	34.4	3.45	1	A
Aroclor 1232	ND		ug/kg	34.4	7.29	1	A
Aroclor 1242	ND		ug/kg	34.4	4.64	1	A
Aroclor 1248	ND		ug/kg	34.4	5.16	1	A
Aroclor 1254	ND		ug/kg	34.4	3.76	1	A
Aroclor 1260	ND		ug/kg	34.4	6.36	1	A
Aroclor 1262	ND		ug/kg	34.4	4.37	1	A
Aroclor 1268	ND		ug/kg	34.4	3.56	1	A
PCBs, Total	ND		ug/kg	34.4	3.05	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	66		30-150	A
2,4,5,6-Tetrachloro-m-xylene	87		30-150	B
Decachlorobiphenyl	81		30-150	B

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 05/28/20 00:54
Analyst: JM

Extraction Method: EPA 3546
Extraction Date: 05/27/20 13:03
Cleanup Method: EPA 3665A
Cleanup Date: 05/27/20
Cleanup Method: EPA 3660B
Cleanup Date: 05/27/20

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01-02 Batch: WG1374803-1						
Aroclor 1016	ND		ug/kg	31.8	2.82	A
Aroclor 1221	ND		ug/kg	31.8	3.18	A
Aroclor 1232	ND		ug/kg	31.8	6.73	A
Aroclor 1242	ND		ug/kg	31.8	4.28	A
Aroclor 1248	ND		ug/kg	31.8	4.76	A
Aroclor 1254	ND		ug/kg	31.8	3.48	A
Aroclor 1260	ND		ug/kg	31.8	5.87	A
Aroclor 1262	ND		ug/kg	31.8	4.03	A
Aroclor 1268	ND		ug/kg	31.8	3.29	A
PCBs, Total	ND		ug/kg	31.8	2.82	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	81		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	82		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2021799
Report Date: 05/28/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01-02 Batch: WG1374803-2 WG1374803-3									
Aroclor 1016	67		68		40-140	1		50	A
Aroclor 1260	68		69		40-140	1		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		74		30-150	A
Decachlorobiphenyl	78		79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		77		30-150	B
Decachlorobiphenyl	80		81		30-150	B

METALS

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-01 Date Collected: 05/27/20 11:00

Client ID: 2020-0527-1100-HA20-16 Date Received: 05/27/20

Sample Location: PAINTED POST, NEW YORK Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	4.62		mg/kg	0.439	0.091	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
Barium, Total	23.4		mg/kg	0.439	0.076	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
Beryllium, Total	0.272		mg/kg	0.220	0.015	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.439	0.043	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
Chromium, Total	8.03		mg/kg	0.439	0.042	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
Copper, Total	34.8		mg/kg	0.439	0.113	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
Lead, Total	6.44		mg/kg	2.20	0.118	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
Manganese, Total	433		mg/kg	0.439	0.070	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.071	0.046	1	05/28/20 08:50	05/28/20 11:45	EPA 7471B	1,7471B	GD
Nickel, Total	11.5		mg/kg	1.10	0.106	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
Selenium, Total	ND		mg/kg	0.878	0.113	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.439	0.124	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
Zinc, Total	53.7		mg/kg	2.20	0.129	1	05/28/20 08:00	05/28/20 11:53	EPA 3050B	1,6010D	LC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	8.0		mg/kg	0.91	0.91	1		05/28/20 11:53	NA	107,-	

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-02 Date Collected: 05/27/20 13:00

Client ID: 2020-0527-1300-HA20-15 Date Received: 05/27/20

Sample Location: PAINTED POST,NEW YORK Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	2.33		mg/kg	0.420	0.087	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
Barium, Total	18.1		mg/kg	0.420	0.073	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
Beryllium, Total	0.185	J	mg/kg	0.210	0.014	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.420	0.041	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
Chromium, Total	10.6		mg/kg	0.420	0.040	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
Copper, Total	6.61		mg/kg	0.420	0.108	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
Lead, Total	13.1		mg/kg	2.10	0.113	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
Manganese, Total	179		mg/kg	0.420	0.067	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
Mercury, Total	0.320		mg/kg	0.067	0.044	1	05/28/20 08:50	05/28/20 11:48	EPA 7471B	1,7471B	GD
Nickel, Total	6.12		mg/kg	1.05	0.102	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
Selenium, Total	ND		mg/kg	0.841	0.108	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.420	0.119	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
Zinc, Total	30.7		mg/kg	2.10	0.123	1	05/28/20 08:00	05/28/20 11:57	EPA 3050B	1,6010D	LC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	11		mg/kg	0.86	0.86	1		05/28/20 11:57	NA	107,-	

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1374849-1										
Arsenic, Total	ND		mg/kg	0.400	0.083	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	0.070	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC
Chromium, Total	0.216	J	mg/kg	0.400	0.038	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC
Copper, Total	ND		mg/kg	0.400	0.103	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC
Manganese, Total	0.180	J	mg/kg	0.400	0.064	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC
Nickel, Total	0.112	J	mg/kg	1.00	0.097	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC
Selenium, Total	0.312	J	mg/kg	0.800	0.103	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC
Zinc, Total	ND		mg/kg	2.00	0.117	1	05/28/20 08:00	05/28/20 11:23	1,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1374850-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	05/28/20 08:50	05/28/20 11:22	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2021799
Report Date: 05/28/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1374849-2 SRM Lot Number: D105-540								
Arsenic, Total	96		-		70-130	-		
Barium, Total	92		-		75-125	-		
Beryllium, Total	100		-		75-125	-		
Cadmium, Total	96		-		75-125	-		
Chromium, Total	89		-		70-130	-		
Copper, Total	89		-		75-125	-		
Lead, Total	90		-		71-128	-		
Manganese, Total	94		-		76-124	-		
Nickel, Total	95		-		70-131	-		
Selenium, Total	103		-		63-137	-		
Silver, Total	92		-		69-131	-		
Zinc, Total	90		-		70-130	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1374850-2 SRM Lot Number: D105-540								
Mercury, Total	98		-		60-141	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2021799
Report Date: 05/28/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1374849-3 QC Sample: L2021745-01 Client ID: MS Sample												
Arsenic, Total	13.8	9.86	17.3	**35**	Q	-	-		75-125	-		20
Barium, Total	111	164	226	**70**	Q	-	-		75-125	-		20
Beryllium, Total	0.287J	4.11	4.43	108		-	-		75-125	-		20
Cadmium, Total	0.214J	4.19	4.19	100		-	-		75-125	-		20
Chromium, Total	23.8	16.4	35.2	**69**	Q	-	-		75-125	-		20
Copper, Total	86.8	20.5	100	**64**	Q	-	-		75-125	-		20
Lead, Total	170	41.9	118	**0**	Q	-	-		75-125	-		20
Manganese, Total	244	41.1	291	114		-	-		75-125	-		20
Nickel, Total	15.9	41.1	52.8	90		-	-		75-125	-		20
Selenium, Total	1.06J	9.86	11.1	112		-	-		75-125	-		20
Silver, Total	0.452J	24.6	25.4	103		-	-		75-125	-		20
Zinc, Total	121	41.1	156	85		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1374850-3 QC Sample: L2021745-01 Client ID: MS Sample												
Mercury, Total	0.124	0.136	0.337	**157**	Q	-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2021799
Report Date: 05/28/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1374849-4 QC Sample: L2021745-01 Client ID: DUP Sample						
Arsenic, Total	13.8	7.17	mg/kg	**63**	Q	20
Barium, Total	111	62.6	mg/kg	**56**	Q	20
Beryllium, Total	0.287J	0.244J	mg/kg	NC		20
Cadmium, Total	0.214J	0.135J	mg/kg	NC		20
Chromium, Total	23.8	20.7	mg/kg	14		20
Copper, Total	86.8	79.3	mg/kg	9		20
Lead, Total	170	80.2	mg/kg	**72**	Q	20
Manganese, Total	244	231	mg/kg	5		20
Nickel, Total	15.9	14.4	mg/kg	10		20
Selenium, Total	1.06J	1.19J	mg/kg	NC		20
Silver, Total	0.452J	0.311J	mg/kg	NC		20
Zinc, Total	121	116	mg/kg	4		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1374850-4 QC Sample: L2021745-01 Client ID: DUP Sample						
Mercury, Total	0.124	0.139	mg/kg	11		20

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2021799
Report Date: 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-01
Client ID: 2020-0527-1100-HA20-16
Sample Location: PAINTED POST, NEW YORK
Sample Depth:
Matrix: Soil
Date Collected: 05/27/20 11:00
Date Received: 05/27/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.2		%	0.100	NA	1	-	05/28/20 04:54	121,2540G	PR
Cyanide, Total	ND		mg/kg	1.1	0.23	1	05/28/20 04:55	05/28/20 11:39	1,9010C/9012B	LH
Chromium, Hexavalent	ND		mg/kg	0.907	0.181	1	05/28/20 04:10	05/28/20 09:45	1,7196A	JT

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2021799
Report Date: 05/28/20

SAMPLE RESULTS

Lab ID: L2021799-02
Client ID: 2020-0527-1300-HA20-15
Sample Location: PAINTED POST,NEW YORK
Sample Depth:
Matrix: Soil
Date Collected: 05/27/20 13:00
Date Received: 05/27/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.3		%	0.100	NA	1	-	05/28/20 04:54	121,2540G	PR
Cyanide, Total	ND		mg/kg	1.0	0.21	1	05/28/20 04:55	05/28/20 11:40	1,9010C/9012B	LH
Chromium, Hexavalent	ND		mg/kg	0.857	0.171	1	05/28/20 04:10	05/28/20 09:45	1,7196A	JT

Project Name: FORMER INGERSOIL RAND FOUNDR **Lab Number:** L2021799

Project Number: 135100-002 **Report Date:** 05/28/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1375054-1										
Cyanide, Total	ND		mg/kg	0.88	0.19	1	05/28/20 04:55	05/28/20 11:22	1,9010C/9012B	LH
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1375107-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	05/28/20 04:10	05/28/20 09:45	1,7196A	JT

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2021799
Report Date: 05/28/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1375054-2 WG1375054-3								
Cyanide, Total	87		82		80-120	6		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1375107-2								
Chromium, Hexavalent	97		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2021799
Report Date: 05/28/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1375054-4 WG1375054-5 QC Sample: L2021799-02 Client ID: 2020-0527-1300-HA20-15												
Cyanide, Total	ND	10	10	95		10	95		75-125	0		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1375107-4 QC Sample: L2021799-01 Client ID: 2020-0527-1100-HA20-16												
Chromium, Hexavalent	ND	764	851	111		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2021799
Report Date: 05/28/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1375052-1 QC Sample: L2021799-01 Client ID: 2020-0527-1100-HA20-16						
Solids, Total	88.2	90.2	%	2		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1375107-6 QC Sample: L2021799-01 Client ID: 2020-0527-1100-HA20-16						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2021799
Report Date: 05/28/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2021799-01A	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L2021799-01B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.6	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),CU-TI(180),ZN-TI(180),MN-TI(180),HG-T(28),CD-TI(180)
L2021799-01C	Vial Large Septa unpreserved (4oz)	A	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L2021799-01D	Glass 250ml/8oz unpreserved	A	NA		3.6	Y	Absent		TCN-9010(14),NYTCL-8270(14),NYTCL-8082(14),HEXCR-7196(30)
L2021799-01X	Vial MeOH preserved split	A	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L2021799-01Y	Vial Water preserved split	A	NA		3.6	Y	Absent	28-MAY-20 02:58	NYTCL-8260-R2(14)
L2021799-01Z	Vial Water preserved split	A	NA		3.6	Y	Absent	28-MAY-20 02:58	NYTCL-8260-R2(14)
L2021799-02A	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L2021799-02B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.6	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),CU-TI(180),ZN-TI(180),PB-TI(180),SE-TI(180),MN-TI(180),HG-T(28),CD-TI(180)
L2021799-02C	Vial Large Septa unpreserved (4oz)	A	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L2021799-02D	Glass 250ml/8oz unpreserved	A	NA		3.6	Y	Absent		TCN-9010(14),NYTCL-8270(14),NYTCL-8082(14),HEXCR-7196(30)
L2021799-02X	Vial MeOH preserved split	A	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L2021799-02Y	Vial Water preserved split	A	NA		3.6	Y	Absent	28-MAY-20 02:58	NYTCL-8260-R2(14)
L2021799-02Z	Vial Water preserved split	A	NA		3.6	Y	Absent	28-MAY-20 02:58	NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2021799
Project Number:	135100-002	**Report Date:**	05/28/20

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2021799
Project Number:	135100-002	**Report Date:**	05/28/20

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2021799
Project Number:	135100-002	**Report Date:**	05/28/20

Data Qualifiers

Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2021799
Project Number:	135100-002	**Report Date:**	05/28/20

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

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Tonawanda, NY 14150 Holmes, PA 19043

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Date Rec'd in Lab: 5/28/20

ALPHA Job #: L2021799

Project Information
Project Name: Former Ingersoll Rand Forday Site
Project Location: Painted Post, New York
Project #: 135100-002
(Use Project name as Project #)
Project Manager: John D'Agostino
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☒ # of Days:

H&A Information
H&A Client: Tyco Container Co.
H&A Address: Painted Post
H&A Phone: Haley + Aldrich
H&A Fax:
H&A Email:

Deliverables
☐ Email ☐ Fax
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other:

Billing Information
☐ Same as Client Info
PO #

Regulatory Requirements (Program/Criteria)
Note: Select State from menu & identify criteria

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL. more: This list will include tri and hex chrome and cyanide

ANALYSIS
Part 375 TAL metals
Part 375 PCBs
Part 375 VOCs
Part 375 SVOCs

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
21799 - 01	2020-0527-1100-HA20-16	05/27/20	1100	Soil	SHL	Depth = 6-8'
-02	2020-0527-1300-HA20-15	05/27/20	1300	Soil	SHL	Depth = 2-4'

Container Type
Preservative

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code:
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Sean Lurkin	05/27/20 15:08	KAL	05/27/2020 15:10
	05/27/2020 1510		5/28/20 0815

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement# 2015-18-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

Document ID: 20455 Rev 1 (1/28/2016)

ANALYTICAL REPORT

Lab Number:	L2022023
Client:	Haley & Aldrich 200 Town Centre Drive Suite 2 Rochester, NY 14623-4264
ATTN:	John DiGenova
Phone:	(585) 359-9000
Project Name:	FORMER INGERSOIL RAND FOUNDRY
Project Number:	135100-002
Report Date:	05/29/20

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022023
Report Date: 05/29/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2022023-01	2020-0528-0830-HA20-14	SOIL	PAINTED POST, NEW YORK	05/28/20 08:30	05/28/20
L2022023-02	2020-0528-1130-HA20-23	SOIL	PAINTED POST, NEW YORK	05/28/20 11:30	05/28/20
L2022023-03	2020-0528-1330-HA20-22	SOIL	PAINTED POST, NEW YORK	05/28/20 13:30	05/28/20

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2022023
Project Number:	135100-002	**Report Date:**	05/29/20

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2022023
Project Number:	135100-002	**Report Date:**	05/29/20

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2022023-01, -02, and -03 (2020-0528-0830-HA20-14, 2020-0528-1130-HA20-23, and 2020-0528-1330-HA20-22): Any reported concentrations that are below 200 ug/kg may be biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.

Semivolatile Organics

L2022023-02 and -03 (2020-0528-1130-HA20-23 and 2020-0528-1330-HA20-22): The sample has elevated detection limits due to the dilution required by the sample matrix.

Cyanide, Total

The WG1375548-2/-3 LCS/LCSD recoveries for cyanide, total (75%/67%), associated with L2022023-01 through -03 (2020-0528-0830-HA20-14, 2020-0528-1130-HA20-23, and 2020-0528-1330-HA20-22), are outside our in-house acceptance criteria, but within the vendor-certified acceptance limits. The results of the original analyses are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 05/29/20

ORGANICS

VOLATILES

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-01
Client ID: 2020-0528-0830-HA20-14
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/28/20 08:30
Date Received: 05/28/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/29/20 12:01
Analyst: MV
Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	4.9	2.2	1
1,1-Dichloroethane	ND		ug/kg	0.98	0.14	1
Chloroform	ND		ug/kg	1.5	0.14	1
Carbon tetrachloride	ND		ug/kg	0.98	0.23	1
Tetrachloroethene	ND		ug/kg	0.49	0.19	1
Chlorobenzene	ND		ug/kg	0.49	0.12	1
1,2-Dichloroethane	ND		ug/kg	0.98	0.25	1
1,1,1-Trichloroethane	ND		ug/kg	0.49	0.16	1
Benzene	0.47	J	ug/kg	0.49	0.16	1
Toluene	3.0		ug/kg	0.98	0.53	1
Ethylbenzene	2.4		ug/kg	0.98	0.14	1
Vinyl chloride	ND		ug/kg	0.98	0.33	1
1,1-Dichloroethene	ND		ug/kg	0.98	0.23	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.13	1
Trichloroethene	ND		ug/kg	0.49	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17	1
Methyl tert butyl ether	ND		ug/kg	2.0	0.20	1
p/m-Xylene	7.7		ug/kg	2.0	0.55	1
o-Xylene	8.9		ug/kg	0.98	0.29	1
cis-1,2-Dichloroethene	ND		ug/kg	0.98	0.17	1
Acetone	ND		ug/kg	9.8	4.7	1
2-Butanone	ND		ug/kg	9.8	2.2	1
n-Butylbenzene	0.22	J	ug/kg	0.98	0.16	1
sec-Butylbenzene	ND		ug/kg	0.98	0.14	1
tert-Butylbenzene	ND		ug/kg	2.0	0.12	1
n-Propylbenzene	0.37	J	ug/kg	0.98	0.17	1

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-01 Date Collected: 05/28/20 08:30

Client ID: 2020-0528-0830-HA20-14 Date Received: 05/28/20

Sample Location: PAINTED POST, NEW YORK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	5.4		ug/kg	2.0	0.19	1
1,2,4-Trimethylbenzene	15		ug/kg	2.0	0.33	1
1,4-Dioxane	ND		ug/kg	79	34.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	99		70-130

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-02 Date Collected: 05/28/20 11:30
Client ID: 2020-0528-1130-HA20-23 Date Received: 05/28/20
Sample Location: PAINTED POST, NEW YORK Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/29/20 08:28
Analyst: MV
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	5.2	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.15	1
Chloroform	ND		ug/kg	1.6	0.14	1
Carbon tetrachloride	ND		ug/kg	1.0	0.24	1
Tetrachloroethene	ND		ug/kg	0.52	0.20	1
Chlorobenzene	ND		ug/kg	0.52	0.13	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.27	1
1,1,1-Trichloroethane	ND		ug/kg	0.52	0.17	1
Benzene	ND		ug/kg	0.52	0.17	1
Toluene	ND		ug/kg	1.0	0.56	1
Ethylbenzene	ND		ug/kg	1.0	0.15	1
Vinyl chloride	ND		ug/kg	1.0	0.35	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.14	1
Trichloroethene	ND		ug/kg	0.52	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.21	1
p/m-Xylene	ND		ug/kg	2.1	0.58	1
o-Xylene	ND		ug/kg	1.0	0.30	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Acetone	ND		ug/kg	10	5.0	1
2-Butanone	ND		ug/kg	10	2.3	1
n-Butylbenzene	ND		ug/kg	1.0	0.17	1
sec-Butylbenzene	ND		ug/kg	1.0	0.15	1
tert-Butylbenzene	ND		ug/kg	2.1	0.12	1
n-Propylbenzene	ND		ug/kg	1.0	0.18	1

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-02 Date Collected: 05/28/20 11:30

Client ID: 2020-0528-1130-HA20-23 Date Received: 05/28/20

Sample Location: PAINTED POST, NEW YORK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/kg	2.1	0.20	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.1	0.35	1
1,4-Dioxane	ND		ug/kg	83	36.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	97		70-130

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-03 Date Collected: 05/28/20 13:30
Client ID: 2020-0528-1330-HA20-22 Date Received: 05/28/20
Sample Location: PAINTED POST, NEW YORK Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 05/29/20 08:54
Analyst: MV
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	4.9	2.2	1
1,1-Dichloroethane	ND		ug/kg	0.98	0.14	1
Chloroform	ND		ug/kg	1.5	0.14	1
Carbon tetrachloride	ND		ug/kg	0.98	0.22	1
Tetrachloroethene	ND		ug/kg	0.49	0.19	1
Chlorobenzene	ND		ug/kg	0.49	0.12	1
1,2-Dichloroethane	ND		ug/kg	0.98	0.25	1
1,1,1-Trichloroethane	ND		ug/kg	0.49	0.16	1
Benzene	ND		ug/kg	0.49	0.16	1
Toluene	ND		ug/kg	0.98	0.53	1
Ethylbenzene	ND		ug/kg	0.98	0.14	1
Vinyl chloride	ND		ug/kg	0.98	0.33	1
1,1-Dichloroethene	ND		ug/kg	0.98	0.23	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.13	1
Trichloroethene	ND		ug/kg	0.49	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17	1
Methyl tert butyl ether	ND		ug/kg	2.0	0.20	1
p/m-Xylene	ND		ug/kg	2.0	0.55	1
o-Xylene	ND		ug/kg	0.98	0.28	1
cis-1,2-Dichloroethene	ND		ug/kg	0.98	0.17	1
Acetone	ND		ug/kg	9.8	4.7	1
2-Butanone	ND		ug/kg	9.8	2.2	1
n-Butylbenzene	ND		ug/kg	0.98	0.16	1
sec-Butylbenzene	ND		ug/kg	0.98	0.14	1
tert-Butylbenzene	ND		ug/kg	2.0	0.12	1
n-Propylbenzene	ND		ug/kg	0.98	0.17	1

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-03 Date Collected: 05/28/20 13:30

Client ID: 2020-0528-1330-HA20-22 Date Received: 05/28/20

Sample Location: PAINTED POST, NEW YORK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33	1
1,4-Dioxane	ND		ug/kg	78	34.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	98		70-130

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/29/20 07:37
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-03 Batch: WG1375767-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/29/20 07:37
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-03 Batch: WG1375767-5					
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	94		70-130

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/29/20 07:17
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1375826-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.16	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	0.22	J	ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/29/20 07:17
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1375826-5					
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-03 Batch: WG1375767-3 WG1375767-4								
Methylene chloride	84		85		70-130	1		30
1,1-Dichloroethane	107		107		70-130	0		30
Chloroform	92		93		70-130	1		30
Carbon tetrachloride	118		115		70-130	3		30
Tetrachloroethene	105		103		70-130	2		30
Chlorobenzene	89		89		70-130	0		30
1,2-Dichloroethane	104		106		70-130	2		30
1,1,1-Trichloroethane	108		106		70-130	2		30
Benzene	84		85		70-130	1		30
Toluene	95		94		70-130	1		30
Ethylbenzene	100		99		70-130	1		30
Vinyl chloride	86		85		67-130	1		30
1,1-Dichloroethene	99		98		65-135	1		30
trans-1,2-Dichloroethene	93		93		70-130	0		30
Trichloroethene	93		93		70-130	0		30
1,2-Dichlorobenzene	95		95		70-130	0		30
1,3-Dichlorobenzene	98		97		70-130	1		30
1,4-Dichlorobenzene	97		96		70-130	1		30
Methyl tert butyl ether	93		94		66-130	1		30
p/m-Xylene	100		99		70-130	1		30
o-Xylene	97		96		70-130	1		30
cis-1,2-Dichloroethene	89		90		70-130	1		30
Acetone	111		106		54-140	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-03 Batch: WG1375767-3 WG1375767-4								
2-Butanone	110		111		70-130	1		30
n-Butylbenzene	105		104		70-130	1		30
sec-Butylbenzene	108		107		70-130	1		30
tert-Butylbenzene	113		113		70-130	0		30
n-Propylbenzene	105		104		70-130	1		30
1,3,5-Trimethylbenzene	110		109		70-130	1		30
1,2,4-Trimethylbenzene	109		108		70-130	1		30
1,4-Dioxane	111		106		65-136	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	116		117		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	105		105		70-130
Dibromofluoromethane	96		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1375826-3 WG1375826-4								
Methylene chloride	90		89		70-130	1		30
1,1-Dichloroethane	104		103		70-130	1		30
Chloroform	104		102		70-130	2		30
Carbon tetrachloride	108		105		70-130	3		30
Tetrachloroethene	108		104		70-130	4		30
Chlorobenzene	98		96		70-130	2		30
1,2-Dichloroethane	105		104		70-130	1		30
1,1,1-Trichloroethane	109		107		70-130	2		30
Benzene	107		106		70-130	1		30
Toluene	100		96		70-130	4		30
Ethylbenzene	100		98		70-130	2		30
Vinyl chloride	94		89		67-130	5		30
1,1-Dichloroethene	106		102		65-135	4		30
trans-1,2-Dichloroethene	109		105		70-130	4		30
Trichloroethene	108		106		70-130	2		30
1,2-Dichlorobenzene	97		96		70-130	1		30
1,3-Dichlorobenzene	97		97		70-130	0		30
1,4-Dichlorobenzene	94		95		70-130	1		30
Methyl tert butyl ether	105		103		66-130	2		30
p/m-Xylene	102		100		70-130	2		30
o-Xylene	103		101		70-130	2		30
cis-1,2-Dichloroethene	111		106		70-130	5		30
Acetone	90		102		54-140	13		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1375826-3 WG1375826-4								
2-Butanone	81		89		70-130	9		30
n-Butylbenzene	98		98		70-130	0		30
sec-Butylbenzene	98		98		70-130	0		30
tert-Butylbenzene	99		99		70-130	0		30
n-Propylbenzene	99		97		70-130	2		30
1,3,5-Trimethylbenzene	98		98		70-130	0		30
1,2,4-Trimethylbenzene	99		99		70-130	0		30
1,4-Dioxane	108		102		65-136	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		96		70-130
Toluene-d8	97		95		70-130
4-Bromofluorobenzene	100		101		70-130
Dibromofluoromethane	102		102		70-130

SEMIVOLATILES

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-01
Client ID: 2020-0528-0830-HA20-14
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/28/20 08:30
Date Received: 05/28/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 05/29/20 14:03
Analyst: JG
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 05/29/20 10:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	110	J	ug/kg	140	18.	1
Hexachlorobenzene	ND		ug/kg	100	19.	1
Fluoranthene	1600		ug/kg	100	19.	1
Naphthalene	1000		ug/kg	170	21.	1
Benzo(a)anthracene	1200		ug/kg	100	19.	1
Benzo(a)pyrene	2500		ug/kg	140	41.	1
Benzo(b)fluoranthene	3000		ug/kg	100	28.	1
Benzo(k)fluoranthene	770		ug/kg	100	27.	1
Chrysene	1500		ug/kg	100	18.	1
Acenaphthylene	1300		ug/kg	140	26.	1
Anthracene	550		ug/kg	100	33.	1
Benzo(ghi)perylene	2000		ug/kg	140	20.	1
Fluorene	590		ug/kg	170	16.	1
Phenanthrene	2000		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	500		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	1900		ug/kg	140	24.	1
Pyrene	2600		ug/kg	100	17.	1
Dibenzofuran	89	J	ug/kg	170	16.	1
Pentachlorophenol	ND		ug/kg	140	37.	1
Phenol	ND		ug/kg	170	26.	1
2-Methylphenol	ND		ug/kg	170	26.	1
3-Methylphenol/4-Methylphenol	33	J	ug/kg	240	26.	1

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-01 Date Collected: 05/28/20 08:30

Client ID: 2020-0528-0830-HA20-14 Date Received: 05/28/20

Sample Location: PAINTED POST, NEW YORK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		25-120
Phenol-d6	63		10-120
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	60		30-120
2,4,6-Tribromophenol	76		10-136
4-Terphenyl-d14	61		18-120

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-02 D
Client ID: 2020-0528-1130-HA20-23
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/28/20 11:30
Date Received: 05/28/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 05/29/20 14:51
Analyst: JG
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 05/29/20 10:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	110	J	ug/kg	710	92.	5
Hexachlorobenzene	ND		ug/kg	530	100	5
Fluoranthene	4000		ug/kg	530	100	5
Naphthalene	230	J	ug/kg	890	110	5
Benzo(a)anthracene	3200		ug/kg	530	100	5
Benzo(a)pyrene	5500		ug/kg	710	220	5
Benzo(b)fluoranthene	9700		ug/kg	530	150	5
Benzo(k)fluoranthene	2400		ug/kg	530	140	5
Chrysene	4900		ug/kg	530	93.	5
Acenaphthylene	ND		ug/kg	710	140	5
Anthracene	ND		ug/kg	530	170	5
Benzo(ghi)perylene	7800		ug/kg	710	100	5
Fluorene	ND		ug/kg	890	87.	5
Phenanthrene	940		ug/kg	530	110	5
Dibenzo(a,h)anthracene	1400		ug/kg	530	100	5
Indeno(1,2,3-cd)pyrene	6800		ug/kg	710	120	5
Pyrene	3500		ug/kg	530	88.	5
Dibenzofuran	ND		ug/kg	890	84.	5
Pentachlorophenol	ND		ug/kg	710	200	5
Phenol	ND		ug/kg	890	130	5
2-Methylphenol	ND		ug/kg	890	140	5
3-Methylphenol/4-Methylphenol	ND		ug/kg	1300	140	5

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-02 D
Client ID: 2020-0528-1130-HA20-23
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/28/20 11:30
Date Received: 05/28/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	69		25-120
Phenol-d6	72		10-120
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	69		30-120
2,4,6-Tribromophenol	87		10-136
4-Terphenyl-d14	67		18-120

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-03 D
Client ID: 2020-0528-1330-HA20-22
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/28/20 13:30
Date Received: 05/28/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 05/29/20 15:15
Analyst: JG
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 05/29/20 10:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	6700		ug/kg	700	91.	5
Hexachlorobenzene	ND		ug/kg	530	99.	5
Fluoranthene	5300		ug/kg	530	100	5
Naphthalene	680	J	ug/kg	880	110	5
Benzo(a)anthracene	5900		ug/kg	530	99.	5
Benzo(a)pyrene	15000		ug/kg	700	220	5
Benzo(b)fluoranthene	15000		ug/kg	530	150	5
Benzo(k)fluoranthene	4900		ug/kg	530	140	5
Chrysene	6200		ug/kg	530	92.	5
Acenaphthylene	790		ug/kg	700	140	5
Anthracene	1000		ug/kg	530	170	5
Benzo(ghi)perylene	14000		ug/kg	700	100	5
Fluorene	1000		ug/kg	880	86.	5
Phenanthrene	5300		ug/kg	530	110	5
Dibenzo(a,h)anthracene	3300		ug/kg	530	100	5
Indeno(1,2,3-cd)pyrene	16000		ug/kg	700	120	5
Pyrene	7100		ug/kg	530	88.	5
Dibenzofuran	220	J	ug/kg	880	83.	5
Pentachlorophenol	ND		ug/kg	700	190	5
Phenol	ND		ug/kg	880	130	5
2-Methylphenol	ND		ug/kg	880	140	5
3-Methylphenol/4-Methylphenol	ND		ug/kg	1300	140	5

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-03 D
Client ID: 2020-0528-1330-HA20-22
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/28/20 13:30
Date Received: 05/28/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	60		25-120
Phenol-d6	64		10-120
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	59		30-120
2,4,6-Tribromophenol	76		10-136
4-Terphenyl-d14	58		18-120

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/29/20 13:56
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 05/29/20 10:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1375743-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Fluoranthene	ND		ug/kg	99	19.
Naphthalene	ND		ug/kg	160	20.
Benzo(a)anthracene	ND		ug/kg	99	19.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	26.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Dibenzofuran	ND		ug/kg	160	16.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/29/20 13:56
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 05/29/20 10:15

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1375743-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		25-120
Phenol-d6	83		10-120
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	67		30-120
2,4,6-Tribromophenol	83		10-136
4-Terphenyl-d14	77		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1375743-2 WG1375743-3								
Acenaphthene	78		82		31-137	5		50
Hexachlorobenzene	76		84		40-140	10		50
Fluoranthene	81		87		40-140	7		50
Naphthalene	73		79		40-140	8		50
Benzo(a)anthracene	77		82		40-140	6		50
Benzo(a)pyrene	76		81		40-140	6		50
Benzo(b)fluoranthene	74		76		40-140	3		50
Benzo(k)fluoranthene	86		98		40-140	13		50
Chrysene	82		86		40-140	5		50
Acenaphthylene	80		84		40-140	5		50
Anthracene	85		87		40-140	2		50
Benzo(ghi)perylene	81		87		40-140	7		50
Fluorene	80		86		40-140	7		50
Phenanthrene	77		84		40-140	9		50
Dibenzo(a,h)anthracene	84		91		40-140	8		50
Indeno(1,2,3-cd)pyrene	76		85		40-140	11		50
Pyrene	83		89		35-142	7		50
Dibenzofuran	77		83		40-140	8		50
Pentachlorophenol	71		73		17-109	3		50
Phenol	80		86		26-90	7		50
2-Methylphenol	83		90		30-130.	8		50
3-Methylphenol/4-Methylphenol	79		85		30-130	7		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1375743-2 WG1375743-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	76		84		25-120
Phenol-d6	82		89		10-120
Nitrobenzene-d5	76		81		23-120
2-Fluorobiphenyl	65		71		30-120
2,4,6-Tribromophenol	78		87		10-136
4-Terphenyl-d14	73		78		18-120

PCBS

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-01
Client ID: 2020-0528-0830-HA20-14
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/28/20 08:30
Date Received: 05/28/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 05/29/20 10:17
Analyst: JM
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 05/29/20 02:07
Cleanup Method: EPA 3665A
Cleanup Date: 05/29/20
Cleanup Method: EPA 3660B
Cleanup Date: 05/29/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	32.7	2.91	1	A
Aroclor 1221	ND		ug/kg	32.7	3.28	1	A
Aroclor 1232	ND		ug/kg	32.7	6.94	1	A
Aroclor 1242	ND		ug/kg	32.7	4.41	1	A
Aroclor 1248	ND		ug/kg	32.7	4.91	1	A
Aroclor 1254	ND		ug/kg	32.7	3.58	1	A
Aroclor 1260	7.42	J	ug/kg	32.7	6.05	1	B
Aroclor 1262	ND		ug/kg	32.7	4.16	1	A
Aroclor 1268	ND		ug/kg	32.7	3.39	1	A
PCBs, Total	7.42	J	ug/kg	32.7	2.91	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	58		30-150	B

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-02
Client ID: 2020-0528-1130-HA20-23
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/28/20 11:30
Date Received: 05/28/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 05/29/20 10:24
Analyst: JM
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 05/29/20 02:07
Cleanup Method: EPA 3665A
Cleanup Date: 05/29/20
Cleanup Method: EPA 3660B
Cleanup Date: 05/29/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	34.2	3.04	1	A
Aroclor 1221	ND		ug/kg	34.2	3.42	1	A
Aroclor 1232	ND		ug/kg	34.2	7.25	1	A
Aroclor 1242	ND		ug/kg	34.2	4.61	1	A
Aroclor 1248	ND		ug/kg	34.2	5.13	1	A
Aroclor 1254	ND		ug/kg	34.2	3.74	1	A
Aroclor 1260	ND		ug/kg	34.2	6.32	1	A
Aroclor 1262	ND		ug/kg	34.2	4.34	1	A
Aroclor 1268	ND		ug/kg	34.2	3.54	1	A
PCBs, Total	ND		ug/kg	34.2	3.04	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	55		30-150	B

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-03
Client ID: 2020-0528-1330-HA20-22
Sample Location: PAINTED POST, NEW YORK

Date Collected: 05/28/20 13:30
Date Received: 05/28/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 05/29/20 10:31
Analyst: JM
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 05/29/20 02:07
Cleanup Method: EPA 3665A
Cleanup Date: 05/29/20
Cleanup Method: EPA 3660B
Cleanup Date: 05/29/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	35.4	3.14	1	A
Aroclor 1221	ND		ug/kg	35.4	3.55	1	A
Aroclor 1232	ND		ug/kg	35.4	7.51	1	A
Aroclor 1242	ND		ug/kg	35.4	4.77	1	A
Aroclor 1248	ND		ug/kg	35.4	5.31	1	A
Aroclor 1254	ND		ug/kg	35.4	3.87	1	A
Aroclor 1260	ND		ug/kg	35.4	6.54	1	B
Aroclor 1262	ND		ug/kg	35.4	4.50	1	A
Aroclor 1268	ND		ug/kg	35.4	3.67	1	A
PCBs, Total	ND		ug/kg	35.4	3.14	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	54		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	63		30-150	B

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 05/28/20 23:06
Analyst: JM

Extraction Method: EPA 3546
Extraction Date: 05/28/20 15:44
Cleanup Method: EPA 3665A
Cleanup Date: 05/28/20
Cleanup Method: EPA 3660B
Cleanup Date: 05/28/20

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01-03 Batch: WG1375236-1						
Aroclor 1016	ND		ug/kg	32.5	2.88	A
Aroclor 1221	ND		ug/kg	32.5	3.25	A
Aroclor 1232	ND		ug/kg	32.5	6.88	A
Aroclor 1242	ND		ug/kg	32.5	4.38	A
Aroclor 1248	ND		ug/kg	32.5	4.87	A
Aroclor 1254	ND		ug/kg	32.5	3.55	A
Aroclor 1260	ND		ug/kg	32.5	6.00	A
Aroclor 1262	ND		ug/kg	32.5	4.12	A
Aroclor 1268	ND		ug/kg	32.5	3.36	A
PCBs, Total	ND		ug/kg	32.5	2.88	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	67		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	63		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01-03 Batch: WG1375236-2 WG1375236-3									
Aroclor 1016	64		60		40-140	6		50	A
Aroclor 1260	62		58		40-140	7		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		62		30-150	A
Decachlorobiphenyl	62		59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		62		30-150	B
Decachlorobiphenyl	62		58		30-150	B

METALS

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-01 Date Collected: 05/28/20 08:30

Client ID: 2020-0528-0830-HA20-14 Date Received: 05/28/20

Sample Location: PAINTED POST, NEW YORK Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	6.32		mg/kg	0.406	0.084	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
Barium, Total	48.7		mg/kg	0.406	0.071	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
Beryllium, Total	0.633		mg/kg	0.203	0.013	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
Cadmium, Total	0.345	J	mg/kg	0.406	0.040	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
Chromium, Total	9.92		mg/kg	0.406	0.039	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
Copper, Total	22.1		mg/kg	0.406	0.105	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
Lead, Total	13.1		mg/kg	2.03	0.109	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
Manganese, Total	444		mg/kg	0.406	0.065	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.065	0.042	1	05/29/20 08:25	05/29/20 12:10	EPA 7471B	1,7471B	GD
Nickel, Total	11.5		mg/kg	1.01	0.098	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
Selenium, Total	ND		mg/kg	0.812	0.105	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.406	0.115	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
Zinc, Total	37.0		mg/kg	2.03	0.119	1	05/29/20 07:00	05/29/20 12:00	EPA 3050B	1,6010D	LC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	9.9		mg/kg	0.82	0.83	1		05/29/20 12:00	NA	107,-	

Project Name: FORMER INGERSOIL RAND FOUNDRY
Lab Number: L2022023
Project Number: 135100-002
Report Date: 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-02
Client ID: 2020-0528-1130-HA20-23
Sample Location: PAINTED POST, NEW YORK
Date Collected: 05/28/20 11:30
Date Received: 05/28/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	3.05		mg/kg	0.406	0.085	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
Barium, Total	13.5		mg/kg	0.406	0.071	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
Beryllium, Total	0.138	J	mg/kg	0.203	0.013	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
Cadmium, Total	0.284	J	mg/kg	0.406	0.040	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
Chromium, Total	14.4		mg/kg	0.406	0.039	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
Copper, Total	14.0		mg/kg	0.406	0.105	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
Lead, Total	8.89		mg/kg	2.03	0.109	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
Manganese, Total	92.2		mg/kg	0.406	0.065	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.068	0.044	1	05/29/20 08:25	05/29/20 12:14	EPA 7471B	1,7471B	GD
Nickel, Total	6.70		mg/kg	1.02	0.098	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
Selenium, Total	ND		mg/kg	0.813	0.105	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.406	0.115	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
Zinc, Total	11.7		mg/kg	2.03	0.119	1	05/29/20 07:00	05/29/20 12:05	EPA 3050B	1,6010D	LC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	14		mg/kg	0.86	0.87	1		05/29/20 12:05	NA	107,-	

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-03
Client ID: 2020-0528-1330-HA20-22
Sample Location: PAINTED POST, NEW YORK
Date Collected: 05/28/20 13:30
Date Received: 05/28/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	2.50		mg/kg	0.425	0.088	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
Barium, Total	15.5		mg/kg	0.425	0.074	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
Beryllium, Total	0.115	J	mg/kg	0.212	0.014	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
Cadmium, Total	0.195	J	mg/kg	0.425	0.042	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
Chromium, Total	7.31		mg/kg	0.425	0.041	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
Copper, Total	10.1		mg/kg	0.425	0.110	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
Lead, Total	10.6		mg/kg	2.12	0.114	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
Manganese, Total	150		mg/kg	0.425	0.068	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.068	0.045	1	05/29/20 08:25	05/29/20 12:23	EPA 7471B	1,7471B	GD
Nickel, Total	10.0		mg/kg	1.06	0.103	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
Selenium, Total	ND		mg/kg	0.849	0.110	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.425	0.120	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
Zinc, Total	19.5		mg/kg	2.12	0.124	1	05/29/20 07:00	05/29/20 12:10	EPA 3050B	1,6010D	LC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	7.3		mg/kg	0.86	0.86	1		05/29/20 12:10	NA	107,-	

Project Name: FORMER INGERSOIL RAND FOUNDRY **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1375606-1										
Arsenic, Total	ND		mg/kg	0.400	0.083	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	0.070	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC
Chromium, Total	0.136	J	mg/kg	0.400	0.038	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC
Copper, Total	ND		mg/kg	0.400	0.103	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC
Manganese, Total	0.068	J	mg/kg	0.400	0.064	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC
Nickel, Total	ND		mg/kg	1.00	0.097	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC
Selenium, Total	ND		mg/kg	0.800	0.103	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC
Zinc, Total	ND		mg/kg	2.00	0.117	1	05/29/20 07:00	05/29/20 10:59	1,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1375608-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	05/29/20 08:25	05/29/20 11:21	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1375606-2 SRM Lot Number: D109-540								
Arsenic, Total	102		-		70-130	-		
Barium, Total	97		-		75-125	-		
Beryllium, Total	101		-		75-125	-		
Cadmium, Total	91		-		75-125	-		
Chromium, Total	97		-		70-130	-		
Copper, Total	99		-		75-125	-		
Lead, Total	97		-		72-128	-		
Manganese, Total	97		-		74-126	-		
Nickel, Total	96		-		70-130	-		
Selenium, Total	104		-		68-132	-		
Silver, Total	103		-		68-131	-		
Zinc, Total	95		-		70-130	-		
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1375608-2 SRM Lot Number: D109-540								
Mercury, Total	105		-		60-140	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022023
Report Date: 05/29/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1375606-3 QC Sample: L2021946-01 Client ID: MS Sample												
Arsenic, Total	5.90	10.9	19.4	124		-	-		75-125	-		20
Barium, Total	41.2	181	212	94		-	-		75-125	-		20
Beryllium, Total	0.189J	4.53	4.58	101		-	-		75-125	-		20
Cadmium, Total	1.44	4.62	5.53	88		-	-		75-125	-		20
Chromium, Total	140	18.1	133	**0**	Q	-	-		75-125	-		20
Copper, Total	8450	22.7	11100	**11700**	Q	-	-		75-125	-		20
Lead, Total	76.5	46.2	138	**133**	Q	-	-		75-125	-		20
Manganese, Total	252	45.3	320	**150**	Q	-	-		75-125	-		20
Nickel, Total	42.5	45.3	82.2	88		-	-		75-125	-		20
Selenium, Total	0.540J	10.9	11.4	105		-	-		75-125	-		20
Silver, Total	2.45	27.2	30.3	102		-	-		75-125	-		20
Zinc, Total	1880	45.3	1890	**22**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1375608-3 QC Sample: L2021946-01 Client ID: MS Sample												
Mercury, Total	0.229	0.146	0.336	**73**	Q	-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022023
Report Date: 05/29/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1375606-4 QC Sample: L2021946-01 Client ID: DUP Sample						
Arsenic, Total	5.90	14.0	mg/kg	**81**	Q	20
Barium, Total	41.2	43.2	mg/kg	5		20
Beryllium, Total	0.189J	0.250J	mg/kg	NC		20
Cadmium, Total	1.44	1.76	mg/kg	20		20
Chromium, Total	140	108	mg/kg	**26**	Q	20
Lead, Total	76.5	132	mg/kg	**53**	Q	20
Manganese, Total	252	271	mg/kg	7		20
Nickel, Total	42.5	43.4	mg/kg	2		20
Selenium, Total	0.540J	1.86	mg/kg	NC		20
Silver, Total	2.45	5.25	mg/kg	**73**	Q	20
Zinc, Total	1880	2520	mg/kg	**29**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1375606-4 QC Sample: L2021946-01 Client ID: DUP Sample						
Copper, Total	8450	16700	mg/kg	**66**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1375608-4 QC Sample: L2021946-01 Client ID: DUP Sample						
Mercury, Total	0.229	0.392	mg/kg	**52**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-01
Client ID: 2020-0528-0830-HA20-14
Sample Location: PAINTED POST, NEW YORK
Sample Depth:
Matrix: Soil
Date Collected: 05/28/20 08:30
Date Received: 05/28/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.0		%	0.100	NA	1	-	05/29/20 02:31	121,2540G	YA
Cyanide, Total	ND		mg/kg	1.0	0.22	1	05/29/20 02:24	05/29/20 11:16	1,9010C/9012B	LH
Chromium, Hexavalent	ND		mg/kg	0.825	0.165	1	05/29/20 03:55	05/29/20 08:30	1,7196A	CW

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-02
Client ID: 2020-0528-1130-HA20-23
Sample Location: PAINTED POST, NEW YORK
Sample Depth:
Matrix: Soil
Date Collected: 05/28/20 11:30
Date Received: 05/28/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.5		%	0.100	NA	1	-	05/29/20 02:31	121,2540G	YA
Cyanide, Total	ND		mg/kg	1.1	0.23	1	05/29/20 02:24	05/29/20 11:18	1,9010C/9012B	LH
Chromium, Hexavalent	ND		mg/kg	0.865	0.173	1	05/29/20 03:55	05/29/20 08:30	1,7196A	CW

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022023
Report Date: 05/29/20

SAMPLE RESULTS

Lab ID: L2022023-03
Client ID: 2020-0528-1330-HA20-22
Sample Location: PAINTED POST, NEW YORK
Sample Depth:
Matrix: Soil
Date Collected: 05/28/20 13:30
Date Received: 05/28/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.7		%	0.100	NA	1	-	05/29/20 02:31	121,2540G	YA
Cyanide, Total	ND		mg/kg	1.0	0.21	1	05/29/20 02:24	05/29/20 11:19	1,9010C/9012B	LH
Chromium, Hexavalent	ND		mg/kg	0.863	0.172	1	05/29/20 03:55	05/29/20 08:30	1,7196A	CW

Project Name: FORMER INGERSOIL RAND FOUNDR **Lab Number:** L2022023

Project Number: 135100-002 **Report Date:** 05/29/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1375548-1										
Cyanide, Total	ND		mg/kg	0.93	0.20	1	05/29/20 02:24	05/29/20 11:01	1,9010C/9012B	LH
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1375572-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	05/29/20 03:55	05/29/20 08:30	1,7196A	CW

Lab Control Sample Analysis

Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022023
Report Date: 05/29/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1375548-2 WG1375548-3								
Cyanide, Total	**75**	Q	**67**	Q	80-120	11		35
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1375572-2								
Chromium, Hexavalent	83		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022023
Report Date: 05/29/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1375548-4 WG1375548-5 QC Sample: L2022023-03 Client ID: 2020-0528-1330-HA20-22												
Cyanide, Total	ND	10	9.3	93		8.8	82		75-125	6		35
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1375572-4 QC Sample: L2022023-01 Client ID: 2020-0528-0830-HA20-14												
Chromium, Hexavalent	ND	1010	961	95		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022023
Report Date: 05/29/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1375536-1 QC Sample: L2022124-03 Client ID: DUP Sample						
Solids, Total	75.8	76.2	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1375572-6 QC Sample: L2022023-01 Client ID: 2020-0528-0830-HA20-14						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022023
Report Date: 05/29/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2022023-01A	Plastic 2oz unpreserved for TS	A	NA		4.3	Y	Absent		TS(7)
L2022023-01B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),PB-TI(180),CU-TI(180),SE-TI(180),ZN-TI(180),MN-TI(180),HG-T(28),CD-TI(180)
L2022023-01C	Vial Large Septa unpreserved (4oz)	A	NA		4.3	Y	Absent		NYTCL-8260-R2(14)
L2022023-01D	Glass 250ml/8oz unpreserved	A	NA		4.3	Y	Absent		TCN-9010(14),NYTCL-8270(14),NYTCL-8082(14),HEXCR-7196(30)
L2022023-01X	Vial MeOH preserved split	A	NA		4.3	Y	Absent		NYTCL-8260-R2(14)
L2022023-01Y	Vial Water preserved split	A	NA		4.3	Y	Absent	29-MAY-20 02:32	NYTCL-8260-R2(14)
L2022023-01Z	Vial Water preserved split	A	NA		4.3	Y	Absent	29-MAY-20 02:32	NYTCL-8260-R2(14)
L2022023-02A	Plastic 2oz unpreserved for TS	A	NA		4.3	Y	Absent		TS(7)
L2022023-02B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),PB-TI(180),CU-TI(180),SE-TI(180),ZN-TI(180),MN-TI(180),HG-T(28),CD-TI(180)
L2022023-02C	Vial Large Septa unpreserved (4oz)	A	NA		4.3	Y	Absent		NYTCL-8260-R2(14)
L2022023-02D	Glass 250ml/8oz unpreserved	A	NA		4.3	Y	Absent		NYTCL-8270(14),TCN-9010(14),NYTCL-8082(14),HEXCR-7196(30)
L2022023-02X	Vial MeOH preserved split	A	NA		4.3	Y	Absent		NYTCL-8260-R2(14)
L2022023-02Y	Vial Water preserved split	A	NA		4.3	Y	Absent	29-MAY-20 02:32	NYTCL-8260-R2(14)
L2022023-02Z	Vial Water preserved split	A	NA		4.3	Y	Absent	29-MAY-20 02:32	NYTCL-8260-R2(14)
L2022023-03A	Plastic 2oz unpreserved for TS	A	NA		4.3	Y	Absent		TS(7)
L2022023-03B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),CU-TI(180),ZN-TI(180),MN-TI(180),HG-T(28),CD-TI(180)
L2022023-03C	Vial Large Septa unpreserved (4oz)	A	NA		4.3	Y	Absent		NYTCL-8260-R2(14)
L2022023-03D	Glass 250ml/8oz unpreserved	A	NA		4.3	Y	Absent		TCN-9010(14),NYTCL-8270(14),NYTCL-8082(14),HEXCR-7196(30)

*Values in parentheses indicate holding time in days

Project Name: FORMER INGERSOIL RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022023
Report Date: 05/29/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2022023-03X	Vial MeOH preserved split	A	NA		4.3	Y	Absent		NYTCL-8260-R2(14)
L2022023-03Y	Vial Water preserved split	A	NA		4.3	Y	Absent	29-MAY-20 02:32	NYTCL-8260-R2(14)
L2022023-03Z	Vial Water preserved split	A	NA		4.3	Y	Absent	29-MAY-20 02:32	NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2022023
Project Number:	135100-002	**Report Date:**	05/29/20

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2022023
Project Number:	135100-002	**Report Date:**	05/29/20

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2022023
Project Number:	135100-002	**Report Date:**	05/29/20

Data Qualifiers

Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER INGERSOIL RAND FOUNDRY	**Lab Number:**	L2022023
Project Number:	135100-002	**Report Date:**	05/29/20

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Brewer, ME 04412 Portsmouth, NH 03801 Mahwah, NJ 07430
Albany, NY 12205
Tonawanda, NY 14150 Holmes, PA 19043

Page 1 of 1

Date Rec'd in Lab: 5/29/20

ALPHA Job #: L2022023

H&A Information

H&A Client: Meghan Brassard
H&A Address: 3 Bedford Farms Drive
Bedford, NH 03110
H&A Phone: 603 391 3326
H&A Fax:
H&A Email: mbrassard@haleyaldrich.com

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

Project Information

Project Name: Former Ingersoll Rand Foundry Site
Project Location: Painted Post, New York
Project # 135100-002
(Use Project name as Project #) ☐
Project Manager: John DiGenova
ALPHAQuote #:

Turn-Around Time

Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ Email ☐ Fax
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other:

Regulatory Requirements (Program/Criteria)

Note: Select State from menu & identify criteria.

Billing Information

☐ Same as Client Info
PO#

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:
☐ NJ ☐ NY
☐ Other:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Part 375 Total Metals	Part 375 PCBs	Part 375 VOCs	Part 375 SVOCs
22023-01	2020-0528-0830-HA20-14	05/28/20	0830	Soil	SHL	✓	✓	✓	✓
-02	2020-0528-1150-HA20-23	05/28/20	1150	Soil	SHL	✓	✓	✓	✓
-03	2020-0528-1330-HA20-22	05/28/20	1330	Soil	SHL	✓	✓	✓	✓

Container Type
Preservative

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

Total Bottles

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Dr. Jon Sandquist	05/28/20 1449	R Cunningham AAL	5/28/20 14:50
R Cunningham AAL	05/28/20 14:50		5/28/20 20:56

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement# 2015-18-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

Document ID: 20455 Rev 1 (1/28/2016)

ANALYTICAL REPORT

Lab Number:	L2022829
Client:	Haley & Aldrich 200 Town Centre Drive Suite 2 Rochester, NY 14623-4264
ATTN:	John DiGenova
Phone:	(585) 359-9000
Project Name:	FORMER INGERSOL- RAND FOUNDRY
Project Number:	135100-002
Report Date:	06/04/20

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022829
Report Date: 06/04/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2022829-01	2020-0602-1500-HA20-7	SOIL	PAINTED POST, NY	06/02/20 15:00	06/03/20

Project Name:	FORMER INGERSOL- RAND FOUNDRY	**Lab Number:**	L2022829
Project Number:	135100-002	**Report Date:**	06/04/20

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	FORMER INGERSOL- RAND FOUNDRY	**Lab Number:**	L2022829
Project Number:	135100-002	**Report Date:**	06/04/20

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

Any reported concentrations that are below 200 ug/kg may be biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.

L2022829-01 (2020-0602-1500-HA20-7): The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (150%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 06/04/20

ORGANICS

VOLATILES

Project Name: FORMER INGERSOL- RAND FOUNDRY **Lab Number:** L2022829

Project Number: 135100-002 **Report Date:** 06/04/20

SAMPLE RESULTS

Lab ID: L2022829-01
Client ID: 2020-0602-1500-HA20-7
Sample Location: PAINTED POST, NY

Date Collected: 06/02/20 15:00
Date Received: 06/03/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 06/04/20 08:09
Analyst: AD
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	5.2	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.15	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.0	0.24	1
Tetrachloroethene	ND		ug/kg	0.52	0.20	1
Chlorobenzene	ND		ug/kg	0.52	0.13	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.27	1
1,1,1-Trichloroethane	ND		ug/kg	0.52	0.17	1
Benzene	ND		ug/kg	0.52	0.17	1
Toluene	0.89	J	ug/kg	1.0	0.57	1
Ethylbenzene	ND		ug/kg	1.0	0.15	1
Vinyl chloride	ND		ug/kg	1.0	0.35	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.14	1
Trichloroethene	ND		ug/kg	0.52	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.21	1
p/m-Xylene	ND		ug/kg	2.1	0.58	1
o-Xylene	ND		ug/kg	1.0	0.30	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Acetone	ND		ug/kg	10	5.0	1
2-Butanone	ND		ug/kg	10	2.3	1
n-Butylbenzene	ND		ug/kg	1.0	0.17	1
sec-Butylbenzene	0.70	J	ug/kg	1.0	0.15	1
tert-Butylbenzene	ND		ug/kg	2.1	0.12	1
n-Propylbenzene	ND		ug/kg	1.0	0.18	1

Project Name: FORMER INGERSOL- RAND FOUNDRY **Lab Number:** L2022829

Project Number: 135100-002 **Report Date:** 06/04/20

SAMPLE RESULTS

Lab ID: L2022829-01 Date Collected: 06/02/20 15:00

Client ID: 2020-0602-1500-HA20-7 Date Received: 06/03/20

Sample Location: PAINTED POST, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	0.27	J	ug/kg	2.1	0.20	1
1,2,4-Trimethylbenzene	0.79	J	ug/kg	2.1	0.35	1
1,4-Dioxane	ND		ug/kg	84	37.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	82		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	**150**	Q	70-130
Dibromofluoromethane	95		70-130

Project Name: FORMER INGERSOL- RAND FOUNDRY **Lab Number:** L2022829

Project Number: 135100-002 **Report Date:** 06/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/04/20 07:43
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1377869-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.16	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	0.21	J	ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19

Project Name: FORMER INGERSOL- RAND FOUNDRY **Lab Number:** L2022829

Project Number: 135100-002 **Report Date:** 06/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/04/20 07:43
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1377869-5					
1,2,4-Trimethylbenzene	0.45	J	ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022829
Report Date: 06/04/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1377869-3 WG1377869-4								
Methylene chloride	88		86		70-130	2		30
1,1-Dichloroethane	102		101		70-130	1		30
Chloroform	109		108		70-130	1		30
Carbon tetrachloride	112		110		70-130	2		30
Tetrachloroethene	112		111		70-130	1		30
Chlorobenzene	104		103		70-130	1		30
1,2-Dichloroethane	112		107		70-130	5		30
1,1,1-Trichloroethane	114		112		70-130	2		30
Benzene	108		106		70-130	2		30
Toluene	102		100		70-130	2		30
Ethylbenzene	105		105		70-130	0		30
Vinyl chloride	82		82		67-130	0		30
1,1-Dichloroethene	96		95		65-135	1		30
trans-1,2-Dichloroethene	105		103		70-130	2		30
Trichloroethene	115		113		70-130	2		30
1,2-Dichlorobenzene	105		103		70-130	2		30
1,3-Dichlorobenzene	106		104		70-130	2		30
1,4-Dichlorobenzene	103		101		70-130	2		30
Methyl tert butyl ether	107		100		66-130	7		30
p/m-Xylene	108		108		70-130	0		30
o-Xylene	109		109		70-130	0		30
cis-1,2-Dichloroethene	112		110		70-130	2		30
Acetone	93		86		54-140	8		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022829
Report Date: 06/04/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1377869-3 WG1377869-4								
2-Butanone	88		79		70-130	11		30
n-Butylbenzene	103		103		70-130	0		30
sec-Butylbenzene	103		103		70-130	0		30
tert-Butylbenzene	105		104		70-130	1		30
n-Propylbenzene	102		101		70-130	1		30
1,3,5-Trimethylbenzene	104		103		70-130	1		30
1,2,4-Trimethylbenzene	106		105		70-130	1		30
1,4-Dioxane	109		99		65-136	10		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		97		70-130
Toluene-d8	93		94		70-130
4-Bromofluorobenzene	98		96		70-130
Dibromofluoromethane	106		105		70-130

SEMIVOLATILES

Project Name: FORMER INGERSOL- RAND FOUNDRY
Lab Number: L2022829
Project Number: 135100-002
Report Date: 06/04/20

SAMPLE RESULTS

Lab ID: L2022829-01
Client ID: 2020-0602-1500-HA20-7
Sample Location: PAINTED POST, NY

Date Collected: 06/02/20 15:00
Date Received: 06/03/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 06/04/20 07:59
Analyst: SZ
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 06/04/20 02:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	170	22.	1
Hexachlorobenzene	ND		ug/kg	130	24.	1
Fluoranthene	ND		ug/kg	130	24.	1
Naphthalene	ND		ug/kg	210	26.	1
Benzo(a)anthracene	ND		ug/kg	130	24.	1
Benzo(a)pyrene	ND		ug/kg	170	51.	1
Benzo(b)fluoranthene	ND		ug/kg	130	36.	1
Benzo(k)fluoranthene	ND		ug/kg	130	34.	1
Chrysene	ND		ug/kg	130	22.	1
Acenaphthylene	ND		ug/kg	170	32.	1
Anthracene	ND		ug/kg	130	41.	1
Benzo(ghi)perylene	ND		ug/kg	170	25.	1
Fluorene	ND		ug/kg	210	20.	1
Phenanthrene	ND		ug/kg	130	26.	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	24.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	170	29.	1
Pyrene	140		ug/kg	130	21.	1
Dibenzofuran	ND		ug/kg	210	20.	1
Pentachlorophenol	ND		ug/kg	170	46.	1
Phenol	ND		ug/kg	210	32.	1
2-Methylphenol	ND		ug/kg	210	33.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	33.	1

Project Name: FORMER INGERSOL- RAND FOUNDRY **Lab Number:** L2022829

Project Number: 135100-002 **Report Date:** 06/04/20

SAMPLE RESULTS

Lab ID: L2022829-01 Date Collected: 06/02/20 15:00

Client ID: 2020-0602-1500-HA20-7 Date Received: 06/03/20

Sample Location: PAINTED POST, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	93		25-120
Phenol-d6	97		10-120
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	82		30-120
2,4,6-Tribromophenol	92		10-136
4-Terphenyl-d14	83		18-120

Project Name: FORMER INGERSOL- RAND FOUNDRY **Lab Number:** L2022829

Project Number: 135100-002 **Report Date:** 06/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 06/03/20 14:16
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 06/03/20 07:49

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1377284-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	98	18.
Fluoranthene	ND		ug/kg	98	19.
Naphthalene	ND		ug/kg	160	20.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	98	27.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	98	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
Dibenzofuran	ND		ug/kg	160	15.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	26.

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022829
Report Date: 06/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 06/03/20 14:16
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 06/03/20 07:49

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1377284-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		25-120
Phenol-d6	69		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	61		30-120
2,4,6-Tribromophenol	62		10-136
4-Terphenyl-d14	72		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022829
Report Date: 06/04/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1377284-2 WG1377284-3								
Acenaphthene	71		72		31-137	1		50
Hexachlorobenzene	61		65		40-140	6		50
Fluoranthene	68		73		40-140	7		50
Naphthalene	66		68		40-140	3		50
Benzo(a)anthracene	67		71		40-140	6		50
Benzo(a)pyrene	68		74		40-140	8		50
Benzo(b)fluoranthene	72		75		40-140	4		50
Benzo(k)fluoranthene	62		71		40-140	14		50
Chrysene	68		72		40-140	6		50
Acenaphthylene	73		76		40-140	4		50
Anthracene	69		74		40-140	7		50
Benzo(ghi)perylene	70		76		40-140	8		50
Fluorene	69		73		40-140	6		50
Phenanthrene	68		72		40-140	6		50
Dibenzo(a,h)anthracene	68		73		40-140	7		50
Indeno(1,2,3-cd)pyrene	68		72		40-140	6		50
Pyrene	66		71		35-142	7		50
Dibenzofuran	67		69		40-140	3		50
Pentachlorophenol	58		62		17-109	7		50
Phenol	68		71		26-90	4		50
2-Methylphenol	75		77		30-130.	3		50
3-Methylphenol/4-Methylphenol	83		84		30-130	1		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022829
Report Date: 06/04/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1377284-2 WG1377284-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	79		81		25-120
Phenol-d6	78		79		10-120
Nitrobenzene-d5	82		84		23-120
2-Fluorobiphenyl	66		68		30-120
2,4,6-Tribromophenol	68		71		10-136
4-Terphenyl-d14	74		79		18-120

PCBS

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022829
Report Date: 06/04/20

SAMPLE RESULTS

Lab ID: L2022829-01
Client ID: 2020-0602-1500-HA20-7
Sample Location: PAINTED POST, NY

Date Collected: 06/02/20 15:00
Date Received: 06/03/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 06/04/20 09:06
Analyst: JM
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 06/04/20 02:57
Cleanup Method: EPA 3665A
Cleanup Date: 06/04/20
Cleanup Method: EPA 3660B
Cleanup Date: 06/04/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	41.2	3.66	1	A
Aroclor 1221	ND		ug/kg	41.2	4.13	1	A
Aroclor 1232	ND		ug/kg	41.2	8.73	1	A
Aroclor 1242	ND		ug/kg	41.2	5.55	1	A
Aroclor 1248	ND		ug/kg	41.2	6.18	1	A
Aroclor 1254	ND		ug/kg	41.2	4.51	1	A
Aroclor 1260	ND		ug/kg	41.2	7.61	1	A
Aroclor 1262	ND		ug/kg	41.2	5.23	1	A
Aroclor 1268	ND		ug/kg	41.2	4.27	1	A
PCBs, Total	ND		ug/kg	41.2	3.66	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	41		30-150	A
Decachlorobiphenyl	47		30-150	A
2,4,5,6-Tetrachloro-m-xylene	39		30-150	B
Decachlorobiphenyl	46		30-150	B

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022829
Report Date: 06/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 06/04/20 01:38
Analyst: JM

Extraction Method: EPA 3546
Extraction Date: 06/03/20 11:15
Cleanup Method: EPA 3665A
Cleanup Date: 06/03/20
Cleanup Method: EPA 3660B
Cleanup Date: 06/03/20

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1377406-1						
Aroclor 1016	ND		ug/kg	32.4	2.88	A
Aroclor 1221	ND		ug/kg	32.4	3.24	A
Aroclor 1232	ND		ug/kg	32.4	6.86	A
Aroclor 1242	ND		ug/kg	32.4	4.36	A
Aroclor 1248	ND		ug/kg	32.4	4.86	A
Aroclor 1254	ND		ug/kg	32.4	3.54	A
Aroclor 1260	ND		ug/kg	32.4	5.98	A
Aroclor 1262	ND		ug/kg	32.4	4.11	A
Aroclor 1268	ND		ug/kg	32.4	3.35	A
PCBs, Total	ND		ug/kg	32.4	2.88	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	51		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	59		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022829
Report Date: 06/04/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1377406-2 WG1377406-3									
Aroclor 1016	66		57		40-140	15		50	A
Aroclor 1260	58		50		40-140	15		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		58		30-150	A
Decachlorobiphenyl	58		50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		65		30-150	B
Decachlorobiphenyl	66		56		30-150	B

INORGANICS
&
MISCELLANEOUS

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002
Lab Number: L2022829
Report Date: 06/04/20

SAMPLE RESULTS

Lab ID: L2022829-01
Client ID: 2020-0602-1500-HA20-7
Sample Location: PAINTED POST, NY
Sample Depth:
Matrix: Soil
Date Collected: 06/02/20 15:00
Date Received: 06/03/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.2		%	0.100	NA	1	-	06/04/20 05:10	121,2540G	PR

Lab Duplicate Analysis

Batch Quality Control

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022829
Report Date: 06/04/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1377676-1 QC Sample: L2022829-01 Client ID: 2020-0602-1500-HA20-7						
Solids, Total	77.2	78.2	%	1		20

Project Name: FORMER INGERSOL- RAND FOUNDRY
Project Number: 135100-002

Lab Number: L2022829
Report Date: 06/04/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2022829-01A	Plastic 2oz unpreserved for TS	A	NA		4.9	Y	Absent		TS(7)
L2022829-01B	Glass 60mL/2oz unpreserved	A	NA		4.9	Y	Absent		NYTCL-8270(14),NYTCL-8082(14)
L2022829-01C	Vial Large Septa unpreserved (4oz)	A	NA		4.9	Y	Absent		NYTCL-8260-R2(14)
L2022829-01D	Glass 250ml/8oz unpreserved	A	NA		4.9	Y	Absent		NYTCL-8270(14),NYTCL-8082(14)
L2022829-01X	Vial MeOH preserved split	A	NA		4.9	Y	Absent		NYTCL-8260-R2(14)
L2022829-01Y	Vial Water preserved split	A	NA		4.9	Y	Absent	04-JUN-20 02:58	NYTCL-8260-R2(14)
L2022829-01Z	Vial Water preserved split	A	NA		4.9	Y	Absent	04-JUN-20 02:58	NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	FORMER INGERSOL- RAND FOUNDRY	**Lab Number:**	L2022829
Project Number:	135100-002	**Report Date:**	06/04/20

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER INGERSOL- RAND FOUNDRY	**Lab Number:**	L2022829
Project Number:	135100-002	**Report Date:**	06/04/20

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER INGERSOL- RAND FOUNDRY	**Lab Number:**	L2022829
Project Number:	135100-002	**Report Date:**	06/04/20

Data Qualifiers

Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	FORMER INGERSOL- RAND FOUNDRY	**Lab Number:**	L2022829
Project Number:	135100-002	**Report Date:**	06/04/20

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Brewer, ME 04412 Portsmouth, NH 03801 Mahwah, NJ 07430
Albany, NY 12206
Tonawanda, NY 14150 Holmes, PA 19043

Page 1 of 1

Date Rec'd in Lab: 6/4/20

ALPHA Job #: L2022829

H&A Information
- H&A Client: Meghan Brassard
- H&A Address: 3 Bedford Farms Dr, Bedford, NH 03110
- H&A Phone: 603-391-3326
- H&A Fax:
- H&A Email: Mbrassard@haleyaldrich.com

Project Information
- Project Name: Former Ingersol-Rand Foundry Site
- Project Location: Painted Post, NY
- Project #: 155100-002
- (Use Project name as Project #)
- Project Manager: John DiGenova
- ALPHAQuote #:

Turn-Around Time
- Standard
- Rush (only if pre approved)
- Due Date:
- # of Days:

Deliverables
- Email
- Fax
- EQuIS (1 File)
- EQuIS (4 File)
- Other:

Billing Information
- Same as Client Info
- PO #

Regulatory Requirements (Program/Criteria)

Note: Select State from menu & identify criteria

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:
- NJ
- NY
- Other:

These samples have been previously analyzed by Alpha

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
- Done
- Lab to do

Preservation
- Lab to do

(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Part 375 PCBs	Part 375 VOCs	Part 375 SVOCs	Sample Specific Comments
22829-01	2020-0602-K00-HA20-7	06/02/20	15:00	Soil	SHL	✓	✓	✓	20-22'

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code:
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type

Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
SCH (via Fed Ex)	06/03/20 12:30	R Cunningham AAL	6/3/20 12:30
R Cunningham AAL	6/3/20 12:30		6/4/20 09:15

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement# 2015-18-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

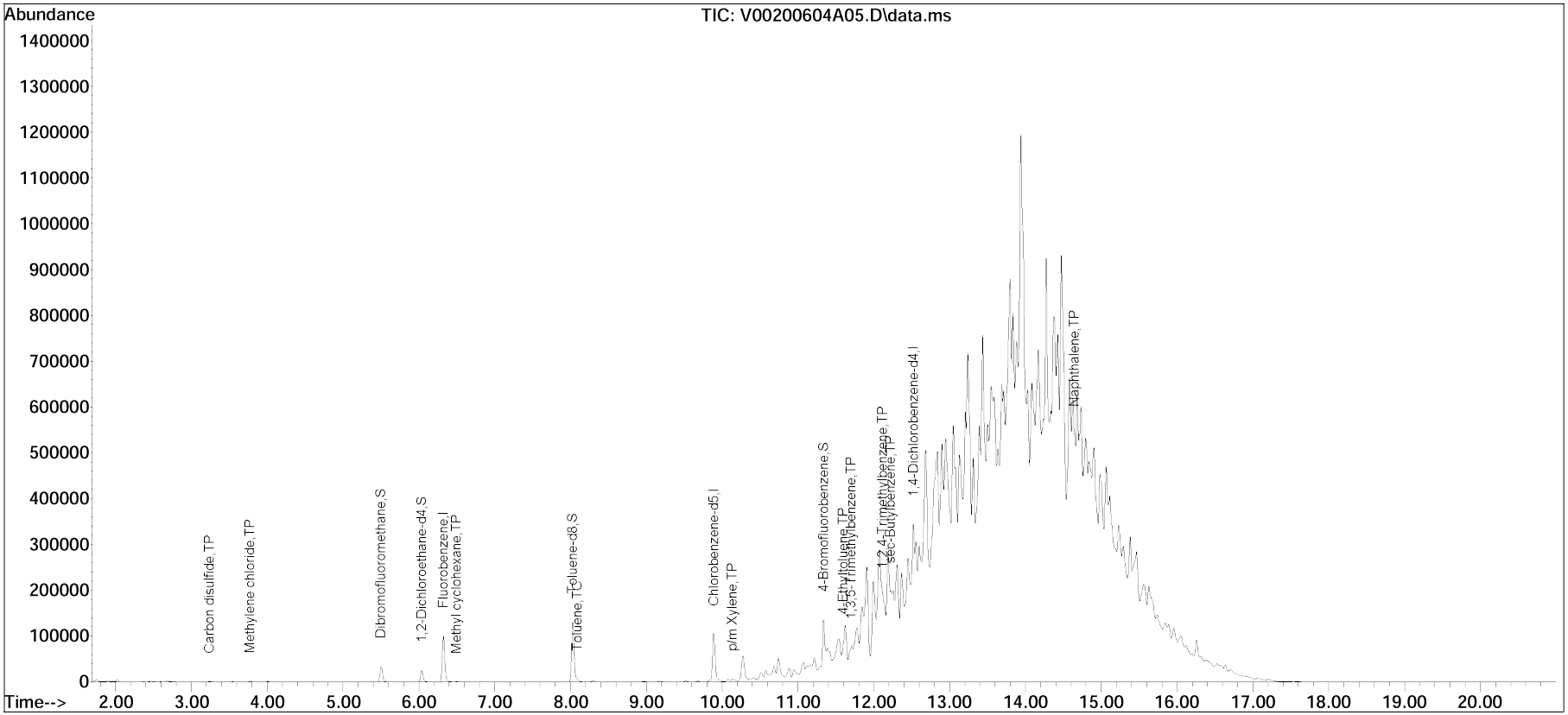
Document ID: 20455 Rev 1 (1/28/2016)

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA100\2020\200604A\
Data File : V00200604A05.D
Acq On : 4 Jun 2020 8:09
Operator : VOA100:AD
Sample : l2022829-01,31,6.20,5,,y
Misc : WG1377869,ICAL16779
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 04 10:34:58 2020
Quant Method : I:\VOLATILES\VOA100\2020\200604A\V100_200512A_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Wed May 13 17:56:38 2020
Response via : Initial Calibration

Sub List : 8260-CurveSoil - Megamix plus Diox4A\V00200604A01.D•



Appendix E
Water Resources

STORMWATER POLLUTION PREVENTION PLAN

WEST WATER STREET REDEVELOPMENT PROJECT

PREPARED FOR

VILLAGE OF PAINTED POST
261 STEUBEN STREET
PAINTED POST, NY 14870

PREPARED BY

FAGAN ENGINEERS
& LAND SURVEYORS PC

July 2025
FE PROJECT NO. 2020-045.001

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Appendix B NYSDEC SPDES Forms

Appendix C HydroCAD Drainage Calculations and Output: Existing Conditions

Appendix D HydroCAD Drainage Calculations and Output: Developed & Mitigated Conditions

Appendix E Water Quality, and Conveyance Sizing

Appendix F USDA NRCS Soil Survey

Appendix G NYSDEC *Blue Book "Lite"*

Appendix H Deep Ripping and Decompaction
Soil Restoration Standards and Specifications

Appendix I SPDES Construction Log Book

Appendix J Site Plan Drawings

I. INTRODUCTION AND REGULATORY INFORMATION

The proposed project will be the construction of a potential office park within the Village of Painted Post on a 49 acre parcel. The proposed project will consist of 249,000 and 352,800 total square feet of buildings, associated parking, landscaping, stormwater, and required earthwork. Appendix J contains the Project Drawings for the proposed project. The proposed project will disturb more than one acre, and therefore a Stormwater Pollution Prevention Plan (SWPPP) is required by the New York State Department of Conservation (NYSDEC). The intent of this report is to provide a SWPPP and Drainage Analysis to comply with the SPDES General Permit for Construction Activities (GP-0-25-001) requirements.

This SWPPP is prepared to instruct owners/operators and their Contractors on mitigation measures to prevent pollutants in stormwater runoff from entering the waters of the United States. Stormwater discharges from construction activities are required to obtain permit coverage through New York's State Pollution Discharge Elimination System (SPDES). The New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-25-001) requirements must be adhered to. Appendix A contains a copy of the GP-0-25-001 permit.

The Notice of Intent (NOI) for the General Permit and the MS4 Acceptance Form for this project is included in Appendix B. The Owner or Operator must submit a complete NOI electronically using the NYSDEC approved form completed in Appendix B. A paper copy is no longer acceptable, unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). The Owner or Operator is authorized to commence construction activity as of the authorization date indicated in the Letter of Authorization (LOA), which is sent by NYSDEC after a complete eNOI is submitted. If the project is within an MS4 district, the Owner or Operator must send an electronic copy of the LOA to the Local MS4 Official within 5 business days of receipt. After project completion and requirements within the GP-0-25-001 have been met, the Owner or Operator shall submit a complete Notice of Termination (NOT) form electronically using the NYSDEC approved form. Again, a paper copy is no longer acceptable unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d).

Certification

The SWPPP preparer, the Owner/Operator and each Contractor and Subcontractor must sign the appropriate certification in the Construction Site Logbook. All appropriate signatures must be obtained prior to work commencing on the project site. This logbook is included in Appendix I.

The Owner/Operator must identify the Contractor(s) and Subcontractor(s) that will be responsible for installing, constructing, repairing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP. Each Contractor and Subcontractor must identify at least one trained individual from their company that will be responsible for implementation of the SWPPP. At least one trained individual must be on site on a daily basis when soil disturbance activities are being performed. A trained individual is defined as an employee from the contracting company, that has received for (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the trained contractor shall receive four (4) hours of training every three (3) years.

Submittals

The Contractor shall submit a "Construction Phasing Plan" which shows the sequence of construction, the installations of erosion and sediment control practices, a list of areas to be disturbed associated with each construction activity and the procedure for stabilizing inactive disturbed areas. Proposed dates shall be provided for all the construction activities including temporary and permanent stormwater control measures.

SWPPP Availability

This SWPPP will be kept on-site for review by regulatory agencies, the Engineer and Contractors. The SWPPP will stored in a clearly labeled location which is accessible at all times. It cannot be kept in a location which is locked during off-hours.

References and Standards

The NYSDEC technical standards for erosion and sediment controls are contained in the "*New York Standards and Specifications for Erosion and Sediment Control*". This document can be obtained by contacting NYSDEC or downloaded from the NYSDEC website from the following link, http://www.dec.ny.gov/chemical/8694.html . A selection of common standards and specifications are included as the Blue-Book "Lite" in Appendix G.

Site Location

The project parcel is located at 3586 Chambers Road, roughly 1,700 ft south of the intersection of Sing Sing Road and Chambers Road within the Village of Painted Post.

Site Owner/Operator

The name and address of the Owner/Operator, including contact person is:

Owner/Operator
Contact
Address

Phone Number

Pre-construction Requirements

Prior to any soil disturbance at the project site the "Construction Site Logbook" must be located on-site with all required signatures. The pre-construction meeting and inspection form must be completed. All required temporary erosion control measures must be installed for the involved phases of the project.

II. STORMWATER RUNOFF CONTROL

The SPDES General Permit for Construction Activities program requires that the development of any project must include a hydrological study demonstrating that the proposed project will not increase runoff rates during the 10 and 100-year design storm. This section of the SWPPP is dissected into three areas - existing conditions, developed conditions and mitigation measures.

Existing Conditions

Based upon the NRCS Soil Survey (Appendix F), the study area consists of the following soil types:

> Tg—Tioga silt loam – Tioga soils are designated as 'A' group soils in the USDA NRCS *Urban Hydrology for Small Watersheds* (TR-55) manual. Group 'A' soils have high infiltration rates when thoroughly wetted;
>
> CF—Cut and fill land are undesignated soils in the USDA NRCS *Urban Hydrology for Small Watersheds* (TR-55) manual.

The proposed project area will be divided into two different study areas.

EDA-1 This drainage area consists of mainly meadow, with some pavement and wooded areas. The Point of Study (POS) for this drainage area is a low spot located towards the south end of the property.

The existing drainage conditions were modeled with the use of the USDA NRCS Technical Release 55 (TR-55) titled *Urban Hydrology for Small Watersheds* and *HydroCAD*. The curve numbers, times of concentration and areas are summarized on the following table:

Table I
Existing Conditions Drainage Properties

Drainage Area	Area (acres)	Curve Number	Time of Conc. (min)
EDA-1	44.80	45	22.1
Total	**44.80**		

Appendix C contains the output for the existing conditions as well as the drainage area map. The estimated existing condition design storm peak runoff rates are as follows:

Table II
Existing Drainage Peak Runoff Rates

Design Storm	1-Year Storm	10-Year Storm	100 Year Storm
EDA-1	0.00 cfs	0.31 cfs	20.23 cfs

cfs: Cubic Feet per Second

Developed Conditions

The project drawings depict the proposed development of the site. The developed condition was also modeled with the USDA NRCS Technical Release 55 (TR-55) titled *Urban Hydrology for Small Watersheds* and *HydroCAD*. The project has two major drainage areas. The drainage areas are the following:

PDA-1 This drainage area consists of the meadow area. The POS for this drainage area is a low spot located towards the south end of the property.

The total areas, curve number, and times of concentration for the developed drainage areas area summarized on Table III. A map showing the proposed drainage areas is included in Appendix D.

Table III
Developed Conditions Drainage Properties

Drainage Area	Area (acres)	Curve Number	Time of Conc. (min)
PDA-1	44.80	62	1.9
PDA Max	44.80	69	1.9

Appendix D contains the output for the developed conditions as well as the drainage area map. The estimated existing and developed condition design storm peak runoff rates are as follows:

Table IV
Developed Drainage Peak Runoff Rates

Design Storm	1-Year Storm	10-Year Storm	100 Year Storm
PDA-1	0.90 cfs	44.40 cfs	170.73 cfs
PDA Max	13.53 cfs	79.16 cfs	218.80 cfs

cfs: Cubic Feet per Second

As shown in the table above, the stormwater estimates for the project depict an increase in the peak runoff rate in the developed condition for drainage area two. Mitigation will be required for this drainage area.

Mitigation Measures

Since the proposed project will disturb more than 1 acre, stormwater quality and quantity mitigation measures are required under the NYSDEC SPDES program (GP-0-25-001). The proposed forebay, and infiltration basin will provide water quality mitigation as required in Chapter 4 of the *New York State Stormwater Management Design Manual*.

The following table is a summary of the proposed mitigation.

Table V
Stormwater Mitigation Summary

Design Storm	1-Year Storm	10-Year Storm	100 Year Storm
PDA-1	0.00 cfs	0.00 cfs	0.00 cfs
PDA Max	0.00 cfs	0.00 cfs	0.00 cfs

cfs: Cubic Feet per Second

As seen in the table above, the proposed infiltration basin will exceed the NYSDEC requirements for mitigation compared to the existing condition. The HydroCAD output for the mitigation analysis is included in Appendix D as part of the Mitigated Condition.

The proposed infiltration basin was designed to accommodate the 100-yr storm without the need for an outlet structure. As seen in the table below, the max elevation reached by the 100-Year storm is 951.32 for infiltration basin. This will provide the required one foot of free board below the top of the proposed infiltration basin.

Table VI: Stormwater BMP Summary – Infiltration Basin

Design Storm	Stormwater Inflow	Basin Discharge	Peak Elevation
1-Year Storm	0.90 cfs	0.00 cfs	96.00
10-Year Storm	44.80 cfs	0.00 cfs	96.31
100-Year Storm	170.73 cfs	0.00 cfs	98.27

cfs: Cubic Feet per Second Max Elev. = 100
Infiltation Rate = 5.0 inch/hr Basin Volume = 5.944 ac-ft

Table VI: Stormwater BMP Summary – Max Infiltration Basin

Design Storm	Stormwater Inflow	Basin Discharge	Peak Elevation
1-Year Storm	13.53 cfs	0.00 cfs	96.03
10-Year Storm	76.16 cfs	0.00 cfs	96.48
100-Year Storm	218.80 cfs	0.00 cfs	98.18

cfs: Cubic Feet per Second Max Elev. = 100
Infiltation Rate = 5.0 inch/hr Basin Volume = 8.194 ac-ft

As shown in the above tables, the proposed infiltration basin will handle the 100-Year storm and exceed NYSDEC requirements.

Community Risk and Resiliency Act

This Stormwater Pollution Prevention Plan (SWPPP) includes a comprehensive assessment of future physical risks due to climate change, as required by the Community Risk and Resiliency Act (CRRA). The following considerations have been integrated into the overall site planning, location and elevation of features, and the design and sizing of stormwater control measures, conveyance systems, and detention infrastructure:

1. Increasing Temperature
Projected increases in average and extreme temperatures may accelerate the degradation of stormwater infrastructure materials and impact biological processes within green infrastructure. Control measures have been designed with materials and vegetative species that are heat-tolerant and resilient to prolonged warm conditions, reducing maintenance and extending functional lifespan.

2. Increasing Precipitation
With the expectation of more intense and frequent rainfall events, stormwater systems have been sized using the 100-Year storm event based on updated precipitation data from NOAA Atlas 14 and relevant NYS DEC guidance. Increased storm volumes were considered to ensure adequate capture and slow release of runoff to prevent downstream erosion and flooding.

3. Increasing Variability in Precipitation, Including Drought
This site is prepared to handle both extremes—heavy rainfall and extended dry periods. Vegetative practices include drought-tolerant plantings to remain effective during low-moisture periods, and erosion controls have been placed to stabilize soils during intermittent storm events. Extended dry conditions could lead to concentrated pollutant buildup; thus, pre-treatment features like forebays and vegetated buffers are included to improve water quality.

4. Increasing Frequency and Severity of Flooding
Design elevations and critical infrastructure placements (e.g., inlets, outelt structures) take into account future floodplain projections. Conveyance and detention systems are placed and sized with freeboard considerations to accommodate both current and future 100-year flood elevations, based on FEMA flood maps and NYS guidance.

5. Rising Sea Level
Although this site is not directly adjacent to tidal waters, indirect effects of sea level rise—such as altered groundwater levels and increased backflow pressure in regional drainage systems—were considered. Higher invert elevations on critical outflows have been incorporated to reduce risk of reverse flow or inundation during high tides or storm surge events.

6. Increasing Storm Surge
Where applicable, storm surge risks from coastal storms have been evaluated using NYSDEC Sea Level Rise projections and FEMA surge maps. For lower-lying areas, infrastructure has been elevated or protected to minimize surge impacts, particularly on conveyance and detention infrastructure vulnerable to temporary overtopping or saltwater intrusion.

7. Shifting Ecology
Changes in regional ecology may affect the viability of plant species and ecosystem functions in vegetated practices (e.g., bioretention areas, swales). Planting plans were developed with input from regional climate-adaptive planting guides to ensure long-term viability and performance of stormwater management systems.

III. EROSION CONTROL PLAN

The project drawings depict the proposed stormwater basin. The drawings also depict locations of the standard temporary and permanent erosion control measures. The following is a summary of the erosion control measures:

Temporary Erosion Control

A complete list of NYSDEC approved temporary erosion control measures can be found in the "*New York Standards and Specifications for Erosion and Sediment Control*". The temporary erosion control measures (with the reference page in parentheses) that are to be utilized on this site include but are not limited to the following:

Stabilized Construction Access (2.30): Install stone access drive prior to disturbing site and maintain throughout the duration of the project until permanent stabilization is established. Sweep adjoining pavement as required.

Topsoil Stockpile: Locate stockpile(s) away from drainage structures. Protect with perimeter silt fence and vegetative cover.

Concrete Truck Washout (2.24): Install concrete truck washout on-site. Care should be taken to ensure trucks leaving the concrete washout do not track soil and debris onto the public road.

Dust Control (2.25): Dust should be controlled on site at all times. Dust control can include but is not limited to use of a water truck, vegetaviteve cover, and mulch or spray adhesives (polymer). No polymer applications shall take place without written approval form the NYSDEC and the CCSWC.

Silt Fence / Compost Filter Socks (5.54 & 5.70): Install silt fence or compost filter socks at the down slope perimeter of the project. Filter socks shall be installed perpendicular to the slope and not within any drainage channels. Maintain filter socks throughout the duration of the project until the establishment of permanent stabilization. Repair breaches in the filter socks on a daily basis.

Site Stabilization: Any disturbed areas of the site where construction activities have temporarily or permanently ceased for more than 14 days shall be stabilized with vegetative cover. Winter stabilization can be done using mulch or other Engineer approved manufactured products.

Permanent Erosion Control

Permanent structures for erosion and sediment control included the following:

Rock Outlet Protection (5B.21): Outlet protection using NYSDEC approved practices will be installed at all drainage outlets. The purpose of the rock outlet protection is to reduce the depth, velocity, and energy of water, such that the flow will not erode the receiving downstream reach.

The contractor is responsible for the maintenance and management of the stormwater management practices during construction. The owner is responsible for the maintenance and management of permanent stormwater structures after project completion. All practices shall be inspected at least semi-annually. Appendix G contains standard detail sheets from the *New York State Guidelines for Urban Erosion and Sediment Control*.

Construction Sequence

All activities must follow the "Construction Phasing Plan" approved by the Engineer. Construction should commence following this general sequence**:**

Construction Sequence

1. All page numbers (p.5*.**) refer to the New York State Guidelines for Urban Erosion and Sediment Control.
2. Control dust on site to prevent dust leaving the site and creating off-site damage, health hazards, and traffic safety problems. Treatment includeds but is not limited to spraying disturbed soil surfaces with water (5A.87).
3. Install stabilized construction entrance (5A.75). width: - Twelve (12) ft. minimum, but not less than the full width at points where ingress or egress occurs. If only one entrance is used the minimum width shall be twenty-four (24) feet.
4. Standard silt fence (P. 5A.19) shall then be placed around all disturbed areas.
5. Construction fence shall then be placed around the infiltration basin area to prevent any staging of construction equipment or materials.
6. Install forebay and rock outlet protection (P. 5B.21) at the storm sewer outlet. Keep forebay elevation one foot higher than shown on plans. This will allow for the forebay to be maintained during construction.
7. Install all utilities (water, sewer, storm, gas, and electric). All utility trenches shall be immediately backfilled and all disturbance to be seeded/mulched.
8. Install rock outlet protection (5B.21) at all storm sewer outlets.

Information Required on Drawings

1. Location(s), size(s) and length(s) of each erosion and sediment control practice both temporary and permanent.
2. Existing and proposed site conditions, details, and other SWPPP related information.
3. Specifications including information pertinent to stormwater management.

Inspection Schedule

The GP-0-25-001 requires periodic inspection by a qualified professional on a periodic basis. The Owner/Operator shall ensure the erosion and sediment controls identified in the SWPPP are being maintained in effective operating conditions at all times. Appendix I contains the NYSDEC SPDES Log Book and related forms.

The Owner/Operator shall have a Qualified Inspector conduct site inspections at least once every seven (7) calendar days for sites with less than five (5) acres of disturbed area at any one time. Sites with more that five (5) acres of disturbed area at any one time require as least two (2) site inspections every seven (7) calendar days. Inspections shall be separated by a minimum of two (2) calendar days. Temporarily stabilized sites with no active site construction will be inspected at least once ever thirty (30) calendar days. The Owner/Operator shall notify the NYSDEC the Village of Painted Post, and the Chemung County Stormwater Coalition in writing prior to reducing the frequency of inspections.

The Qualified Inspector shall notify the Owner/Operator and Contractors of any corrective actions that need to be taken within one business day of the completion of an inspection. The responsible Contractor(s) shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

A Qualified Inspector is a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC) or licensed Landscape Architect. It may also be a person who has received four (4) hours of stormwater training endorsed by the NYSDEC working under the direct supervision of a licensed Professional Engineer or licensed Landscape Architect.

Spill Prevention and Control Practices

The following materials or substances listed below are expected to be present on-site during construction:

- Concrete and concrete projects
- Paints
- Wood
- Asphalt
- Plastics
- Diesel and gasoline fuels
- Motor oil
- Steel
- Sheet metal
- Glass
- Silicone (sealants)

The Contractor is required to keep the site free form construction debris and litter. No construction material or debris shall be allowed to discharge to the waters of the United States.

Materials with the potential for spillage shall be stored in a neat orderly manner and, if possible, under a roof or other enclosure. Materials shall be stored in their original containers with the original manufacturer's label. If materials are kept on-site in containers with a volume of 55 gallons or greater they shall be stored within secondary containment.

The Contractor shall contact the NYSDEC Spill Hotline (1-800-457-7362) in the event a spill occurs on-site during construction. A spill report must be filled out and included in the "Construction Site Logbook".

Project Closeout Requirements

A Notice of Termination (NOT) must be submitted electronically to the NYSDEC once the project is completed to terminate the permit. Total project completion includes the following activities:

- All construction activity identified in the SWPPP has been completed.
- All areas of disturbance have achieved final stabilization as defined in the permit.
- All temporary erosion and sediment control measures have been removed.
- All permanent erosion and sediment control measures have been constructed in conformance with the SWPPP and are operations.
- An as-built drawing has been prepared.
- A final site inspection has been conducted by a Qualified Inspector.
- Have a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the Owner or Operator's deed of record.

Retention of Records

The Owner/Operator shall retain a copy of the following documents on-site for a period of three (3) years from the date of the project sites final stabilization.

- Stormwater Pollution Prevention Plan (SWPPP)
- Contract Documents including Contract Drawings and Technical Specifications.
- Construction Site Logbook including signed certifications and all inspection reports.
- The Notice of Termination (NOT)

Operation and Maintenance of Permanent Structures

INTRODUCTION

The following provides inspection and maintenance procedures associated with the post-construction stormwater quality control devices for site development project located in Painted Post, NY. The post-construction stormwater controls and associated inspection maintenance procedures are required per the NYSDEC general stormwater permit GP-0-25-001 and the Village of Painted Post post-construction operation and maintenance requirements.

Water quality treatment for the Project was designed to be addressed by managing stormwater runoff from the site with an infiltration basin.

CONTACT INFORMATION

The proposed Stormwater Management Practice (SMP) and related utilities shall be inspected and maintained to ensure the stormwater system is functioning properly. Inspections and maintenance will be coordinated by the Site Owner. The system shall be inspected within 24 hours of significant rain events (≥ 0.5 inches of rain over a 24-Hour period) following the completion of construction activities in addition to routine inspections conducted during the first year of stormwater treatment. An annual inspection frequency may be determined based upon the results of the first year routine inspections, but should be no less than annually unless otherwise noted. Guidance for maintenance activities is listed in the following sections.

Post-Construction Operator:	TBD
General Contractor:	TBD
Design Engineer:	Karl Schwesinger, PE Fagan Engineers & Land Surveyors, P.C. 113 E. Chemung Place Elmira, NY 14904 Phone: 607-734-2165
Permitting Authority:	New York State Department of Env. Conservation Division of Water 625 Broadway, 4th Floor Albany, NY 12233-3505 Phone: 518-402-8233
Regulated MS4 Authority:	Village of Painted Post Code Enforcement Office 261 Steuben Street Painted Post, NY 14870-0110 Phone: 607-962-4604

POST-CONSTRUCTION STORMWATER MANAGEMENT FACILITIES

The proposed SMP(s) for this site include:

1. Infiltration Basin
2. Vegetated Swales

Runoff from site improvements from the majority of the site will be collected by swales and catch basins which flow to the forebay. Here the runoff will go through the pre-treatment purposes. From there, the runoff will overflow into the infiltration basin.

Maintenance & Inspection Responsibilities

Reports shall be prepared that summarize the observations made during site inspections. The reports shall additionally indicate maintenance needs. The reports are to be kept on file and made readily available to the Village of Painted Post and the New York State Department of Environmental Conservation upon request. Local authorized agents are authorized to enter the property to inspect the SMPs.

A formal, signed and enforceable maintenance agreement for the stormwater management system shall be provided by the Owner, accepted by the Village, and executed by the Owner prior to the issuance of the Certificate of Occupancy for this project. This agreement shall be binding and recorded with the Chemung County Clerk as a deed restriction on the property. The maintenance agreement shall convey to the Village, the right of entry to perform periofic inspections by the Village and/or their representatives.

Maintenance Procedures & Timelines

Inspection Item	Maintenance Procedures	Frequency of Inspection
Infiltration Basin	- Clean out accumulated sediment within forebay every five to six years or after 50% of total forebay capacity has been lost - Clean trash and debris from the inlet pipe and rip-rap apron. - Eroding soils on the side slopes, embankments, and the contributing drainage area must be stabilized immediately with vegetation or appropriate erosion control practices.	Twice per Year
Lawn	- Remove all litter and debris prior to mowing. - Dispose of removed vegetation at an	When Necessary but not less than Twice per Year

	approved upland location.	
Catch Basins	- Clean trash and debris from the catch basin sumps. - Remove accumulated sediment when 50% of the sump volume has been reached.	When Necessary but not lest than Twice per Year
Vegetated Swale	- Clean trash and debris from the vegetated swales. - Remove accumulated sediment build up when 25% of the original WQv has been exceeded. - Vegetation is mowed as required during the growing season to maintain grass heights in the 4 to 6 inch range.	When Necessary but not less than Twice per Year
Pavement	- Pavement areas shall be kept free of sediment and debris. - Road shall be swept when necessary.	When Necessary but not less than Twice per Year

Snow shall not be stored in any of the basins. Special care should be given to ensure all stormwater inlets and outlets are free from snow and ice that could impede flow.

Appendix A

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-25-001)

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL
CONSERVATION (NYSDEC)

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP-0-25-001

Construction General Permit (CGP)

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2025 Expiration Date: January 28, 2030

Scott E. Sheeley

Chief Permit Administrator

Scott E. Sheeley JAN. 29, 2025

Authorized Signature Date

Address: NYSDEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act (CWA), and 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), *stormwater discharges* from certain *construction activities* are unlawful unless they are authorized by a National Pollutant Discharge Elimination System (NPDES) permit or by a state permit program. New York State administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7 and 8, and Article 70, as well as 6 NYCRR Parts 621 and 750.

C*onstruction activities* constitute construction of a *point source* and, therefore, pursuant to ECL sections 17-0505, 17-0701, and 17-0803, the *owner or operator* must have coverage under a SPDES permit prior to *commencement of construction activities*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES CONSTRUCTION GENERAL PERMIT (CGP) GP-0-25-001
FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Part I. How to Obtain Coverage and General Requirements

To be covered under this permit, the *owner or operator* must meet all eligibility requirements in Part I.A. and follow the requirements for obtaining permit coverage in Part I.D., F., or G.

A. Eligibility Requirements

For a *common plan of development or sale*, the *phase(s)* that meet the eligibility requirements in Part I.A. may obtain coverage under this permit even if other *phase(s)* of the same *common plan of development or sale* do not meet the eligibility requirements and require an individual SPDES permit.

1. The *owner's or operator's construction activities* involve soil disturbances of:

    a. one or more acres; or

    b. less than one acre which are part of a *common plan of development or sale* that will ultimately disturb one or more acres; or

    c. less than one acre where NYSDEC has determined that a SPDES permit is required for *stormwater discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of pollutants to *surface waters of the State*.

        i. 5,000 square feet or more, but less than one acre, and are in the New York City Watershed located east of the Hudson River, Appendix C Figure 1; or

        ii. 20,000 square feet or more, but less than one acre, within the municipal boundaries of the City of New York (NYC); or

        iii. less than 20,000 square feet which are part of a *common plan of development or sale* that will ultimately disturb 20,000 square feet or more, but less than one acre, within the municipal boundaries of NYC; or

        iv. that creates 5,000 square feet or more of *impervious area* within the municipal boundaries of NYC.

2. *Discharges* from the *owner's or operator's construction activities* are/were not:

    a. already covered by a different SPDES permit; or

    b. covered under a different SPDES permit that was denied, terminated, or revoked; or

    c. identified in an expired individual SPDES permit that was not renewed; or

    d. required to obtain an individual SPDES permit or another general SPDES permit in accordance with Part VII.K.

3. If *construction activities* may adversely affect a species that is endangered or threatened, the *owner or operator* must obtain a:

    a. permit issued pursuant to 6 NYCRR Part 182 for the project; or

    b. letter issued by NYSDEC of non-jurisdiction pursuant to 6 NYCRR Part 182 for the project.

4. If *construction activities* have the potential to affect an *historic property*, the *owner or operator* must obtain one of the following:

    a. documentation that the *construction activity* is not within an archeological buffer area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant:

        i. 1-5 acres of disturbance - 20 feet; or

        ii. 5-20 acres of disturbance - 50 feet; or

iii. 20+ acres of disturbance - 100 feet.

b. NYSDEC consultation form sent to OPRHP,[1] and copied to NYSDEC's Agency Historic Preservation Officer (APO), and

i. the State Environmental Quality Review Act (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or

ii. documentation from OPRHP that the *construction activity* will result in No Impact; or

iii. documentation from OPRHP providing a determination of No Adverse Impact; or

iv. a Letter of Resolution signed by the *owner or operator*, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA).

c. documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

i. No Affect; or

ii. No Adverse Affect; or

iii. Executed Memorandum of Agreement.

d. documentation that SHPA Section 14.09 has been completed by NYSDEC or another state agency.

5. If *construction activities* are subject to SEQR, the *owner or operator* must obtain documentation that SEQR has been satisfied.

6. If *construction activities* are not subject to SEQR, but subject to the equivalent environmental review from another New York State or federal agency, the

[1] The consultation form can be submitted, along with other project information, through OPRHP's Cultural Resource Information System (CRIS) portal. If submitted through CRIS, paper copies of the consultation form need not be mailed.

owner or operator must obtain documentation that project review, pursuant to a process equivalent to SEQR from another New York State or federal agency, has been satisfied.

7. If *construction activities* require Uniform Procedures Act (UPA) Permits (see 6 NYCRR Part 621) from NYSDEC, or the equivalent from another New York State or federal agency, the *owner or operator* must:

    a. obtain all such necessary permits; or

    b. receive notification from NYSDEC pursuant to 6 NYCRR 621.3(a)(4) excepting Part I.A.7.a.

8. *Construction activities* are not eligible if they meet the following criteria in Part I.A.8.a. or b.:

    a. For linear transportation and linear utility project types, the *construction activities*:

        i. are within the watershed of *surface waters of the State* classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website; and

        ii. are undertaken on land with no existing *impervious cover*; and

        iii. disturb two or more acres of *steep slope*.

    b. For all other project types, the *construction activities*:

        i. are within the watershed of *surface waters of the State* classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website; and

        ii. are undertaken on land with no existing *impervious cover*; and

        iii. disturb one or more acres of *steep slope*.

B. Types of *Discharges* Authorized

1. The following *stormwater discharges* are authorized under this permit:

    a. *Stormwater discharges*, including *stormwater* runoff, snowmelt runoff, and surface runoff and drainage, associated with *construction activity*, are authorized under this permit provided that appropriate *stormwater* controls are designed, installed, and maintained in accordance with Part II. and Part III.

    b. *Stormwater discharges* from construction support activities at the *construction site* (including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, and borrow areas) if the following requirements are met:

        i. The support activity is directly related to the *construction site* required to have permit coverage for *stormwater discharges*; and

        ii. The support activity is not a commercial operation, nor does it serve multiple unrelated *construction sites*; and

        iii. The support activity does not continue to operate beyond the completion of the *construction activity* at the site it supports; and

        iv. *Stormwater* controls are implemented in accordance with Part II. and Part III. for *discharges* from the support activity areas.

2. The following non-*stormwater discharges* associated with *construction activity* are authorized under this permit:

    a. Non-*stormwater discharges* listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "*Discharges* from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; and

    b. Non-*stormwater discharges* of waters to which other components have not been added that are used in accordance with the *SWPPP* to control dust or irrigate vegetation in stabilized areas; and

    c. Uncontaminated *discharges* from *dewatering* operations

3. Authorized *discharges* of *stormwater* or authorized *discharges* of non-*stormwater*, commingled with a *discharge* authorized by a different SPDES permit and/or a *discharge* that does not require SPDES permit authorization, are also authorized under this permit.

C. Prohibited *Discharges*

1. Non-*stormwater discharges* prohibited under this permit include but are not limited to:

    a. Wastewater from washout of concrete; and

    b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials; and

    c. Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance; and

    d. Soaps, solvents, or detergents used in vehicle and equipment washing or external building washdown; and

    e. Toxic or hazardous substances from a spill or other release.

D. Electronic Notice of Intent (eNOI) Submittal

To receive authorization in accordance with Part I.D.3.b., the *owner or operator* must submit a complete eNOI in accordance with the requirements in Part I.D. The eNOI contains questions to: ensure eligibility requirements in Part I.A. have been met; obtain *owner or operator* contact information; obtain the total area to be disturbed and the existing/future *impervious areas* (rounded to the nearest tenth of an acre); confirm *Traditional Land Use Control MS4 Operator* jurisdiction over construction projects; satisfy the EPA eRule requirements; confirm that the Water Quality-Based Effluent Limitations in Part II. have been met; demonstrate consideration of the future risks due to climate change in accordance with Part III.A.2.; and confirm that the other *Stormwater Pollution Prevention Plan (SWPPP)* requirements in Part III. have been met.

1. An eNOI may be submitted for:

    a. *construction activities* that are not part of a *common plan of development or sale*; or

b. an entire *common plan of development or sale*; or

c. separate *phase(s)* of a *common plan of development or sale* if the following requirements are met:

    i. the *common plan of development or sale* meets the eligibility requirements of Part I.A.5. or 6.; and

    ii. the *phase(s)* meet(s) all other eligibility requirements of Part I.A.; and

    iii. Part III.C. Required *SWPPP* Components by Project Type is based on the *common plan of development or sale*, not the *phase(s)*; or

d. *tree clearing* that is associated with, or will support, a *renewable energy* generation, transmission, or storage project that meets Part I.A.5. and 6., if the *tree clearing*:

    i. meets all other eligibility requirements of Part I.A.; and

    ii. will occur in NYSDEC's Regions 3-9; and

    iii. is not within ¼ mile of a bat hibernaculum protected pursuant to 6 NYCRR Part 182; and

    iv. will occur between November 1st and March 31st.

2. As prerequisites for submitting an eNOI, the *owner or operator* must:

    a. prepare a *SWPPP* for Part I.D.1.a., b., c., or d. in accordance with Part III.; and

    b. based on the following criteria, upload the following signature forms signed in accordance with Part VII.J. to the eNOI prior to submission:

        i. for all eNOIs:

            1. the SWPPP Preparer Certification Form, Appendix F, signed by the *SWPPP* preparer; and

2. the Owner/Operator Certification Form, Appendix J, signed by the *owner or operator*; and

ii. if an eNOI includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that will *discharge* to the *MS4(s)*:

1. determine if the *Traditional Land Use Control MS4 Operator(s)* have review authority. A *Traditional Land Use Control MS4 Operator* does not have review authority where:

a. the *owner or operator* of the *construction activities* in Part I.D.2.b.ii. is the same entity as the *Traditional Land Use Control MS4 Operator* identified in Part I.D.2.b.ii.; or

b. there is a statute exempting the *owner or operator* from zoning review by the *Traditional Land Use Control MS4 Operator*; or

c. there is no such statute per Part I.D.2.b.ii.1.b., the *Traditional Land Use Control MS4 Operator* concludes, after public hearing, that it does not have zoning review authority in accordance with Legal Memorandum LU14 Updated January 2020 “Governmental Immunity from Zoning and Other Legislation”; and

2. if the *Traditional Land Use Control MS4 Operator(s)* have review authority, submit the *SWPPP* to the *Traditional Land Use Control MS4 Operator(s)* for review and have:

a. if outside the municipal boundaries of NYC: the MS4 SWPPP Acceptance Form, Appendix G, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator,* or by a duly authorized representative of that person in accordance with Part VII.J.2.; or

b. if within the municipal boundaries of NYC: The City of New York Department of Environmental Protection (NYCDEP) SWPPP Acceptance/Approval Form, Appendix H, signed by the principal executive officer or ranking elected official from the Traditional Land Use Control MS4 Operator, or by a duly authorized representative of that person in accordance with Part VII.J.2.; and

3. if the *Traditional Land Use Control MS4 Operator* does not have review authority, have the MS4 No Jurisdiction Form, Appendix I, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator,* or by a duly authorized representative of that person in accordance with Part VII.J.2.

3. Submitting an eNOI:

a. The *owner or operator* must submit a complete Notice of Intent electronically using a NYSDEC approved form.[2]

b. The *owner or operator* is authorized to *commence construction activity* as of the authorization date indicated in the Letter of Authorization (LOA), which is sent by NYSDEC after a complete eNOI is submitted.

i. If an eNOI is received for a *SWPPP* that deviates from one of the technical standards but demonstrates *equivalence* in accordance with Part III.B.1.a.ii. or Part III.B.2.b.ii., if the *SWPPP* includes *construction activities* that are not within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)*, and/or if the *SWPPP* includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that do not have review authority in accordance with Part I.D.2.b.ii.1., the authorization date indicated in the LOA will be 60 business days after the eNOI submission date.

[2] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

c. If *Traditional Land Use Control MS4 Operator(s)* have review authority in accordance with Part I.D.2.b.ii.2., the *owner or operator* must, within five business days of receipt of the LOA, send an electronic copy of the LOA to the *Traditional Land Use Control MS4 Operator(s)* with review authority.

E. General Requirements for *Owners or Operators* with Permit Coverage

1. As of the date the LOA is received, the *owner or operator* must make the eNOI, *SWPPP*, and LOA available for review and copying in accordance with the requirements in Part VII.H. When applicable, as of the date an updated LOA is received, the *owner or operator* must make the updated LOA available for review and copying in accordance with the requirements in Part VII.H.

2. The *owner or operator* must ensure compliance with all requirements of this permit and that the provisions of the *SWPPP*, including any changes made to the *SWPPP* in accordance with Part III.A.5., are properly implemented and maintained from the *commencement of construction activity* until:

   a. all areas of disturbance have achieved *final stabilization;* and

   b. the owner's or operator's coverage under this permit is terminated in accordance with Part V.A.5.a.

3. As of the date of the *commencement of construction activities* until Part I.E.2.a. and b. have been met, the *owner or operator* must maintain at the *construction site*, a copy of:

   a. all documentation necessary to demonstrate eligibility with this permit; and

   b. this permit; and

   c. the *SWPPP*; and

   d. the signed SWPPP Preparer Certification Form; and

   e. the signed MS4 SWPPP Acceptance Form or signed NYCDEP SWPPP Acceptance/Approval Form or signed MS4 No Jurisdiction Form (when applicable); and

   f. the signed Owner/Operator Certification Form; and

g. the eNOI; and

h. the LOA; and

i. the LOA transmittal to the Traditional Land Use Control MS4 Operator in accordance with Part I.D.3.c. (when applicable).

4. The *owner or operator* must maintain at the *construction site*, until Part I.E.2.a. and b. have been met, as of the date the documents become final or are received, a copy of the:

   a. responsible contractor's or subcontractor's certification statement(s) in accordance with Part III.A.7.; and

   b. inspection reports in accordance with Part IV.C.4. and 6.; and

   c. Request to Disturb Greater Than Five Acres and the Authorization Letter to Disturb Greater Than Five Acres in accordance with Part I.E.6. (when applicable); and

   d. Request to Continue Coverage and the Letter of Continued Coverage (LOCC) in accordance with Part I.F.2. and 4. (when applicable); and

   e. The updated LOA(s) in accordance with Part I.E.9. (when applicable).

5. The *owner or operator* must maintain the documents in Part I.E.3. and 4. in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection. The documents must be paper documents unless electronic documents are accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be. If electronic documents are kept on site, the *owner or operator* must maintain functional equipment on site available to an inspector during normal hours of operation such that an inspector may view the electronic documents in a format that can be read in a similar manner as a paper record and in a legally dependable format with no less evidentiary value than their paper equivalent.

6. The *owner or operator* must meet the following requirements prior to disturbing greater than five acres of soil at any one time:

   a. The *owner or operator* must submit a written Request to Disturb Greater Than Five Acres to:

i. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, if a *Traditional Land Use Control MS4 Operator* does not have review authority in accordance with Part I.D.2.b.ii.1.; or

ii. the *Traditional Land Use Control MS4 Operator*, if a *Traditional Land Use Control MS4 Operator* has review authority in accordance with Part I.D.2.b.ii.1.; or

iii. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, and each involved *Traditional Land Use Control MS4 Operator*, if the project spans multiple municipalities with more than one *Traditional Land Use Control MS4 Operator* involved with review authority in accordance with Part I.D.2.b.ii.1.

b. The written Request to Disturb Greater Than Five Acres must include:

i. The SPDES permit identification number (Permit ID); and

ii. Full technical justification demonstrating why alternative methods of construction that would result in five acres of soil disturbance or less at any one time are not feasible; and

iii. The phasing plan for the project and sequencing plans for all *phases* from the *SWPPP* in accordance with Part III.B.1.d.; and

iv. Plans with locations and details of erosion and sediment control practices such that the heightened concern for erosion when disturbing greater than five acres at one time has been addressed; and

v. Acknowledgment that "the *owner or operator* will comply with the requirements in Part IV.C.2.b."; and

vi. Acknowledgment that "the *owner or operator* will comply with the requirements in Part II.B.1.b."

c. The *owner or operator* must be in receipt of an Authorization Letter to Disturb Greater Than Five Acres, which will include when the

authorization begins and ends and indicate a maximum area (acres) of soil disturbance allowed at any one time, from:

i. NYSDEC, if Part I.E.6.a.i. or iii. apply; or

ii. the *Traditional Land Use Control MS4 Operator*, if Part I.E.6.a.ii. applies.

7. Upon a finding of significant non-compliance with the practices described in the *SWPPP* or violation of this permit, NYSDEC may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order must be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

8. If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE).[3] *Construction activity* shall not resume until written permission to do so has been received from the RWE.

9. To be authorized to implement modifications to the information previously submitted in the eNOI, the *owner or operator* must:

   a. notify NYSDEC via email at Stormwater_info@dec.ny.gov requesting access to update the eNOI; and

   b. update the eNOI to reflect the modifications and resubmit the eNOI in accordance with Part I.D.; and

   c. receive an updated LOA.

10. The eNOI, *SWPPP*, LOA, updated LOAs (when applicable), and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

[3] The Regional Water Manager where a DEC Region does not have a RWE.

F. Permit Coverage for *Discharges* Authorized Under GP-0-20-001

When applicable:

1. Upon the effective date of this permit, an *owner or operator* of *a construction activity*, with coverage under GP-0-20-001, will have interim coverage under GP-0-25-001 for 45 calendar days starting on the effective date of GP-0-25-001 so long as the *owner or operator* maintains compliance with all applicable requirements of this permit.

2. Within 30 calendar days of the effective date of this permit, the *owner or operator*, with coverage under GP-0-20-001, must submit a complete Request to Continue Coverage electronically using a NYSDEC approved form,[4] which contains the information identified in Part I.F.3. below, if:

   a. the *owner or operator* continues to implement the SMP component in conformance with the technical standards in place at the time of initial project authorization; and

   b. the *owner or operator* will comply with all non-design requirements of GP-0-25-001.

3. The Request to Continue Coverage form contains questions to: ensure eligibility requirements in Part I.A. have been met; verify *owner or operator* contact information; verify the permit identification number; verify the original eNOI submission ID, if applicable; verify Part I.F.2.a. and b.; verify the version of the Design Manual that the technical/design components conform to; and receive an updated Owner/Operator Certification Form, Appendix I.

4. The *owner or operator* has obtained continued coverage under GP-0-25-001 as of the date indicated in the LOCC, which is sent by NYSDEC after a complete Request to Continue Coverage form is submitted.

5. If the owner or operator does not submit the Request to Continue Coverage form in accordance with Part I.F.2. and 3., coverage under this permit is automatically terminated after interim coverage expires.

[4] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

G. Change of *Owner or Operator*

When applicable:

1. When property ownership changes, or when there is a change in operational control over the construction plans and specifications, the following process applies:

    a. The new *owner or operator* must meet the applicable prerequisites for submitting an eNOI in accordance with Part I.D.2.; and

    b. The new *owner or operator* must submit an eNOI in accordance with Part I.D.3.; and

    c. Permit coverage for the new *owner or operator* will be effective upon receipt of the LOA in accordance with Part I.D.3.b.; and

    d. The new *owner or operator*, upon receipt of their LOA, must provide their Permit ID to the original *owner or operator*; and

    e. If the original *owner or operator* will no longer be the *owner or operator* of the *construction activity* identified in the original *owner's or operator's* eNOI, the original *owner or operator*, upon receipt of the new *owner's or operator's* Permit ID in accordance with Part I.G.1.d., must submit to NYSDEC a completed eNOT in accordance with Part V. that includes the name and Permit ID of the new *owner or operator*; or

    f. If the original *owner or operator* maintains ownership of a portion of the *construction activity*, the original *owner or operator* must maintain their coverage under the permit by modifying their eNOI; modifications to the eNOI must include:

        i. the revised area of disturbance and/or *impervious area(s)*; and

        ii. the revised SMP information, if applicable; and

        iii. a narrative description of what has changed; and

        iv. the new *owner's or operator's* Permit ID for the portion of the project removed from the eNOI.

    Owners or operators must follow Part I.E.9. to modify the eNOI.

Part II. Water Quality-Based Effluent Limitations

A. Maintaining Water Quality

NYSDEC expects that compliance with the requirements of this permit will control *discharge*s necessary to meet applicable *water quality standard*s. It shall be a violation of the *ECL* for any *discharge* to either cause or contribute to a violation of the following *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York:

1. There must be no increase in turbidity that will cause a substantial visible contrast to natural conditions; and

2. There must be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There must be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the *stormwater discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standard,* the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this permit and document in accordance with Part IV.C.4. of this permit. To address the *water quality standard* violation the *owner or operator* must include and implement appropriate controls in the *SWPPP* to correct the problem or obtain an individual SPDES permit.

If, despite compliance with the requirements of this permit, it is demonstrated that the *stormwater discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if NYSDEC determines that a modification of this permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit, and the *owner or operator* must obtain an individual SPDES permit prior to further *discharges* from the *construction site*.

B. Effluent Limitations Applicable to *Discharges* from *Construction Activities*

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part II.B.1.a., b., c., d., and e. These limitations represent the

degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement, and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part II.B.1.a., b., c., d., and e. and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control (BB), dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in *SWPPP* the reason(s) for the deviation, or alternative design, and provide information in the *SWPPP* demonstrating that the deviation or alternative design is *equivalent* to the technical standard.

    a. **Erosion and Sediment Controls.** At a minimum, erosion and sediment controls must be selected, designed, installed, implemented, and maintained to:

        i. *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s; and

        ii. Control *stormwater discharge*s, including both peak flow rates and total *stormwater* volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points; and

        iii. *Minimize* the amount of soil exposed during *construction activity*; and

        iv. *Minimize* the disturbance of *steep slope*; and

        v. *Minimize* sediment *discharge*s from the site; and

        vi. Provide and maintain *natural buffers* around surface waters, direct *stormwater* to vegetated areas and maximize *stormwater* infiltration to reduce *pollutant discharge*s, unless *infeasible*; and

        vii. *Minimize* soil compaction. *Minimizing* soil compaction is not required

where the intended function of a specific area of the site dictates that it be compacted; and

viii. Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

ix. *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of *pollutants* that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has ceased, whether permanently or *temporarily ceased*, the application of soil stabilization measures must be initiated by the end of the next business day and completed within 14 calendar days from the date the current soil disturbance activity ceased. For *construction sites* that *directly discharge* to one of the 303(d) segments listed in Appendix D, or are located in one of the watersheds listed in Appendix C, or are authorized to disturb greater than five acres in accordance with Part I.E.5.a.viii., the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven calendar days from the date the soil disturbance activity ceased.

c. **Dewatering**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Select, design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be selected, designed, installed, implemented, and maintained to:

i. *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. Soaps, detergents and solvents cannot be used; and

ii. *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation

and to *stormwater*. *Minimization* of exposure is not required in cases where the exposure to precipitation and to *stormwater* will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of *stormwater* contamination (such as final products and materials intended for outdoor use); and

iii. Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Surface Outlets.** When discharging from basins and impoundments, the surface outlets must be designed, constructed, and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-Construction Stormwater Management Practice (SMP) Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction SMPs, in accordance with Part III.C., must select, design, install, implement, and maintain the SMPs to meet the *performance criteria* in the New York State Stormwater Management Design Manual, dated July 31, 2024 (DM), using sound engineering judgment. Where SMPs are not designed in conformance with the *performance criteria* in the DM, the *owner or operator* must include in the *SWPPP* the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity*, that requires SMPs in accordance with Part III.C., must design the practices to meet the applicable *sizing criteria* in Part II.C.2.a., b., c., or d.

a. Sizing Criteria for *New Development*

i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):

1. Reduce the total WQv by application of RR techniques and standard SMPs with RRv capacity. The total WQv must be calculated in accordance with the criteria in Section 4.2 of the DM; or

2. Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the requirements in Part II.C.2.a.i.1. due to *site limitations* must direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv must be documented in the *SWPPP*. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the *SWPPP* must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

   In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.4 of the DM. The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. The CPv requirement does not apply when:

   1. Reduction of the entire CPv is achieved by application of runoff reduction techniques or infiltration systems; or

   2. The 1-year post-development peak *discharge* is less than or equal to 2.0 cfs without detention or velocity controls; or

   3. The site *directly discharges* into a fifth order or larger water body (stream, river, or lake), or tidal waters, where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.

iii. *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams, or

2. A downstream analysis reveals that *overbank* control is not required.

iv. Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams, or

2. A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watersheds

i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):

1. Reduce the WQv by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24-hour design storm over the post-developed watershed and must be calculated in accordance with the criteria in Section 4.3 of the DM; or

2. Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part II.C.2.b.i.1. due to *site limitations* must direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv must be documented in the *SWPPP*. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the *SWPPP* must include

documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.5 of the DM. The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. The CPv requirement does not apply when:

1. Reduction of the entire CPv is achieved by application of runoff reduction techniques or infiltration systems; or

2. The 1-year post-development peak *discharge* is less than or equal to 2.0 cfs; or

3. The site *directly discharges* to tidal waters, or a fifth order or larger water body (stream, river, or lake) where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.

iii. *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams; or

2. A downstream analysis reveals that *overbank* control is not required.

iv. Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams; or

2. A downstream analysis reveals that *overbank* control is not required.

c. *Sizing Criteria* for *Redevelopment Activity*

i. Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* must be addressed by one of the following options, as outlined in Section 9.2.1. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C) must calculate the WQv in accordance with Section 4.3 of the DM. All other *redevelopment activities* must calculate the WQv in accordance with Section 4.2 of the DM.

1. Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the DM must be applied to all newly created pervious areas; or

2. Capture and treat 100% of the required WQv, for a minimum of 25% of the disturbed redevelopment *impervious area*, by implementation of standard SMPs or reduced by application of runoff reduction techniques; or

3. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a volume-based alternative SMP, as defined in Section 9.4 of the DM; or

4. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a flow-through alternative SMP sized to treat the peak rate of runoff from the WQv design storm; or

5. Application of a combination of 1 through 4 above that provide a weighted average of at least two of the above methods. Application of this method must be in accordance with the criteria in Section 9.2.1(A)(V) of the DM; or

6. If there is an existing SMP located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 through 5 above.

ii. Channel Protection Volume (CPv) is not required if there is 0% change to hydrology that increases the *discharge* rate and volume from the project site.

iii. *Overbank* Flood Control (Qp) is not required if there is 0% change to hydrology that increases the *discharge* rate from the project site.

iv. Extreme Flood Control (Qf) is not required if there is 0% change to hydrology that increases the *discharge* rate from the project site.

d. *Sizing Criteria* for Combination of *Redevelopment Activity* and *New Development*

Construction projects, that include both *new development* and *redevelopment activity*, must use SMPs that meet the *sizing criteria* calculated as an aggregate of the *sizing criteria* in Part II.C.2.a. or b. for the *new development* portion of the project and Part II.C.2.c. for the *redevelopment activity* portion of the project.

Part III. Stormwater Pollution Prevention Plan (SWPPP)

A. General *SWPPP* Requirements

1. A *SWPPP* must be prepared and implemented by the *owner or operator* of all *construction activity* covered by this permit. All authorized *discharges* must be identified in the *SWPPP*. The *SWPPP* must document the selection, design, installation, implementation and maintenance of the control measures and

practices that will be used to meet the effluent limitations in Part II.B. and, where applicable, the SMP requirements in Part II.C.

2. The *SWPPP* must demonstrate consideration in narrative format of the future physical risks due to climate change pursuant to the Community Risk and Resiliency Act (CRRA), 6 NYCRR Part 490, and associated guidance.

    a. The owner or operator must consider:

        i. the following physical risks due to climate change:

            (i) increasing temperature; and

            (ii) increasing precipitation; and

            (iii) increasing variability in precipitation, including chance of drought; and

            (iv) increasing frequency and severity of flooding; and

            (v) rising sea level; and

            (vi) increasing storm surge; and

            (vii) shifting ecology.

        ii. for each of the following:

            (i) overall site planning; and

            (ii) location, elevation, and sizing of:

                a. control measures and practices; and

                b. conveyance system(s); and

                c. detention system(s).

3. The *SWPPP* must describe the erosion and sediment control practices and where required, SMPs that will be used and/or constructed to reduce the *pollutants* in *stormwater discharges* and to assure compliance with the

requirements of this permit. In addition, the *SWPPP* must identify potential sources of pollution which may reasonably be expected to affect the quality of *stormwater discharges*.

4. All *SWPPPs*, that require the SMP component in accordance with Part III.B.2., must be prepared by a *qualified professional*.

5. The *owner or operator* must keep the *SWPPP* current so that, at all times, it accurately documents the erosion and sediment control practices that are being used or will be used during construction, and all SMPs that will be constructed on the site. At a minimum, the *owner or operator* must modify the *SWPPP*, including construction drawings:

   a. whenever the current provisions prove to be ineffective in *minimizing pollutants* in *stormwater discharges* from the site; and

   b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*; and

   c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* NYSDEC, or other regulatory authority; and

   d. to document the final construction conditions in an as-built drawing.

6. NYSDEC may notify the *owner or operator* at any time that the *SWPPP* does not meet one or more of the minimum requirements of this permit. The notification must be in writing and identify the provisions of the *SWPPP* that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by NYSDEC, the *owner or operator* must make the required changes to the *SWPPP* and submit written notification to NYSDEC that the changes have been made. If the *owner or operator* does not respond to NYSDEC's comments in the specified time frame, NYSDEC may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4.

7. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting, and maintaining the erosion and sediment control practices included in the *SWPPP* and the

contractor(s) and subcontractor(s) that will be responsible for constructing the SMPs included in the *SWPPP*. The *owner or operator* must have each of the contractors and subcontractors identify at least one person from their company to be *trained contractor* that will be responsible for implementation of the *SWPPP*. The *owner or operator* must ensure that at least one *trained contractor* is on site daily when soil disturbance activities are being performed.

The *owner or operator* must have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before the *commencement of construction activities*:

> "I hereby certify under penalty of law that I understand and agree to comply with the requirements of the *SWPPP* and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the requirements of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) Construction General Permit (CGP) for Stormwater Discharges from Construction Activities and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the *SWPPP* that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for *SWPPP* implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* must attach the certification statement(s) to the copy of the *SWPPP* that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the *SWPPP* after the *commencement of construction activities*, they must also sign the certification statement and provide the information listed above prior to performing *construction activities*.

B. Required *SWPPP* Contents

1. Erosion and sediment control component - The *owner or operator* must prepare a *SWPPP* that includes erosion and sediment control practices.

    a. Erosion and sediment control practices must be designed:

        i. in conformance with the BB; or

        ii. *equivalent* to the BB if deviating from Part III.B.1.a.i.

    b. If the erosion and sediment control practices are designed in conformance with Part III.B.1.a.ii., the *SWPPP* must include a demonstration of *equivalence* to the BB.

    c. At a minimum, the erosion and sediment control component of the *SWPPP* must include the following:

        i. Background information about the scope of the project, including the location, type and size of project; and

        ii. A site map/construction drawing(s) with north arrows for the project, including a general location map. At a minimum, the site map must show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the *stormwater discharge*(s) and receiving surface water(s); and

        iii. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG); and

        iv. A phasing plan for the project and sequencing plans for all *phases*, both of which must address clearing and grubbing, excavation and grading, utility and infrastructure installation, *final stabilization*,

and any other *construction activity* at the site that will result in soil disturbance.

1. The phasing plan must include:

    a. a map delineating and labeling the limits of soil disturbance for all *phases* of a project; and

    b. a table identifying the order and intended schedule of when each *phase* will begin and end its sequencing plan. The table must identify the total disturbed area for each *phase* at any one time and the total disturbed area for the overall project at any one time all on one timeline showing all overlapping quantities of disturbed area at any one time; and

2. A sequencing plan for a specific *phase* must include:

    a. a table indicating the order and intended schedule of *construction activities* within a *phase*, and corresponding construction drawings with a description of the work to be performed; and

    b. all permanent and *temporary stabilization* measures; and

v. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented; and

vi. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice; and

vii. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any

temporary sediment basins and structural practices that will be used to divert flows from exposed soils; and

viii. A maintenance inspection schedule for the contractor(s) and subcontractor(s) identified in Part III.A.7. to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule must be in accordance with the requirements in the BB technical standard; and

ix. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the *stormwater discharges*; and

x. A description and location of any *stormwater discharges* associated with industrial activity other than construction at the site, including, but not limited to, *stormwater discharges* from asphalt plants and concrete plants located on the *construction site*; and

xi. Identification of any elements of the design that are not in conformance with the design criteria in the BB technical standard. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. SMP component – The *owner or operator* of *construction activity* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs.

   a. SMPs must be designed in conformance with the applicable *sizing criteria* in Part II.C.2.a., c., or d.; and

   b. SMPs must be designed in conformance with the *performance criteria*:

      i. in the DM; or

      ii. *equivalent* to the DM if deviating from Part III.B.2.b.i.; or

      iii. in the New York State Stormwater Management Design Manual, dated January 2015 (2015 Design Manual), or *equivalent* to it, if the following criteria are met:

1. The eNOI is submitted in accordance with Part I.D. before January 29, 2027 for *construction activities* that are either:

    a. subject to governmental review and approval:

        i. where the *owner or operator* made any application to that governmental entity prior to the effective date of this permit; and

        ii. such application included a *SWPPP* developed using the 2015 Design Manual or *equivalent* to it; or

    b. not subject to governmental review and approval:

        i. where a fiscal allocation for the *construction activities* has been developed and approved by a governmental entity; and

        ii. the *SWPPP* was developed using the 2015 Design Manual or *equivalent* to it; and

c. If SMPs are designed in conformance with Part III.B.2.b.ii., the *SWPPP* must include the reason(s) for the deviation or alternative design and a demonstration of *equivalence* to the DM; and

d. If SMPs are designed in conformance with Part III.B.2.b.iii., the *SWPPP* must include supporting information or documentation demonstrating that Part III.B.2.b.iii.1.a. or b. apply; and

e. The SMP component of the *SWPPP* must include the following:

    i. Identification of all SMPs to be constructed as part of the project, including which option the SMP designs conform to, either Part III.B.2.b.i., ii., or iii. Include the dimensions, material specifications and installation details for each SMP; and

    ii. A site map/construction drawing(s) showing the specific location and size of each SMP; and

iii. A Stormwater Modeling and Analysis Report that includes:

(i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points; and

(ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and SMPs; and

(iii) Results of *stormwater* modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre- and post-development runoff rates and volumes for the different storm events; and

(iv) Summary table, with supporting calculations, which demonstrates that each SMP has been designed in conformance with the *sizing criteria* included in the DM; and

(v) Identification of any *sizing criteria* that is not required based on the requirements included in Part II.C.; and

(vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the DM. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the DM.

iv. Soil testing results and locations (test pits, borings); and

v. Infiltration test results, when required in accordance with Part III.B.2.a.; and

vi. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each SMP. The plan must identify the entity

that will be responsible for the long-term operation and maintenance of each practice; and

3. Enhanced Phosphorus Removal Standards - The *owner or operator* of *construction activity* identified in Table 2 of Appendix B that is located in a watershed identified in Appendix C must prepare a *SWPPP* that includes SMPs designed in conformance with the applicable *sizing criteria* in Part II.C.2.b., c., or d. and the *performance criteria* Enhanced Phosphorus Removal Standards included in the DM. At a minimum, the SMP component of the *SWPPP* must meet the requirements of Part III.B.2.

C. Required *SWPPP* Components by Project Type

Owners or operators of *construction activities*, identified in Table 1 of Appendix B, are required to prepare a *SWPPP* that only includes erosion and sediment control practices designed in accordance with Part III.B.1. *Owners or operators* of the *construction activities*, identified in Table 2 of Appendix B, must prepare a *SWPPP* that also includes SMPs designed in accordance with Part III.B.2 or 3.

For the entire area of disturbance, including the entire *common plan of development or sale* if applicable, the owner or operator must evaluate every bullet from Appendix B Table 1 and Table 2 separately. If bullets from both Table 1 and Table 2 apply, the *SWPPP* must include erosion and sediment control practices for all *construction activities* but SMPs for only those portions of the *construction activities* that fall under Table 2 bullet(s).

Part IV. Inspection and Maintenance Requirements

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures), and all SMPs identified in the *SWPPP*, are inspected and maintained in accordance with Part IV.B. and C.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity*, identified in Tables 1 and 2 of Appendix B, must have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being

implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor must:

a. if the corrective action does not require engineering design:

    i. begin implementing corrective actions within one business day; and

    ii. complete the corrective actions within five business days; or

b. if the corrective action requires engineering design:

    i. begin the engineering design process within five business days; and

    ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.

2. For *construction sites* where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections in accordance with Part IV.B.1. The *trained contractor* must begin conducting the maintenance inspections in accordance with Part IV.B.1. as soon as soil disturbance activities resume.

3. For *construction sites* where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections in accordance with Part IV.B.1. if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational.

C. *Qualified Inspector* Inspection Requirements

1. With the exception of the following *construction activities* identified in Tables 1 and 2 of Appendix B, a *qualified inspector* must conduct site inspections for all other *construction activities* identified in Tables 1 and 2 of Appendix B:

    a. the construction of a single-family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than or equal to five (5) acres and is

not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D; and

b. the construction of a single-family home that involves soil disturbances of one (1) or more acres but less than or equal to five (5) acres and is not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D; and

c. construction on *agricultural property* that involves soil disturbances of one (1) or more acres but less than five (5) acres; and

d. *construction activities* located in the New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances of 5,000 square feet or more, but less than one acre.

2. The *qualified inspector* must conduct site inspections in accordance with the following timetable:

a. For *construction sites* where soil disturbance activities are on-going, the *qualified inspector* must conduct a site inspection at least once every seven (7) calendar days; or

b. For *construction sites* where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part I.E.6. to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days; or

c. For *construction sites* where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* must conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas under the jurisdiction of a *Traditional Land Use Control MS4 Operator,* the *Traditional Land Use Control MS4 Operator* (provided the *Traditional Land Use Control MS4 Operator* is not the *owner or operator* of the *construction activity*) by hard copy or email prior to reducing the inspections to this frequency and again by hard copy or email prior to re-commencing construction; or

d. For *construction sites* where soil disturbance activities have been shut down with partial project completion, the requirement to have the *qualified inspector* conduct inspections ceases if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1., the *Traditional Land Use Control MS4 Operator(s)* (provided the *Traditional Land Use Control MS4 Operator(s)* are not the *owners or operators* of the *construction activity*) in writing prior to the shutdown and again in writing prior to resuming *construction activity*. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* must terminate coverage by meeting the requirements of Part V; or

e. For *construction sites* involving soil disturbance of one (1) or more acres that *directly discharge* to one of the 303(d) segments listed in Appendix D or is located in one of the watersheds listed in Appendix C, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* must inspect:

   a. all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness; and

   b. all SMPs under construction to ensure that they are constructed in conformance with the *SWPPP*; and

   c. all areas of disturbance that have not achieved *final stabilization*; and

   d. all points of *discharge* to *surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site*; and

   e. all points of *discharge* from the *construction site*.

4. The *qualified inspector* must prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report must include and/or address all of the following, for all *construction activities* except those listed in Part IV.C.1.:

    a. Permit identification number; and

    b. Date and time of inspection; and

    c. Name and title of person(s) performing inspection; and

    d. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection, including the temperature at the time of the inspection; and

    e. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This must include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow; and

    f. A description of the condition of all *surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This must include identification of any *discharges* of sediment to the *surface waters of the State*; and

    g. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance; and

    h. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced; and

    i. Description and sketch (map) of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection; and

    j. Estimates, in square feet or acres, of the following areas:

i. Total area with active soil disturbance (not requiring either *temporary stabilization* or *final stabilization*); and

ii. Total area with inactive soil disturbance (requiring either *temporary stabilization* or *final stabilization*); and

iii. Total area that has achieved *temporary stabilization*; and

iv. Total area that has achieved *final stabilization*; and

k. Current stage of construction of all SMPs and identification of all *construction activity* on site that is not in conformance with the *SWPPP* and technical standards; and

l. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the SMP(s); and

m. Identification and status of all corrective actions that were required by previous inspection; and

n. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* must attach color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* must also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* must attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* must notify the *owner or operator*, and appropriate contractor or subcontractor identified in Part III.A.7., of any corrective actions that need to be taken. The contractor or subcontractor must:

a. if the corrective action does not require engineering design:

i. begin implementing corrective actions within one business day; and

ii. complete the corrective actions within five business days; or

b. if the corrective action requires engineering design:

i. begin the engineering design process within five business days; and

ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.

6. All inspection reports must be signed by the *qualified inspector.* In accordance with Part I.E.3., the inspection reports must be maintained on site with the *SWPPP*.

Part V. How to Terminate CGP Coverage

A. Electronic Notice of Termination (eNOT) Submittal

The eNOT contains questions to ensure requirements in Part V.A. have been met.

1. An *owner or operator* must terminate coverage when one or more of the following requirements have been met:

a. Total project completion:

i. all *construction activity* identified in the *SWPPP* has been completed; and

ii. all areas of disturbance have achieved *final stabilization*; and

iii. all temporary, structural erosion and sediment control measures have been removed; and

iv. all SMPs have been constructed in conformance with the *SWPPP* and are operational; and

v. an as-built drawing has been prepared; or

b. Planned shutdown with partial project completion:

   i. all soil disturbance activities have ceased; and

   ii. all areas disturbed as of the project shutdown date have achieved *final stabilization*; and

   iii. all temporary, structural erosion and sediment control measures have been removed; and

   iv. all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational; and

   v. an as-built drawing has been prepared; or

c. In accordance with Part I.G. Change of Owner or Operator; or

d. The *owner or operator* has obtained coverage under an alternative general SPDES permit or an individual SPDES permit.

2. For *construction activities* that require *qualified inspector* inspections in accordance with Part IV.C.1. and have met Part V.A.1.a. or b., the *owner or operator* must have the *qualified inspector* perform a final site inspection prior to submitting the eNOT. The *qualified inspector* must, by signing the “Final Stabilization” and “Post-Construction Stormwater Management Practice(s)” certification statements on the eNOT, certify that all the requirements in Part V.A.1.a. or b. have been achieved.

3. For *construction activities* that are subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1. and meet Part V.A.1.a. or b., the *owner or operator* must have the *Traditional Land Use Control MS4 Operator(s)* sign the “MS4 Acceptance” statement on the eNOT in accordance with the requirements in Part VII.J. A *Traditional Land Use Control MS4 Operator* official, by signing this statement, determined that it is acceptable for the *owner or operator* to submit the eNOT in accordance with the requirements of this Part. A *Traditional Land Use Control MS4 Operator* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*’s final site inspection certification(s) when required in Part V.A.2.

4. For *construction activities* that require SMPs and meet Part V.A.1.a. or b., the *owner or operator* must, prior to submitting the eNOT, ensure one of the following:

    a. for SMP(s) that were constructed by a private entity, but will be owned, operated, and maintained by a public entity, the SMP(s) and any right-of-way(s) needed to operate and maintain such practice(s) have been deeded to the municipality in which the practice(s) is located; or

    b. for SMP(s) that are privately owned, but will be operated and maintained by a public entity, an executed operation and maintenance agreement is in place with the municipality that will operate and maintain the SMP(s); or

    c. for SMP(s) that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record; or

    d. for SMP(s) that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility, the *owner or operator* has policies and procedures in place that ensure operation and maintenance of the practices in accordance with the operation and maintenance plan.

5. An *owner or operator* that has met the requirements of Part V.A.1., 2., 3., and 4. must request termination of coverage under this permit by submitting a complete Notice of Termination form electronically using a NYSDEC approved form.[5]

    a. The owner's or operator's coverage is terminated as of the termination date indicated in the Letter of Termination (LOT), which is sent by NYSDEC after a complete eNOT is submitted.

[5] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

Part VI. Record Retention and Reporting

A. Record Retention

The *owner or operator* must retain a copy of the documents listed in Part I.E.3. and a copy of the LOT for a period of at least five years from the date that NYSDEC accepts a complete NOT submitted in accordance with Part V.

B. Reporting

Except for the eNOI, the signature forms associated with the eNOI, and the eNOT, all other written correspondence requested by NYSDEC, including individual permit applications, must be sent to the address of the appropriate DOW (SPDES) Program contact at the Regional Office listed in Appendix E.

Part VII. Standard Permit Requirements

For the purposes of this permit, examples of contractors and subcontractors include: third-party maintenance and construction contractors.

A. Duty to Comply

The *owner or operator*, and all contractors or subcontractors, must comply with all requirements of this permit. Any non-compliance with the requirements of this permit constitutes a violation of the New York State Environmental Conservation Law (ECL), and its implementing regulations, and is grounds for enforcement action. Filing of a request for termination of coverage under this permit, or a notification of planned changes or anticipated non-compliance, does not limit, diminish or stay compliance with any requirements of this permit.

B. Need to Halt or Reduce Activity Not a Defense

The necessity to halt or reduce the *construction activity* regulated by this permit, in order to maintain compliance with the requirements of this permit, must not be a defense in an enforcement action.

C. Penalties

There are substantial criminal, civil, and administrative penalties associated with violating the requirements of this permit. Fines of up to $37,500 per day for each

violation and imprisonment for up to 15 years may be assessed depending upon the nature and degree of the offense.

D. False Statements

Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, or other document filed or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance must, upon conviction, be punished in accordance with ECL §71-1933 and or New York State Penal Law Articles 175 and 210.

E. Re-Opener Clause

Upon issuance of this permit, a determination has been made on the basis of a submitted Notice of Intent, plans, or other available information, that compliance with the specified permit requirements will reasonably protect classified water use and assure compliance with applicable *water quality standards*. Satisfaction of the requirements of this permit notwithstanding, if operation pursuant to this permit causes or contributes to a condition in contravention of State *water quality standards* or guidance values, or if NYSDEC determines that a modification is necessary to prevent impairment of the best use of the waters or to assure maintenance of *water quality standards* or compliance with other provisions of ECL Article 17 or the Clean Water Act (CWA), or any regulations adopted pursuant thereto, NYSDEC may require such modification and the Commissioner may require abatement action to be taken by the *owner or operator* and may also prohibit such operation until the modification has been implemented.

F. Duty to Mitigate

The *owner or operator*, and its contractors and subcontractors, must take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

G. Requiring Another General Permit or Individual SPDES Permit

NYSDEC may require any *owner or operator* authorized to *discharge* in accordance with this permit to apply for and obtain an individual SPDES permit or apply for authorization to *discharge* in accordance with another general SPDES permit.

1. Cases where an individual SPDES permit or authorization to discharge in accordance with another general SPDES permit may be required include, but is not limited to the following:

a. the *owner or operator* is not in compliance with the conditions of this permit or does not meet the requirements for coverage under this permit; and

b. a change has occurred in the availability of demonstrated technology or practices for the control or abatement of *pollutants* applicable to the *point source*; and

c. new effluent limitation guidelines or new source performance standards are promulgated that are applicable to *point sources* authorized to *discharge* in accordance with this permit; and

d. existing effluent limitation guidelines or new source performance standards that are applicable to *point sources* authorized to *discharge* in accordance with this permit are modified; and

e. a water quality management plan containing requirements applicable to such *point sources* is approved by NYSDEC; and

f. circumstances have changed since the time of the request to be covered so that the *owner or operator* is no longer appropriately controlled under this permit, or either a temporary or permanent reduction or elimination of the authorized *discharge* is necessary; and

g. the *discharge* is in violation of section 17-0501 of the ECL; and

h. the *discharge(s)* is a significant contributor of *pollutants*. In making this determination, NYSDEC may consider the following factors:

   i. the location of the *discharge(s)* with respect to *surface waters of the State*; and

   ii. the size of the *discharge(s)*; and

   iii. the quantity and nature of the *pollutants discharged* to *surface waters of the State*; and

   iv. other relevant factors including compliance with other provisions of ECL Article 17, or the CWA.

2. When NYSDEC requires any *owner or operator* authorized by this permit to apply for an individual SPDES permit as provided for in this subdivision, it must notify the *owner or operator* in writing that a permit application is required. This notice must include a brief statement of the reasons for this decision, an application

form, a statement setting a time for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from the *owner's or operator's* receipt of the notification letter, whereby the authorization to *discharge* under this permit must be terminated. NYSDEC may grant additional time upon demonstration, to the satisfaction of the RWE,[6] that additional time to apply for an alternative authorization is necessary or where NYSDEC has not provided a permit determination in accordance with 6 NYCRR Part 621.

3. When an individual SPDES permit is issued to an *owner or operator* authorized to *discharge* under this permit for the same *discharge(s)*, this permit authorization for *construction activities* authorized under the individual SPDES permit is automatically terminated on the effective date of the individual SPDES permit unless termination is earlier in accordance with 6 NYCRR Part 750.

H. Duty to Provide Information

The *owner or operator* must furnish to NYSDEC, within five business days, unless otherwise set forth by NYSDEC, any information that NYSDEC may request to determine whether cause exists to determine compliance with this permit or to determine whether cause exists for requiring an individual SPDES permit in accordance with 6 NYCRR 750-1.21(e) (see Part VII.G. Requiring Another General Permit or Individual Permit).

The *owner or operator* must make available to NYSDEC, for inspection and copying, or furnish to NYSDEC within 25 business days of receipt of a NYSDEC request for such information, any information retained in accordance with this permit.

Except for Part I.D.4. and 5. and Part I.G., the following applies: where the *owner or operator* becomes aware that it failed to submit any relevant facts on the Notice of Intent, or submitted incorrect information in a Notice of Intent or in any report to NYSDEC, the *owner or operator* must submit such facts or corrected information to NYSDEC within five business days.

I. Extension

In the event a new permit is not issued and effective prior to the expiration of this permit, and this permit is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, then the *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the requirements of this permit until a new permit is issued and effective.

[6] The Regional Water Manager where a DEC Region does not have a RWE.

J. Signatories and Certification

The Notice of Intent, Notice of Termination, and reports required by this permit must be signed as provided in 40 CFR §122.22.

1. All Notices of Intent and Notices of Termination must be signed as follows:

    a. For a corporation. By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

        (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or

        (ii) the manager of one or more manufacturing, production or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for Notice of Intent or Notice of Termination requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

        Note: NYSDEC does not require specific assignments or delegations of authority to responsible corporate officers identified in 40 CFR §122.22(a)(1)(i). NYSDEC will presume that these responsible corporate officers have the requisite authority to sign the Notice of Intent or Notice of Termination unless the corporation has notified NYSDEC to the contrary. Corporate procedures governing authority to sign a Notice of Intent or Notice of Termination may provide for assignment or delegation to applicable corporate positions under 40 CFR §122.22(a)(1)(ii) rather than to specific individuals.

    b. For a partnership or sole proprietorship. By a general partner or the proprietor, respectively.

c. For a municipality, State, Federal, or other public agency. By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

    1. the chief executive officer of the agency; or

    2. a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. All reports required by this permit, and other information requested by NYSDEC, must be signed by a person described in Part VII.J.1., or by a duly authorized representative of that person. A person is a duly authorized representative only if:

    a. The authorization is made in writing by a person described in Part VII.J.1. or using the Duly Authorized Form, found on the DEC website; and

    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

    c. The written authorization is submitted to NYSDEC.

3. Changes to authorization. If an authorization under Part VII.J.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the *construction activity*, a new authorization satisfying the requirements of Part VII.J.2. must be submitted to NYSDEC prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under Part VII.J.1. or 2. must make the following certification:

    I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who

manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

5. Electronic reporting. If documents described in Part VII.J.1. or 2. are submitted electronically by or on behalf of the *construction activity* with coverage under this permit, any person providing the electronic signature for such documents must meet all relevant requirements of this section, and must ensure that all of the relevant requirements of 40 CFR Part 3 (including, in all cases, subpart D to Part 3) (Cross-Media Electronic Reporting) and 40 CFR Part 127 (NPDES Electronic Reporting Requirements) are met for that submission.

K. Inspection and Entry

The *owner or operator* must allow NYSDEC, the USEPA Regional Administrator, the applicable county health department, or any authorized representatives of those entities, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the *discharge*, upon the presentation of credentials and other documents as may be required by law, to:

1. enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the requirements of this permit; and

2. have access to and copy at reasonable times, any records that must be kept under the requirements of this permit, including records required to be maintained for purposes of operation and maintenance; and

3. inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

4. sample or monitor at reasonable times, for the purposes of assuring general SPDES permit compliance or as otherwise authorized by the CWA or ECL, any substances or parameters at any location; and

5. enter upon the property of any contributor to the regulated facility or activity under authority of the *owner or operator*.

L. Confidentiality of Information

The following must not be held confidential: this permit, the fact sheet for this permit, the name and address of any *owner or operator*, effluent data, the Notice of Intent, and information regarding the need to obtain an individual permit or an alternative general SPDES permit. This includes information submitted on forms themselves and any attachments used to supply information required by the forms (except information submitted on usage of substances). Upon the request of the *owner or operator*, NYSDEC must make determinations of confidentiality in accordance with 6 NYCRR Part 616, except as set forth in the previous sentence. Any information accorded confidential status must be disclosed to the Regional Administrator upon his or her written request. Prior to disclosing such information to the Regional Administrator, NYSDEC will notify the Regional Administrator of the confidential status of such information.

M. Other Permits May Be Required

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

N. NYSDEC Orders or Civil Decrees/Judgments

The issuance of this permit by the NYSDEC, and the coverage under this permit by the *owner or operator*, does not supersede, revoke, or rescind any existing order on consent or civil Decree/Judgment, or modification to any such documents or to any order issued by the Commissioner, or any of the terms, conditions, or requirements contained in such order or modification therefore, unless expressly noted.

O. Property Rights

Coverage under this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations, nor does it obviate the necessity of obtaining the assent of any other jurisdiction as required by law for the *discharge* authorized.

P. Compliance with Interstate Standards

If the *construction activity* covered by this permit originates within the jurisdiction of an interstate water pollution control agency, then the *construction activity* must also comply with any applicable effluent standards or *water quality standards* promulgated by that interstate agency and as set forth in this permit for such *construction activities*.

Q. Oil and Hazardous Substance Liability

Coverage under this permit does not affect the imposition of responsibilities upon, or the institution of any legal action against, the *owner or operator* under section 311 of the CWA, which must be in conformance with regulations promulgated pursuant to section 311 governing the applicability of section 311 of the CWA to *discharges* from facilities with *NPDES* permits, nor must such issuance preclude the institution of any legal action or relieve the *owner or operator* from any responsibilities, liabilities, or penalties to which the *owner or operator* is or may be subject pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. section 9601 et seq. (CERCLA).

R. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, must not be affected thereby.

S. NYSDEC Approved Forms

The *owner or operator* must provide all relevant information that is requested by NYSDEC, and required by this permit, on all NYSDEC approved forms.

APPENDIX A – Abbreviations and Definitions

Abbreviations

APO – Agency Preservation Officer
BB – New York State Standards and Specifications for Erosion and Sediment Control (Blue Book), dated November 2016
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
CPv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DM – New York State Stormwater Management Design Manual (Design Manual), dated July 31, 2024
DOW – Division of Water
EAF – Environmental Assessment Form
ECL – chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law
EPA – U.S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
NYC – The City of New York
NYCDEP – The City of New York Department of Environmental Protection
NYSDEC – The New York State Department of Environmental Conservation
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RR – Runoff Reduction
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SMP – Post-Construction Stormwater Management Practice
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit. If a word is not italicized in the permit, use its common definition.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property – the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023).

Alter Hydrology from Pre- to Post-Development Conditions – the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer System – a sewer system which conveys sewage and *stormwater* through a single pipe system to a publicly owned treatment works.

Commence (Commencement of) Construction Activities – the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the *SWPPP*. See definition for "*Construction Activity(ies)*" also.

Common Plan of Development or Sale – a contiguous area where multiple separate and distinct *construction activities* are occurring, or may occur, under one plan. The "common plan" of development or sale is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQR) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating *construction activities* may occur on a specific plot. A *common plan of development or sale* is comprised of two or more *phases*.

Common plan of development or sale does not include separate and distinct *construction activities* that are occurring, or may occur, under one plan that are at least 1/4 mile apart provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Construction Activity(ies) – identified within 40 CFR 122.26(b)(14)(x), 122.26(b)(15)(i), and 122.26(b)(15)(ii), any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, mechanized logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal.

Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, which is excluded from the calculation of the soil disturbance for a project. Routine maintenance includes, but is not limited to:

- Re-grading of gravel roads or parking lots; and
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of the ditch; and
- Replacement of existing culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of a ditch; and
- Replacement of existing bridges that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity beneath the bridges; and
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch); and
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*; and
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material; and
- Long-term use of equipment storage areas at or near highway maintenance facilities; and
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*; and
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts; and
- Maintenance of ski trails including brush hog use and mowing; and
- Above ground snowmaking pipe replacement; and
- Replacement of existing utility poles; etc.

Construction Site – the land area where *construction activity(ies)* will occur. See also the definitions for "*Commence (Commencement of) Construction Activities"* and "*Common Plan of Development or Sale."*

Dewatering – the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Directly Discharge(s)(ing) (to a specific surface waterbody) – runoff flows from a *construction site* by overland flow and the first point of *discharge* is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system and the first point of *discharge* from the separate storm sewer system is the specific surface waterbody.

Discharge(s)(d) – any addition of any *pollutant* to waters of the State through an outlet or *point source*.

Embankment – an earthen or rock slope that supports a road/highway.

Equivalent (Equivalence) – the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization – all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other *equivalent* stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

Historic Property – any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) – all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and compacted gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – not technologically possible, or not economically practicable and achievable considering best industry practices.

Minimize(ing)(ation) – reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer System (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

1. owned or operated by a State, city, town, village, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, *stormwater*, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA, that *discharges* to *surface waters of the State*; and

2. designed or used for collecting or conveying *stormwater*; and

3. which is not a *combined sewer system*; and

4. which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Natural Buffer(s) – an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – any land disturbance that does not meet the definition of *Redevelopment Activity* included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

Nonpoint Source(s) – any source of water pollution or *pollutants* which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank – flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator – the person, persons, or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit requirements.

Performance Criteria – the six performance criteria for each group of SMPs in Chapters 5 and 6 of the technical standard, New York State Stormwater Management Design Manual (DM), dated July 31, 2024. These include feasibility, conveyance, pretreatment, treatment, landscaping, and maintenance. It does not include the *Sizing Criteria* (i.e. WQv, RRv, CPv, Qp and Qf) in Part I.C.2. of the permit.

Phase – a defined area in which *construction activities* are occurring or will occur separate from other defined area(s).

Point Source – any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be *discharged*.

Pollutant(s) – dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast *discharged* into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq.

Qualified Inspector – a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, *New York State Erosion and Sediment Control Certificate Program* holder or other NYSDEC endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any SMPs that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional – a person that is knowledgeable in the principles and practices of *stormwater* management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other NYSDEC endorsed individual(s). Individuals preparing *SWPPPs* that require the SMP component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the *SWPPP* that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – the disturbance and reconstruction of existing *impervious area*, including *impervious areas* that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Renewable Energy – electricity or thermal energy generated by renewable energy systems through use of the following technologies: solar thermal, photovoltaics, on land and offshore wind, hydroelectric, geothermal electric, geothermal ground source heat, tidal energy, wave energy, ocean thermal, and fuel cells which do not utilize a fossil fuel resource in the process of generating electricity.

Site Limitations – site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical *site limitations* include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of *site limitations* shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – the criteria included in Part I.C.2 of the permit that are used to size SMPs. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

Steep Slope – land area designated on the current United States Department of Agriculture (USDA) Soil Survey as Soil Slope Phase D, (provided the map unit name or description is inclusive of slopes greater than 25%), or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Stormwater – that portion of precipitation that, once having fallen to the ground, is in excess of the evaporative or infiltrative capacity of soils, or the retentive capacity of surface features, which flows or will flow off the land by surface runoff to waters of the State.

Streambank – the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – a project specific report, including construction drawings, that among other things: describes the *construction activity(ies)*, identifies the potential sources of pollution at the *construction site*; describes and shows the *stormwater* controls that will be used to control the *pollutants* (i.e. erosion and sediment controls; for many projects, includes SMPs); and identifies procedures the *owner or operator* will implement to comply with the requirements of the permit. See Part III of the permit for a complete description of the information that must be included in the *SWPPP*.

Surface Waters of the State – shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization – exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Load (TMDL) – the sum of the allowable loads of a single *pollutant* from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a *pollutant* that a waterbody can receive and still meet *water quality standards*, and an allocation of that amount to the *pollutant's* sources. A TMDL stipulates Waste Load Allocations (WLA) for *point source discharges*, Load Allocations (LA) for *nonpoint source*s, and a margin of safety (MOS).

Traditional Land Use Control MS4 Operator – a city, town, or village with land use control authority that is authorized to *discharge* under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Trained Contractor – an employee from the contracting (construction) company, identified in Part III.A.7., that has received four (4) hours of NYSDEC endorsed training

in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.7., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, *New York State Erosion and Sediment Control Certificate Program* holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity).

The *trained contractor* is responsible for the day-to-day implementation of the *SWPPP*.

Tree Clearing – *construction activities* limited to felling and removal of trees.

Tree clearing does not include hand felling and leaving the trees in place with no support from mechanized equipment, which is not considered *construction activity* requiring coverage under this permit.

Water Quality Standard – such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following *construction activities* that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single-family home not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family residential subdivisions with 25% or less *impervious cover* at total site build-out and not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.
- Structural agricultural conservation practices as identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023) that include construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.

The following *construction activities* that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

- All construction activities located in the New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

Within the municipal boundaries of NYC:

- Stand-alone road reconstruction, where the total soil disturbance from only that road construction, is less than one (1) acre of land.

The following *construction activities*:

- Installation of underground linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation, *stormwater* retrofits, stream restoration, and resiliency projects that reconstruct shoreline areas to address sea level rise
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an *impervious cover*
- Cross-country ski trails, walking/hiking trails, and mountain biking trails, including a de minimis parking lot (maximum 10 spaces total, sized for passenger cars) with 35 feet minimum preservation of undisturbed area downgradient from the parking lot
- Dam rehabilitation (the structure of the dam itself)
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are not part of residential, commercial, or institutional development;
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path, or walking path.

Table 1 (Continued)
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following *construction activities*:

- Slope stabilization
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Vegetated open space (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) that do not *alter hydrology from pre- to post-development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre- to post-development* conditions
- Demolition where vegetation will be established, and no *redevelopment activity* is planned[1]
- Installation or replacement of either an overhead electric transmission line or a ski lift tower that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*.
- Solar array field areas that have tables elevated off the ground, spaced one table width apart, do not *alter hydrology from pre- to post-development conditions*, and address water quality volume and runoff reduction volume by maintaining sheet flow on slopes less than 8%.
- Structural agricultural conservation practices as identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023) that do not include construction or reconstruction of *impervious area* and do not *alter hydrology from pre- to post-development* conditions.
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary *impervious areas* that will be restored to pre-construction conditions once the *construction activity* is complete (in this context, "temporary" means the *impervious area* will be in place for two years or less)
- Other *construction activities* that do not include the construction or reconstruction of *impervious area*, and do not *alter hydrology from pre- to post-development* conditions, and are not listed in Table 2.

1. If the site is redeveloped in the future, a new eNOI must be submitted.

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPS)

The following *construction activities*:

- Single-family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family home that disturbs five (5) or more acres of land
- Single-family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% *impervious cover* at total site build-out
- Single-family residential subdivisions that involve soil disturbances of between 20,000 square feet and one (1) acre of land within the municipal boundaries of NYC with greater than 25% *impervious cover* at total site build-out
- Single-family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single-family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a *common plan of development or sale* that will ultimately disturb five (5) or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Creation of 5,000 square feet or more of *impervious area* in the municipal boundaries of NYC
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of *impervious area* (>5% of disturbed area) or *alter the hydrology from pre- to post-development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) that involves soil disturbance greater than five acres.
- Structural agricultural conservation practices as identified in Table II in the “Agricultural Best Management Practice Systems Catalogue” (dated June 2023) that involves soil disturbance greater than five acres and include the construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.
- Facility buildings, including ski lodges, restroom buildings, pumphouses, ski lift terminals, and maintenance and groomer garages
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills; including creation of landfills or capping landfills.
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTWs, water treatment plants, and water storage tanks
- Golf courses
- Office complexes

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPS)

The following *construction activities*:

- Permanent laydown yards and equipment storage lots
- Playgrounds that include the construction or reconstruction of *impervious area*
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surfaces
- Road construction or reconstruction, outside the municipal boundaries of NYC
- Road construction within the municipal boundaries of NYC
- Stand-alone road reconstruction, within the municipal boundaries of NYC where the total soil disturbance from that road reconstruction involves soil disturbance of one (1) acre or more of land
- Parking lot construction or reconstruction (as with all Table 2 bullets, this includes parking lots constructed as part of the *construction activities* listed in Table 1, unless a Table 1 bullet specifies otherwise)
- Athletic fields (natural grass) that include the construction or reconstruction of *impervious area* (>5% of disturbed area) or *alter the hydrology from pre- to post-development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations, and well drilling pads, surfaced with *impervious cover,* and constructed as part of an overhead electric transmission line, wind-power, cell tower, oil or gas well drilling, sewer or water main, ski lift, or other linear utility project
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of a residential, commercial or institutional development
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of highway construction or reconstruction
- Solar array field areas on slopes greater than 8% that cannot maintain sheet flow using management practices identified in the BB or the DM
- Solar array field areas on slopes less than 8% that will *alter the hydrology from pre- to post-development* conditions
- Solar array field areas with tables that are not elevated high enough to achieve *final stabilization* beneath the tables
- Traditional *impervious areas* associated with solar development (e.g. roads, buildings, transformers)
- Utility pads surfaced with *impervious cover*, including electric vehicle charging stations
- All other *construction activities* that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre- to post-development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of *construction activities* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs designed in conformance with the Enhanced Phosphorus Removal Standards included in the DM technical standard.

- Entire New York City Watershed located east of the Hudson River – Figure 1
- Onondaga Lake Watershed – Figure 2
- Greenwood Lake Watershed – Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

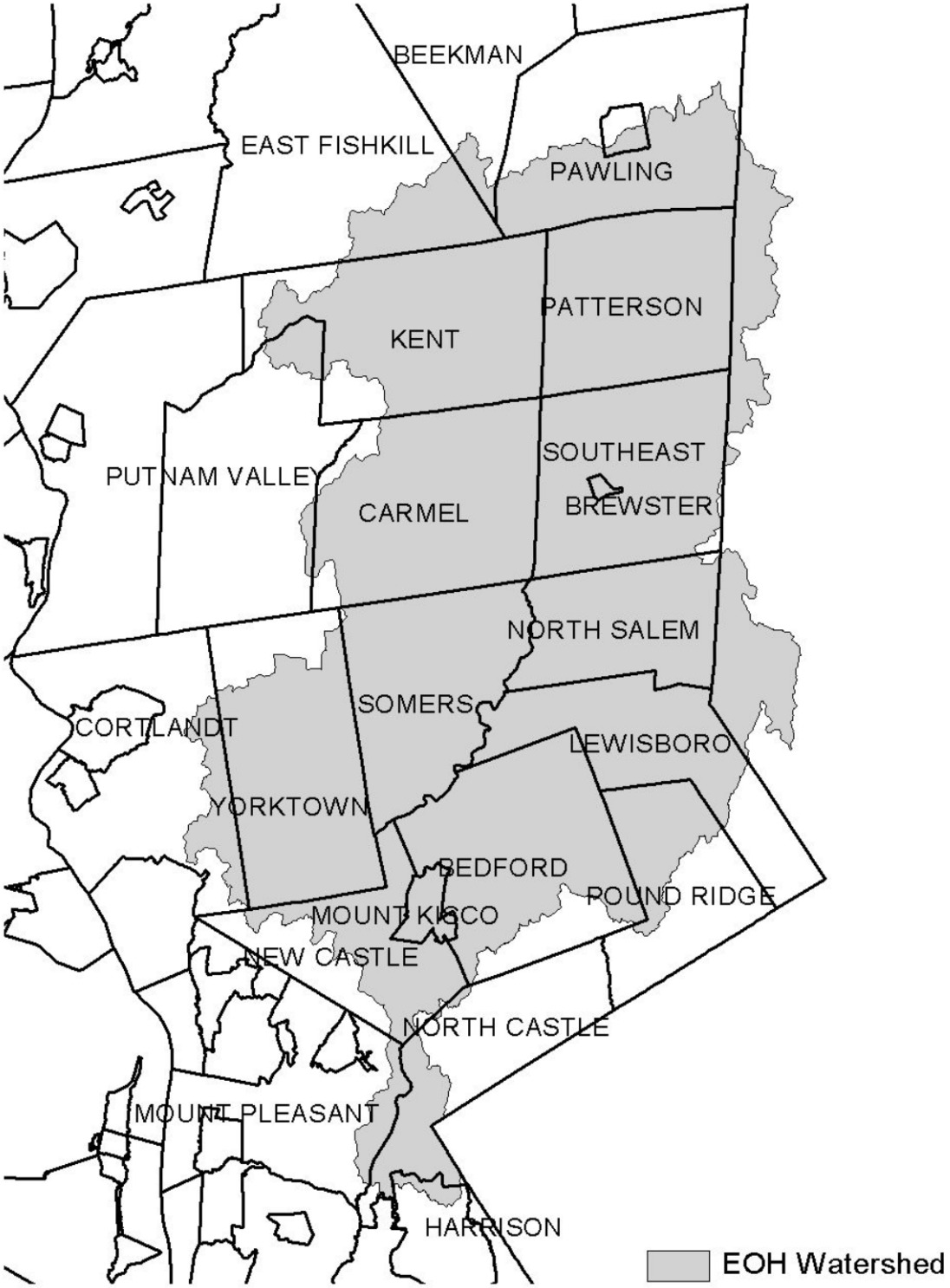


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

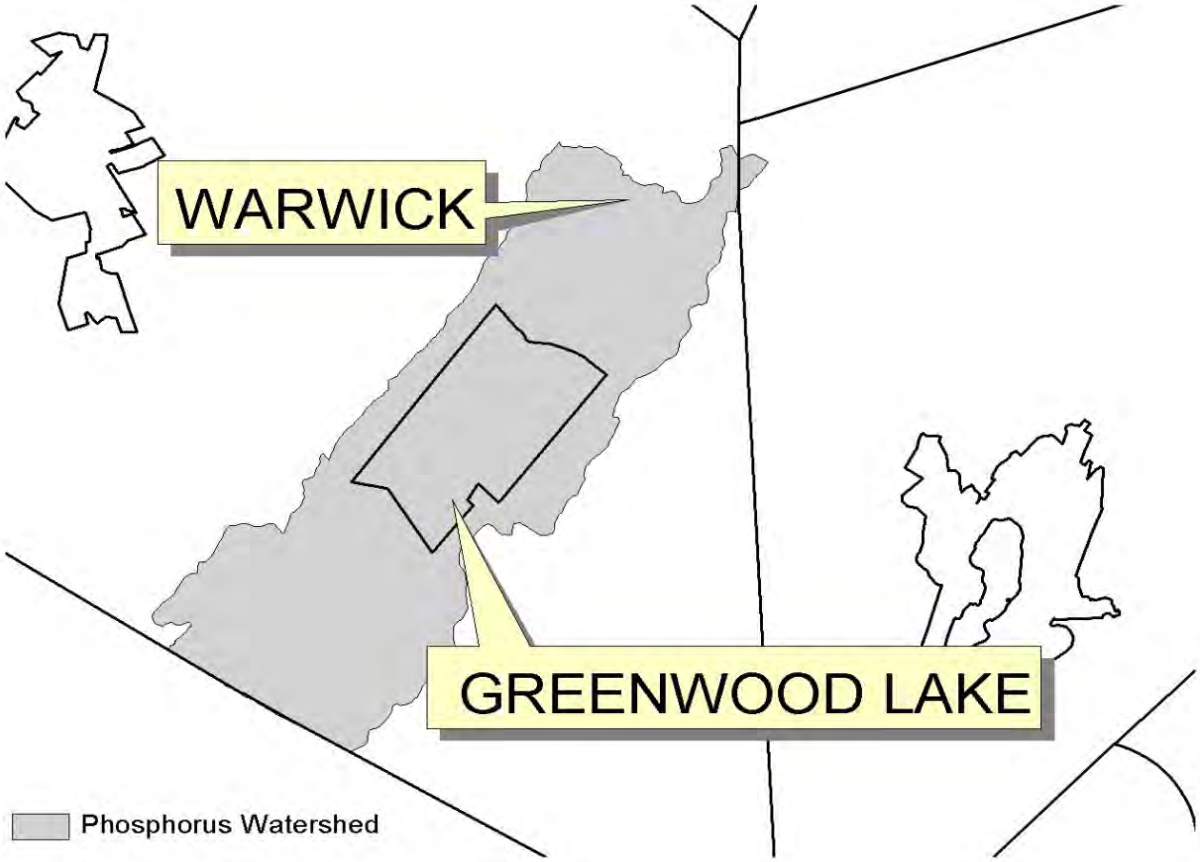


Figure 4 - Oscawana Lake Watershed

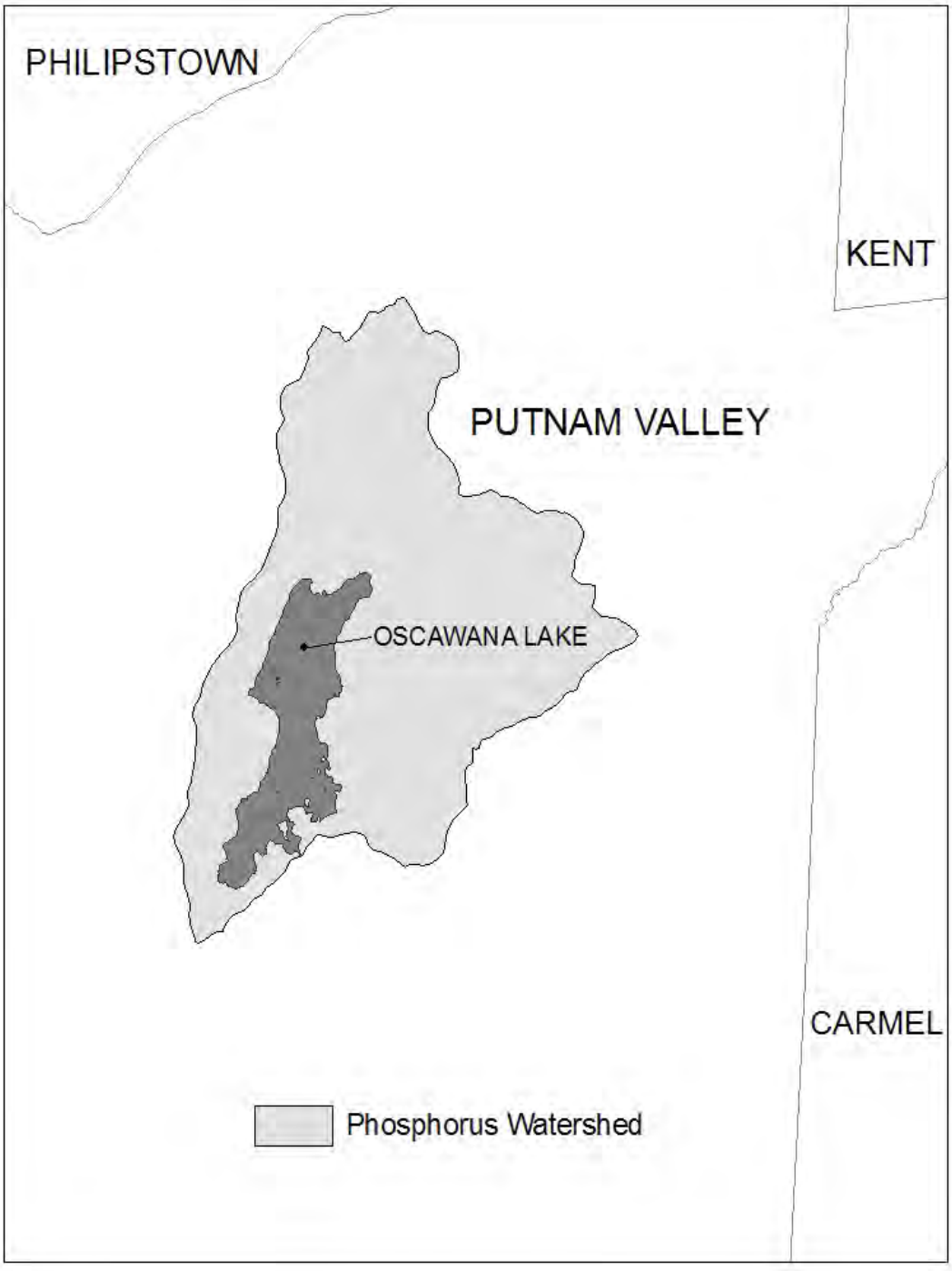
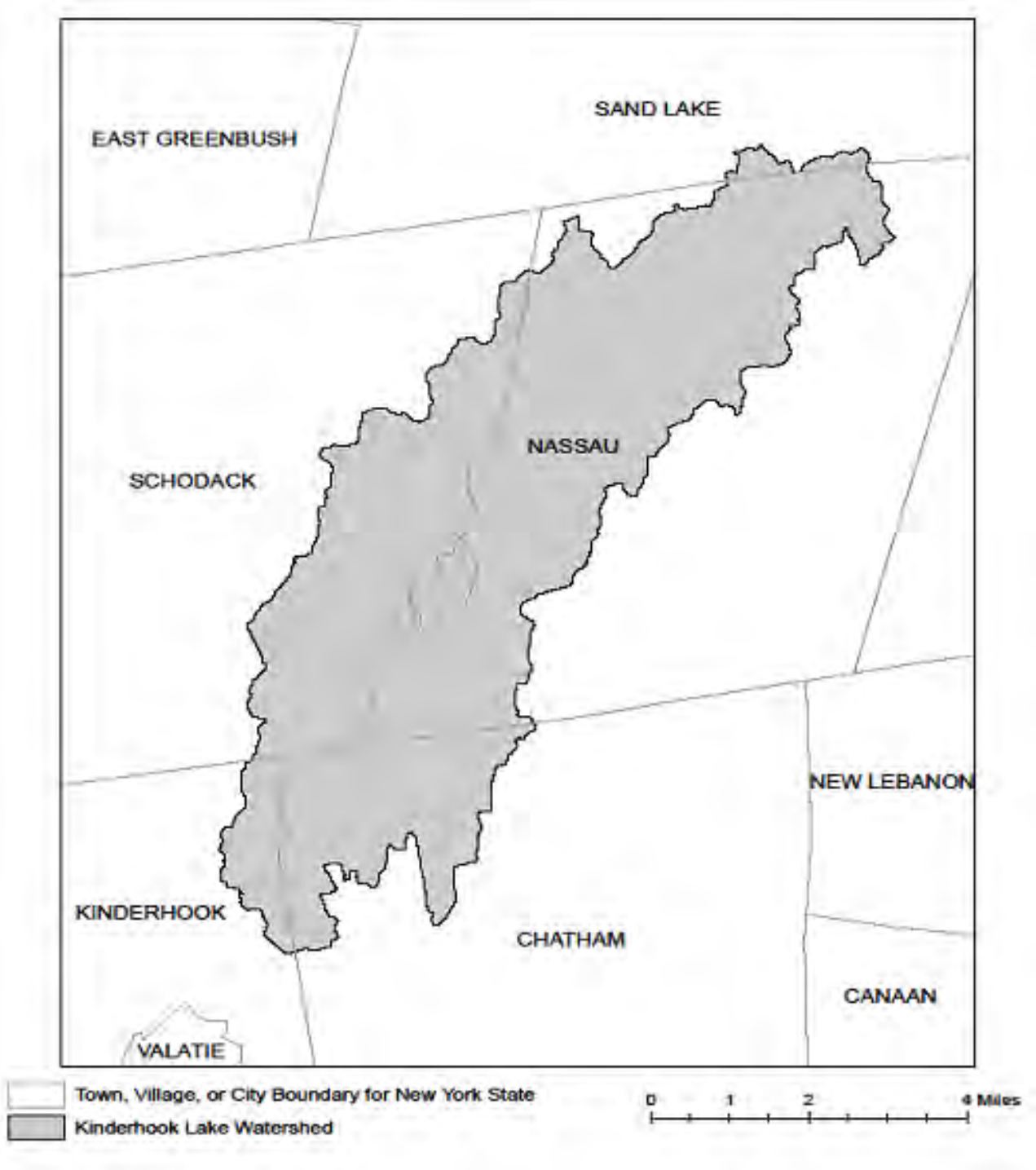


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Impaired Waterbodies (by Construction Related Pollutants)

List of waterbodies impaired by *pollutants* related to *construction activity*, including turbidity, silt/sediment, and nutrients (e.g. nitrogen, phosphorus). This list is a subset of "The Final New York State 2018 Section 303(d) List of Impaired Waters Requiring a TMDL" dated June 2020.

County	Waterbody	Pollutant
Albany	Ann Lee (Shakers) Pond, Stump Pond (1201-0096)	Phosphorus
Albany	Lawsons Lake (1301-0235)	Phosphorus
Allegany	Amity Lake, Saunders Pond (0403-0054)	Phosphorus
Allegany	Andover Pond (0403-0056)	Phosphorus
Bronx	Reservoir No.1/Lake Isle (1702-0075)	Phosphorus
Bronx	Van Cortlandt Lake (1702-0008)	Phosphorus
Broome	Blueberry, Laurel Lakes (1404-0033)	Phosphorus
Broome	Fly Pond, Deer Lake (1404-0038)	Phosphorus
Broome	Minor Tribs to Lower Susquehanna (0603-0044)	Phosphorus
Broome	Whitney Point Lake/Reservoir (0602-0004)	Phosphorus
Cattaraugus	Allegheny River/Reservoir (0201-0023)	Phosphorus
Cattaraugus	Beaver Lake/Alma Pond (0201-0073)	Phosphorus
Cattaraugus	Case Lake (0201-0020)	Phosphorus
Cattaraugus	Linlyco/Club Pond (0201-0035)	Phosphorus
Cayuga	Duck Lake (0704-0025)	Phosphorus
Cayuga	Owasco Inlet, Upper, and tribs (0706-0014)	Nutrients
Chautauqua	Chadakoin River and tribs (0202-0018)	Phosphorus
Chautauqua	Hulburt/Clymer Pond (0202-0079)	Phosphorus
Chautauqua	Middle Cassadaga Lake (0202-0002)	Phosphorus
Clinton	Great Chazy River, Lower, Main Stem (1002-0001)	Silt/Sediment
Columbia	Robinson Pond (1308-0003)	Phosphorus
Cortland	Dean Pond (0602-0077)	Phosphorus
Dutchess	Fallkill Creek (1301-0087)	Phosphorus
Dutchess	Hillside Lake (1304-0001)	Phosphorus
Dutchess	Wappingers Lake (1305-0001)	Phosphorus
Dutchess	Wappingers Lake (1305-0001)	Silt/Sediment
Erie	Beeman Creek and tribs (0102-0030)	Phosphorus
Erie	Delaware Park Pond (0101-0026)	Phosphorus
Erie	Ellicott Creek, Lower, and tribs (0102-0018)	Phosphorus
Erie	Ellicott Creek, Lower, and tribs (0102-0018)	Silt/Sediment
Erie	Green Lake (0101-0038)	Phosphorus
Erie	Little Sister Creek, Lower, and tribs (0104-0045)	Phosphorus
Erie	Murder Creek, Lower, and tribs (0102-0031)	Phosphorus

Erie	Rush Creek and tribs (0104-0018)	Phosphorus
Erie	Scajaquada Creek, Lower, and tribs (0101-0023)	Phosphorus
Erie	Scajaquada Creek, Middle, and tribs (0101-0033)	Phosphorus
Erie	Scajaquada Creek, Upper, and tribs (0101-0034)	Phosphorus
Erie	South Branch Smoke Cr, Lower, and tribs (0101-0036)	Phosphorus
Erie	South Branch Smoke Cr, Lower, and tribs (0101-0036)	Silt/Sediment
Genesee	Bigelow Creek and tribs (0402-0016)	Phosphorus
Genesee	Black Creek, Middle, and minor tribs (0402 0028)	Phosphorus
Genesee	Black Creek, Upper, and minor tribs (0402-0048)	Phosphorus
Genesee	Bowen Brook and tribs (0102-0036)	Phosphorus
Genesee	LeRoy Reservoir (0402-0003)	Phosphorus
Genesee	Mill Pond (0402-0050)	Phosphorus
Genesee	Oak Orchard Cr, Upper, and tribs (0301-0014)	Phosphorus
Genesee	Oatka Creek, Middle, and minor tribs (0402-0031)	Phosphorus
Genessee	Tonawanda Cr, Middle, Main Stem (0102-0002)	Phosphorus
Greene	Schoharie Reservoir (1202-0012)	Silt/Sediment
Greene	Sleepy Hollow Lake (1301-0059)	Silt/Sediment
Herkimer	Steele Creek tribs (1201-0197)	Phosphorus
Herkimer	Steele Creek tribs (1201-0197)	Silt/Sediment
Kings	Hendrix Creek (1701-0006) 18	Nitrogen
Kings	Prospect Park Lake (1701-0196)	Phosphorus
Lewis	Mill Creek/South Branch, and tribs (0801-0200)	Nutrients
Livingston	Christie Creek and tribs (0402-0060)	Phosphorus
Livingston	Conesus Lake (0402-0004)	Phosphorus
Livingston	Mill Creek and minor tribs (0404-0011)	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs (0402-0033)	Phosphorus
Monroe	Buck Pond (0301-0017)	Phosphorus
Monroe	Cranberry Pond (0301-0016)	Phosphorus
Monroe	Durand, Eastman Lakes (0302-0037)	Phosphorus
Monroe	Lake Ontario Shoreline, Western (0301-0069) 9	Phosphorus
Monroe	Long Pond (0301-0015)	Phosphorus
Monroe	Mill Creek and tribs (0302-0025)	Phosphorus 2
Monroe	Mill Creek/Blue Pond Outlet and tribs (0402-0049)	Phosphorus
Monroe	Minor Tribs to Irondequoit Bay (0302-0038)	Phosphorus
Monroe	Rochester Embayment - East (0302-0002) [9]	Phosphorus
Monroe	Rochester Embayment - West (0301-0068) 9	Phosphorus
Monroe	Shipbuilders Creek and tribs (0302-0026)	Phosphorus 2
Monroe	Thomas Creek/White Brook and tribs (0302-0023)	Phosphorus

Nassau	Bannister Creek/Bay (1701-0380)	Nitrogen
Nassau	Beaver Lake (1702-0152)	Phosphorus
Nassau	Browswere Bay (1701-0383)	Nitrogen
Nassau	Camaans Pond (1701-0052)	Phosphorus
Nassau	East Meadow Brook, Upper, and tribs (1701-0211)	Silt/Sediment
Nassau	East Rockaway Channel (1701-0381)	Nitrogen
Nassau	Glen Cove Creek, Lower, and tribs (1702-0146)	Silt/Sediment
Nassau	Grant Park Pond (1701-0054)	Phosphorus
Nassau	Hempstead Bay, Broad Channel (1701-0032)	Nitrogen
Nassau	Hempstead Lake (1701-0015)	Phosphorus
Nassau	Hewlett Bay (1701-0382)	Nitrogen
Nassau	Hog Island Channel (1701-0220)	Nitrogen
Nassau	Massapequa Creek, Upper, and tribs (1701-0174)	Phosphorus
Nassau	Milburn/Parsonage Creeks, Upp, and tribs (1701-0212)	Phosphorus
Nassau	Reynolds Channel, East (1701-0215) [12]	Nitrogen
Nassau	Reynolds Channel, West (1701-0216) 12	Nitrogen
Nassau	Tidal Tribs to Hempstead Bay (1701-0218)	Nitrogen
Nassau	Tribs (fresh) to East Bay (1701-0204)	Silt/Sediment
Nassau	Tribs (fresh) to East Bay (1701-0204)	Phosphorus
Nassau	Tribs to Smith Pond/Halls Pond (1701-0221)	Phosphorus
Nassau	Woodmere Channel (1701-0219)	Nitrogen
New York	Harlem Meer (1702-0103)	Phosphorus
New York	The Lake in Central Park (1702-0105)	Phosphorus
Niagara	Bergholtz Creek and tribs (0101-0004)	Phosphorus
Niagara	Hyde Park Lake (0101-0030)	Phosphorus
Niagara	Lake Ontario Shoreline, Western (0301-0053) 9	Phosphorus
Niagara	Lake Ontario Shoreline, Western (0301-0072) 9	Phosphorus
Oneida	Ballou, Nail Creeks (1201-0203)	Phosphorus
Onondaga	Ley Creek and tribs (0702-0001) 10	Nutrients (phosphorus)
Onondaga	Minor Tribs to Onondaga Lake (0702-0022) 10	Nutrients (phosphorus)
Onondaga	Minor Tribs to Onondaga Lake (0702-0022) 10	Nitrogen (NH3, NO2)
Onondaga	Onondaga Creek, Lower (0702-0023) 10	Nutrients (phosphorus)
Onondaga	Onondaga Creek, Lower, and tribs (0702-0023)	Turbidity
Onondaga	Onondaga Creek, Middle, and tribs (0702-0004)	Turbidity
Onondaga	Onondaga Creek, Upper, and tribs (0702-0024)	Turbidity
Ontario	Great Brook and minor tribs (0704-0034)	Phosphorus 2
Ontario	Great Brook and minor tribs (0704-0034)	Silt/Sediment

Ontario	Hemlock Lake Outlet and minor tribs (0402-0013)	Phosphorus
Ontario	Honeoye Lake (0402-0032)	Phosphorus
Orange	Brown Pond Reservoir (1303-0013)	Phosphorus
Orange	Lake Washington (1303-0012)	Phosphorus
Orange	Minor Tribs to Middle Wallkill (1306-0061)	Phosphorus
Orange	Monhagen Brook and tribs (1306-0074)	Phosphorus
Orange	Orange Lake (1301-0008) [16]	Phosphorus
Orange	Quaker Creek and tribs (1306-0025)	Phosphorus
Orange	Wallkill River, Middle, Main Stem (1306-0038)	Phosphorus
Orange	Wallkill River, Upper, and Minor tribs (1306-0017)	Phosphorus
Orleans	Glenvwood Lake (0301-0041)	Phosphorus
Orleans	Lake Ontario Shoreline, Western (0301-0070) 9	Phosphorus
Orleans	Lake Ontario Shoreline, Western (0301-0071) 9	Phosphorus
Oswego	Lake Neatahwanta (0701-0018)	Nutrients (phosphorus)
Oswego	Pleasant Lake (0703-0047)	Phosphorus
Putnam	Lost Lake, Putnam Lake (1302-0053)	Phosphorus
Putnam	Minor Tribs to Croton Falls Reservoir (1302-0001)	Phosphorus
Queens	Bergen Basin (1701-0009) 18	Nitrogen
Queens	Jamaica Bay, Eastern, and tribs, Queens (1701-0005) 18	Nitrogen
Queens	Kissena Lake (1702-0258)	Phosphorus
Queens	Meadow Lake (1702-0030)	Phosphorus
Queens	Shellbank Basin (1701-0001) 18	Nitrogen
Queens	Willow Lake (1702-0031)	Phosphorus
Rensselaer	Nassau Lake (1310-0001)	Phosphorus
Rensselaer	Snyders Lake (1301-0043)	Phosphorus
Richmond	Grassmere Lake/Bradys Pond (1701-0357)	Phosphorus
Rockland	Congers Lake, Swartout Lake (1501-0019)	Phosphorus
Rockland	Rockland Lake (1501-0021)	Phosphorus
Saratoga	Ballston Lake (1101-0036)	Phosphorus
Saratoga	Dwaas Kill and tribs (1101-0007)	Phosphorus
Saratoga	Dwaas Kill and tribs (1101-0007)	Silt/Sediment
Saratoga	Lake Lonely (1101-0034)	Phosphorus
Saratoga	Round Lake (1101-0060)	Phosphorus
Saratoga	Tribs to Lake Lonely (1101-0001)	Phosphorus
Schenectady	Collins Lake (1201-0077)	Phosphorus
Schenectady	Duane Lake (1311-0006)	Phosphorus
Schenectady Lake	Mariaville Lake (1201-0113)	Phosphorus
Schuyler	Cayuta Lake (0603-0005)	Phosphorus

Seneca	Reeder Creek and tribs (0705-0074)	Phosphorus
St.Lawrence	Black Lake Outlet, Black Lake (0906-0001)	Phosphorus
St.Lawrence	Fish Creek and minor tribs (0906-0026)	Phosphorus
Steuben	Smith Pond (0502-0012)	Phosphorus
Suffolk	Agawam Lake (1701-0117)	Phosphorus
Suffolk	Big/Little Fresh Ponds (1701-0125)	Phosphorus
Suffolk	Canaan Lake (1701-0018)	Phosphorus
Suffolk	Canaan Lake (1701-0018)	Silt/Sediment
Suffolk	Fresh Pond (1701-0241)	Phosphorus
Suffolk	Great South Bay, East (1701-0039)	Nitrogen
Suffolk	Great South Bay, Middle (1701-0040)	Nitrogen
Suffolk	Great South Bay, West (1701-0173)	Nitrogen
Suffolk	Lake Ronkonkoma (1701-0020)	Phosphorus
Suffolk	Mattituck/Marratooka Pond (1701-0129)	Phosphorus
Suffolk	Mill and Seven Ponds (1701-0113)	Phosphorus
Suffolk	Millers Pond (1702-0013)	Phosphorus
Suffolk	Moriches Bay, East (1701-0305)	Nitrogen
Suffolk	Moriches Bay, West (1701-0038)	Nitrogen
Suffolk	Quantuck Bay (1701-0042)	Nitrogen
Suffolk	Shinnecock Bay and Inlet (1701-0033)	Nitrogen
Suffolk	Tidal Tribs to West Moriches Bay (1701-0312)	Nitrogen
Sullivan	Bodine, Mongomery Lakes (1401-0091)	Phosphorus
Sullivan	Davies Lake (1402-0047)	Phosphorus
Sullivan	Evens Lake (1402-0004)	Phosphorus
Sullivan	Pleasure Lake (1402-0055)	Phosphorus
Sullivan	Swan Lake (1401-0063)	Phosphorus
Tompkins	Cayuga Lake, Southern End (0705-0040)	Phosphorus
Tompkins	Cayuga Lake, Southern End (0705-0040)	Silt/Sediment
Ulster	Ashokan Reservoir (1307-0004)	Silt/Sediment
Ulster	Esopus Creek, Lower, Main Stem (1307-0010) [17]	Turbidity
Ulster	Esopus Creek, Middle, Main Stem (1307-0003) 17	Turbidity
Ulster	Esopus Creek, Upper, and minor tribs (1307-0007)[3]	Silt/Sediment
Ulster	Wallkill River, Lower, Main Stem (1306-0027)	Phosphorus
Warren	Hague Brook and tribs (1006-0006)	Silt/Sediment
Warren	Huddle/Finkle Brooks and tribs (1006-0003)	Silt/Sediment
Warren	Indian Brook and tribs (1006-0002)	Silt/Sediment
Warren	Lake George (1006-0016) and tribs	Silt/Sediment
Warren	Tribs to Lake George, East Shore (1006-0020)	Silt/Sediment
Warren	Tribs to Lake George, Lk.George Village (1006-0008)	Silt/Sediment

Washington	Wood Cr/Champlain Canal and tribs (1005-0036)	Phosphorus
Westchester	Lake Katonah (1302-0136)	Phosphorus
Westchester	Lake Lincolndale (1302-0089)	Phosphorus
Westchester	Lake Meahagh (1301-0053)	Phosphorus
Westchester	Lake Mohegan (1301-0149)	Phosphorus
Westchester	Lake Shenorock (1302-0083)	Phosphorus
Westchester	Mamaroneck River, Lower (1702-0071)	Silt/Sediment
Westchester	Mamaroneck River, Upp, & minor tribs (1702-0123)	Silt/Sediment
Westchester	Saw Mill River (1301-0007)	Phosphorus
Westchester	Saw Mill River, Middle, and tribs (1301-0100)	Phosphorus
Westchester	Sheldrake River (1702-0069)	Phosphorus
Westchester	Sheldrake River (1702-0069)	Silt/Sedimnt
Westchester	Silver Lake (1702-0040)	Phosphorus
Westchester	Teatown Lake (1302-0150)	Phosphorus
Westchester	Truesdale Lake (1302-0054)	Phosphorus
Westchester	Wallace Pond (1301-0140)	Phosphorus

APPENDIX E – List of NYSDEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	220 White Plains Road, Suite 110 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	5786 WIDEWATERS PARKWAY SYRACUSE, NY 13214-1867 TEL. (315) 426-7438	5786 WIDEWATERS PARKWAY SYRACUSE, NY 13214-1867 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	700 DELAWARE AVENUE BUFFALO, NY 14209-2999 TEL. (716) 851-7165	700 DELAWARE AVENUE BUFFALO, NY 14209-2999 TEL. (716) 851-7070

APPENDIX F – SWPPP Preparer Certification Form

The SWPPP Preparer Certification Form required by this permit begins on the following page.

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

Project/Site Name:

eNOI Submission ID:

Owner/Operator Name:

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with the requirements of GP-0-25-001. I certify under penalty of law that the SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SWPPP Preparer First Name | MI | SWPPP Preparer Last Name

Signature | Date

Revised: January 2025

APPENDIX G – MS4 SWPPP Acceptance Form

The MS4 SWPPP Acceptance Form required by this permit begins on the following page.

MS4 SWPPP Acceptance Form

for construction activities seeking authorization under the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

I. Project Owner/Operator Information
1. Owner/Operator Name:
2. Contact Person:
3. Street Address:
4. City/State/Zip:
II. Project Site Information
5. Project/Site Name:
6. Street Address:
7. City/State/Zip:
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information
8. SWPPP Reviewed by:
9. Title/Position:
10. Date Final SWPPP Reviewed and Accepted:
IV. Regulated MS4 Information
11. Name of MS4 Operator:
12. MS4 SPDES Permit Identification Number: NYR20A
13. Street Address:
14. City/State/Zip:
15. Telephone Number:

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in section II. of this form has been reviewed and meets the substantive requirements in the SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP). Note: The MS4 Operator, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 Operator does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name[1]:

Title/Position:

Signature:

Date:

VI. Additional Information

[1] Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.

APPENDIX H – NYCDEP SWPPP Acceptance/Approval Form

The City of New York Department of Environmental Protection (NYCDEP) SWPPP Acceptance/Approval form required by this permit begins on the following page.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Planning and Analysis
59-17 Junction Blvd., 9th Floor; Flushing, NY 11373

SWPPP Acceptance/Approval

Application Number:

I. Project Owner/Operator Information

1. Owner/Operator Name:
2. Contact Person:
3. Street Address:
4. City/State/Zip:

II. Project Site Information

5. Project/Site Name:
6. Street Address:
7. City/State/Zip:

III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance/Approval

8. SWPPP Reviewed by:
9. Title/Position: /
10. Date Final SWPPP Reviewed and Accepted:
11. Acceptance/Approval Expiration Date:

IV. Regulated MS4 Information for projects that require coverage under the NY State Pollution Discharge Elimination System General Permit for Stormwater Discharges from Construction Activity

12. Name of MS4: *CITY OF NEW YORK*
13. MS4 SPDES Permit Identification Number: *NY-0287890*
14. Contact Person:
15. Street Address: *59-17 Junction Blvd. 9th Floor*
16. City/State/Zip: *Flushing, NY 11373*
17. Telephone Number:

Projects in the MS4 area must submit a copy of this SWPPP Acceptance with a Notice of Intent for coverage under the NY SPDES General Permit for Stormwater Discharges from Construction Activity to: NYS Department of Environmental Conservation, Division of Water; 625 Broadway, 4th Floor; Albany, New York 12233-3505.

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).

Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Conditions of Acceptance/Approval and Additional Information

Projects in the MS4 area must submit a copy of this SWPPP Acceptance with a Notice of Intent for coverage under the NY SPDES General Permit for Stormwater Discharges from Construction Activity to: NYS Department of Environmental Conservation, Division of Water; 625 Broadway, 4th Floor; Albany, New York 12233-3505.

APPENDIX I – MS4 No Jurisdiction Form

The MS4 No Jurisdiction Form required by this permit begins on the following page.

MS4 No Jurisdiction Form

for construction activities seeking authorization under the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

I. Project Owner/Operator Information

a. Owner/Operator Name:

b. Contact Person:

c. Street Address:

d. City/State/Zip:

II. Project Site Information

a. Project/Site Name:

b. Street Address:

c. City/State/Zip:

d. eNOI Submission ID:

III. Traditional Land Use Control MS4 Operator Information

a. Name of MS4 Operator:

b. MS4 SPDES Permit ID Number: NYR20A

c. Street Address:

d. City/State/Zip:

e. Telephone Number:

IV. Certification Statement

In accordance with CGP Part I.D.2.b.ii.3., I hereby certify that the Traditional Land Use Control MS4 Operator identified in section III. of this form does not have review authority over the construction project identified in section II. of this form, which is owned/operated by the entity identified in section I. of this form. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

a. Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.:

b. Title/Position:

c. Signature:

d. Date:

APPENDIX J – Owner/Operator Certification Form

The Owner/Operator Certification Form required by this permit begins on the following page.

Owner/Operator Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b. or Part I.F.2. and 3., the completed form must be attached to the eNOI or the Request to Continue Coverage, and submitted to NYSDEC electronically.

Project/Site Name: _____

eNOI Submission ID: _____

eNOI Submitted by: ☐ **Owner/Operator** ☐ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I hereby certify that I read, and will comply with, the GP-0-25-001 permit requirements. I understand that authorization to discharge under the permit for the project/site named above is dependent on receipt of a Letter of Authorization (LOA) or a Letter of Continued Coverage (LOCC) from the New York State Department of Environmental Conservation (NYSDEC) in accordance with CGP Part I.D.3.b. or Part I.F.4. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner/Operator First Name MI Owner/Operator Last Name

_____

Signature

_____

Date

Revised: January 2025

Appendix B

NYSDEC SPDES Forms

Appendix C

HydroCAD Drainage Calculations and Output: Existing Conditions

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point	
Smoothing	Yes
State	New York
Location	New York, United States
Latitude	42.163 degrees North
Longitude	77.104 degrees West
Elevation	280 feet
Date/Time	Thu Jul 31 2025 09:01:16 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr
1yr	0.26	0.40	0.50	0.66	0.82	1.01	**1yr**	0.71	0.89	1.15	1.39	1.66	1.98	2.21
2yr	0.32	0.50	0.62	0.82	1.02	1.26	**2yr**	0.88	1.12	1.42	1.70	1.99	2.32	2.57
5yr	0.39	0.60	0.75	1.01	1.29	1.59	**5yr**	1.11	1.40	1.80	2.14	2.49	2.87	3.23
10yr	0.44	0.69	0.87	1.18	1.54	1.91	**10yr**	1.33	1.66	2.16	2.55	2.96	3.38	3.85
25yr	0.53	0.84	1.07	1.47	1.95	2.43	**25yr**	1.68	2.08	2.74	3.22	3.70	4.18	4.85
50yr	0.60	0.96	1.23	1.73	2.33	2.92	**50yr**	2.01	2.47	3.30	3.86	4.39	4.92	5.79
100yr	0.69	1.12	1.45	2.05	2.79	3.49	**100yr**	2.41	2.93	3.95	4.59	5.21	5.79	6.91
200yr	0.80	1.30	1.69	2.42	3.34	4.19	**200yr**	2.88	3.48	4.73	5.48	6.18	6.82	8.25
500yr	0.97	1.60	2.09	3.03	4.24	5.33	**500yr**	3.66	4.37	6.01	6.92	7.73	8.47	10.44

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr
1yr	0.23	0.36	0.44	0.59	0.73	0.79	**1yr**	0.63	0.78	0.95	1.14	1.33	1.66	1.99
2yr	0.31	0.47	0.58	0.79	0.97	1.09	**2yr**	0.84	1.07	1.22	1.50	1.87	2.24	2.52
5yr	0.34	0.52	0.65	0.89	1.13	1.27	**5yr**	0.98	1.24	1.40	1.75	2.19	2.68	3.01
10yr	0.37	0.57	0.70	0.98	1.27	1.42	**10yr**	1.10	1.39	1.55	1.93	2.44	3.02	3.47
25yr	0.41	0.63	0.78	1.12	1.47	1.64	**25yr**	1.27	1.61	1.78	2.20	2.81	3.50	4.13
50yr	0.45	0.68	0.85	1.23	1.65	1.84	**50yr**	1.42	1.80	1.97	2.42	3.13	3.91	4.70
100yr	0.49	0.74	0.93	1.35	1.85	2.06	**100yr**	1.59	2.01	2.18	2.64	3.50	4.32	5.33
200yr	0.54	0.81	1.02	1.48	2.07	2.30	**200yr**	1.78	2.25	2.43	2.89	3.93	4.78	6.04
500yr	0.61	0.90	1.16	1.69	2.40	2.67	**500yr**	2.07	2.61	2.79	3.23	4.59	5.42	7.09

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr
1yr	0.31	0.48	0.59	0.79	0.97	1.01	**1yr**	0.84	0.99	1.18	1.46	1.83	2.13	2.39
2yr	0.34	0.53	0.65	0.88	1.08	1.20	**2yr**	0.93	1.17	1.33	1.65	2.04	2.41	2.64

W Water Development

Prepared by Fagan Engineers & Land Surveyors

Printed 7/31/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1 YR	Type II 24-hr		Default	24.00	1	1.98	2
2	10 YR	Type II 24-hr		Default	24.00	1	3.38	2
3	100 YR	Type II 24-hr		Default	24.00	1	5.79	2

Summary for Subcatchment 1S: West Water Existing

[45] Hint: Runoff=Zero

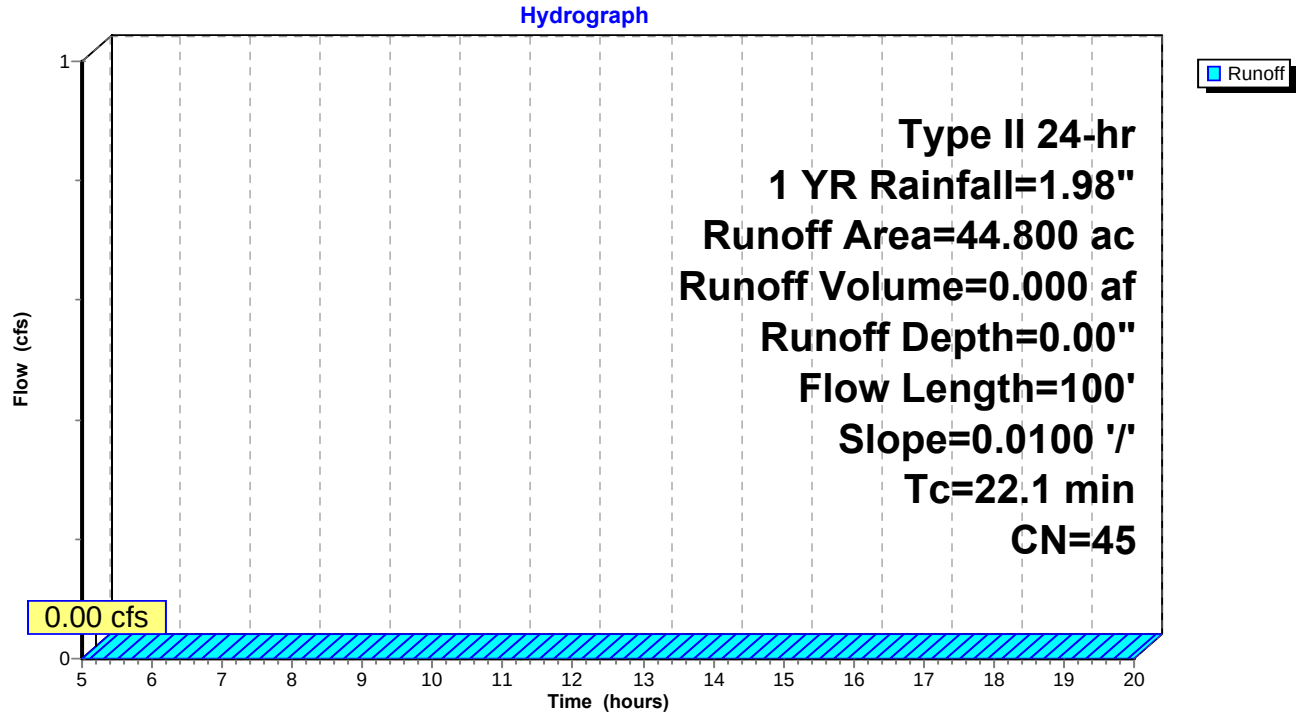
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 YR Rainfall=1.98"

Area (ac)	CN	Description
4.500	98	Paved parking, HSG A
40.300	39	>75% Grass cover, Good, HSG A
44.800	45	Weighted Average
40.300		89.96% Pervious Area
4.500		10.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	100	0.0100	0.08		**Sheet Flow, Grass Sheet Flow** Grass: Dense n= 0.240 P2= 2.32"

Subcatchment 1S: West Water Existing



Summary for Subcatchment 1S: West Water Existing

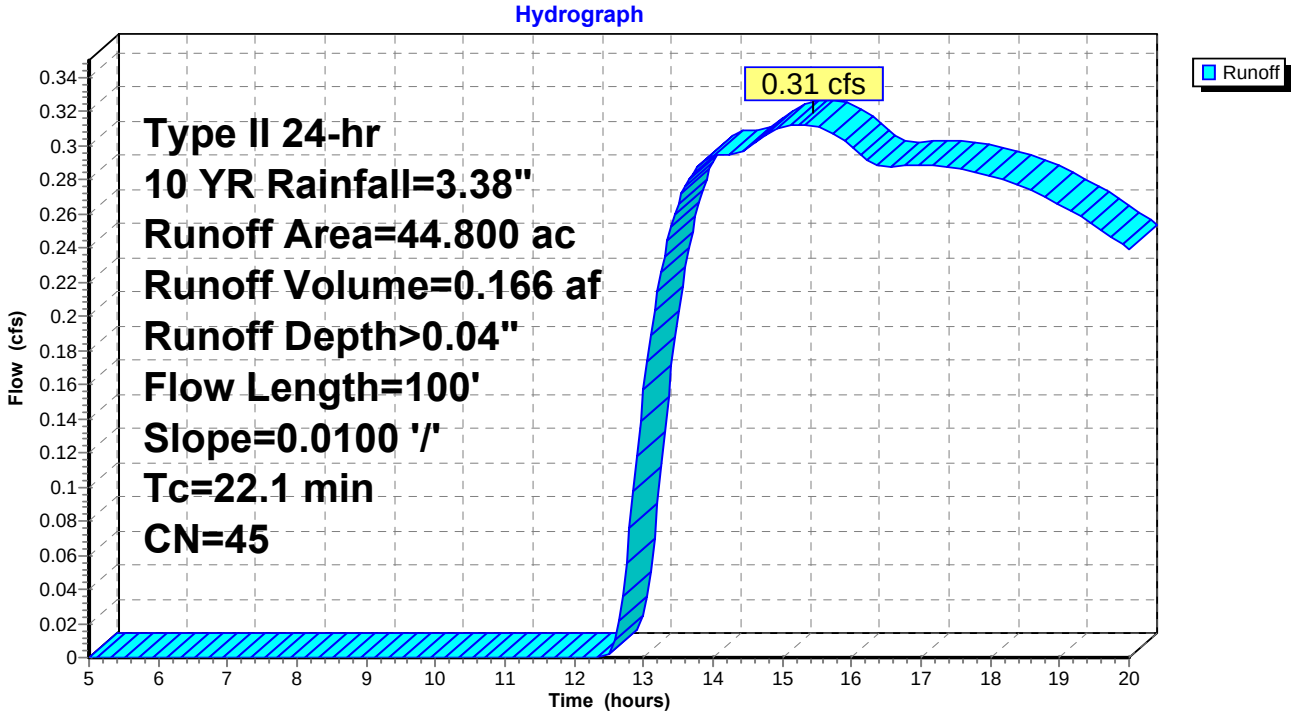
Runoff = 0.31 cfs @ 15.25 hrs, Volume= 0.166 af, Depth> 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YR Rainfall=3.38"

Area (ac)	CN	Description
4.500	98	Paved parking, HSG A
40.300	39	>75% Grass cover, Good, HSG A
44.800	45	Weighted Average
40.300		89.96% Pervious Area
4.500		10.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	100	0.0100	0.08		**Sheet Flow, Grass Sheet Flow** Grass: Dense n= 0.240 P2= 2.32"

Subcatchment 1S: West Water Existing



Summary for Subcatchment 1S: West Water Existing

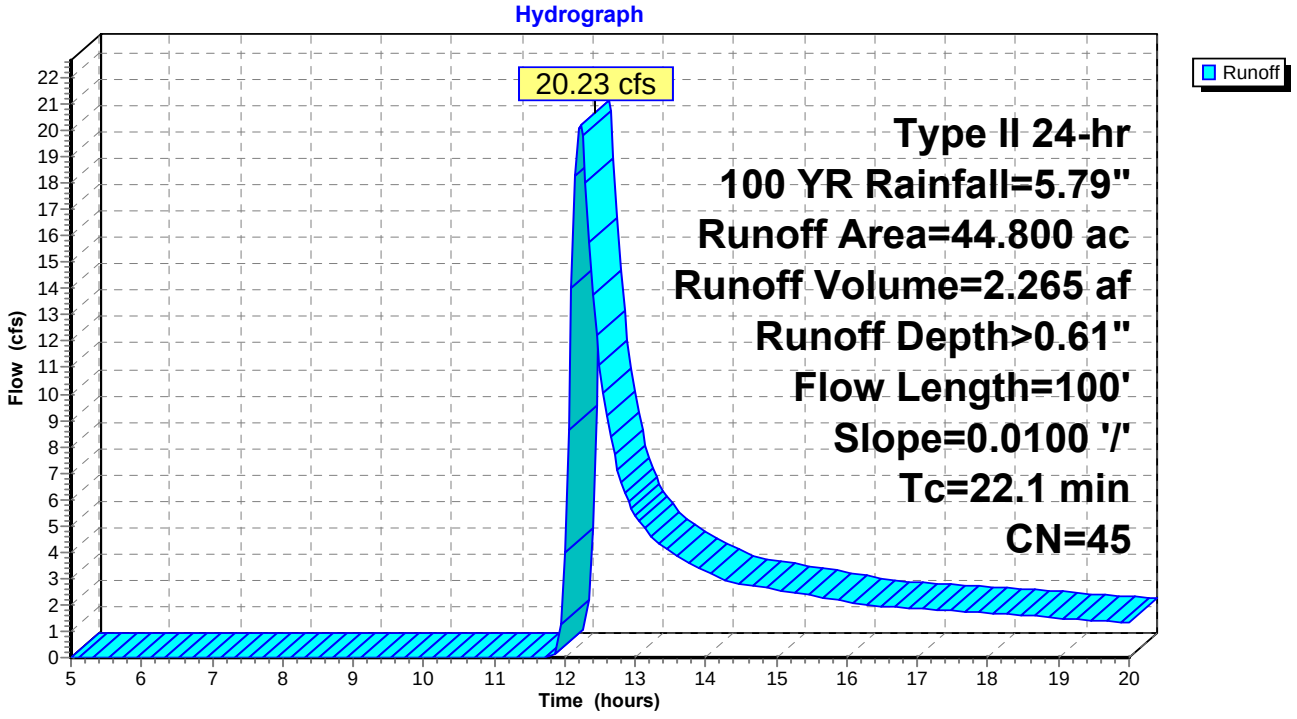
Runoff = 20.23 cfs @ 12.22 hrs, Volume= 2.265 af, Depth> 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 YR Rainfall=5.79"

Area (ac)	CN	Description
4.500	98	Paved parking, HSG A
40.300	39	>75% Grass cover, Good, HSG A
44.800	45	Weighted Average
40.300		89.96% Pervious Area
4.500		10.04% Impervious Area

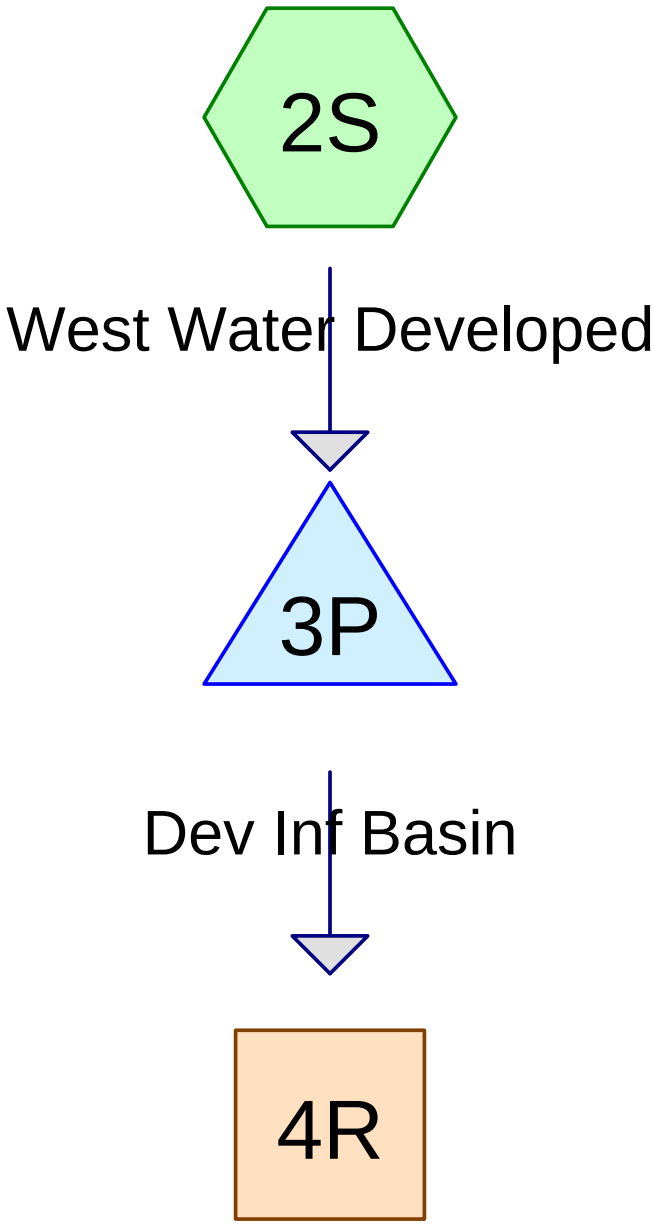
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	100	0.0100	0.08		**Sheet Flow, Grass Sheet Flow** Grass: Dense n= 0.240 P2= 2.32"

Subcatchment 1S: West Water Existing



Appendix D

HydroCAD Drainage Calculations and Output: Developed & Mitigated Conditions



Subcat Reach Pond Link

Routing Diagram for W Water Development

Prepared by Fagan Engineers & Land Surveyors, Printed 7/31/2025

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W Water Development

Prepared by Fagan Engineers & Land Surveyors

Printed 7/31/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1 YR	Type II 24-hr		Default	24.00	1	1.98	2
2	10 YR	Type II 24-hr		Default	24.00	1	3.38	2
3	100 YR	Type II 24-hr		Default	24.00	1	5.79	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
27.420	39	>75% Grass cover, Good, HSG A (2S)
17.380	98	Paved parking, HSG A (2S)
44.800	**62**	**TOTAL AREA**

W Water Development

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
44.800	HSG A	2S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
44.800		**TOTAL AREA**

W Water Development

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
27.420	0.000	0.000	0.000	0.000	27.420	>75% Grass cover, Good	2S
17.380	0.000	0.000	0.000	0.000	17.380	Paved parking	2S
44.800	**0.000**	**0.000**	**0.000**	**0.000**	**44.800**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: West Water Developed Runoff Area=44.800 ac 38.79% Impervious Runoff Depth>0.06"
Flow Length=100' Slope=0.0100 '/' Tc=1.9 min CN=62 Runoff=0.90 cfs 0.239 af

Reach 4R: Outlfall Developed Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 3P: Dev Inf Basin Peak Elev=96.00' Storage=0.005 af Inflow=0.90 cfs 0.239 af
Discarded=0.67 cfs 0.237 af Primary=0.00 cfs 0.000 af Outflow=0.67 cfs 0.237 af

Total Runoff Area = 44.800 ac Runoff Volume = 0.239 af Average Runoff Depth = 0.06"
61.21% Pervious = 27.420 ac 38.79% Impervious = 17.380 ac

Summary for Subcatchment 2S: West Water Developed

[49] Hint: Tc<2dt may require smaller dt

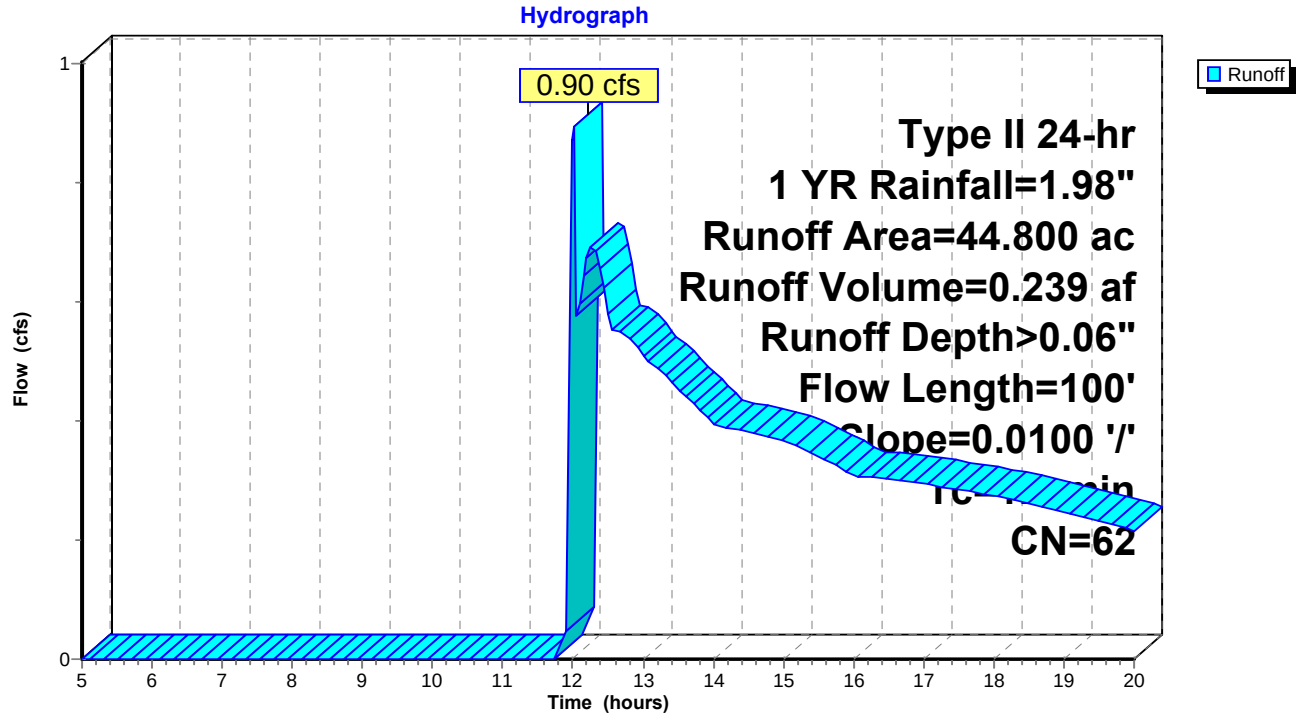
Runoff = 0.90 cfs @ 12.01 hrs, Volume= 0.239 af, Depth> 0.06"
Routed to Pond 3P : Dev Inf Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 YR Rainfall=1.98"

Area (ac)	CN	Description
17.380	98	Paved parking, HSG A
27.420	39	>75% Grass cover, Good, HSG A
44.800	62	Weighted Average
27.420		61.21% Pervious Area
17.380		38.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.89		**Sheet Flow, Parking Lot** Smooth surfaces n= 0.011 P2= 2.32"

Subcatchment 2S: West Water Developed



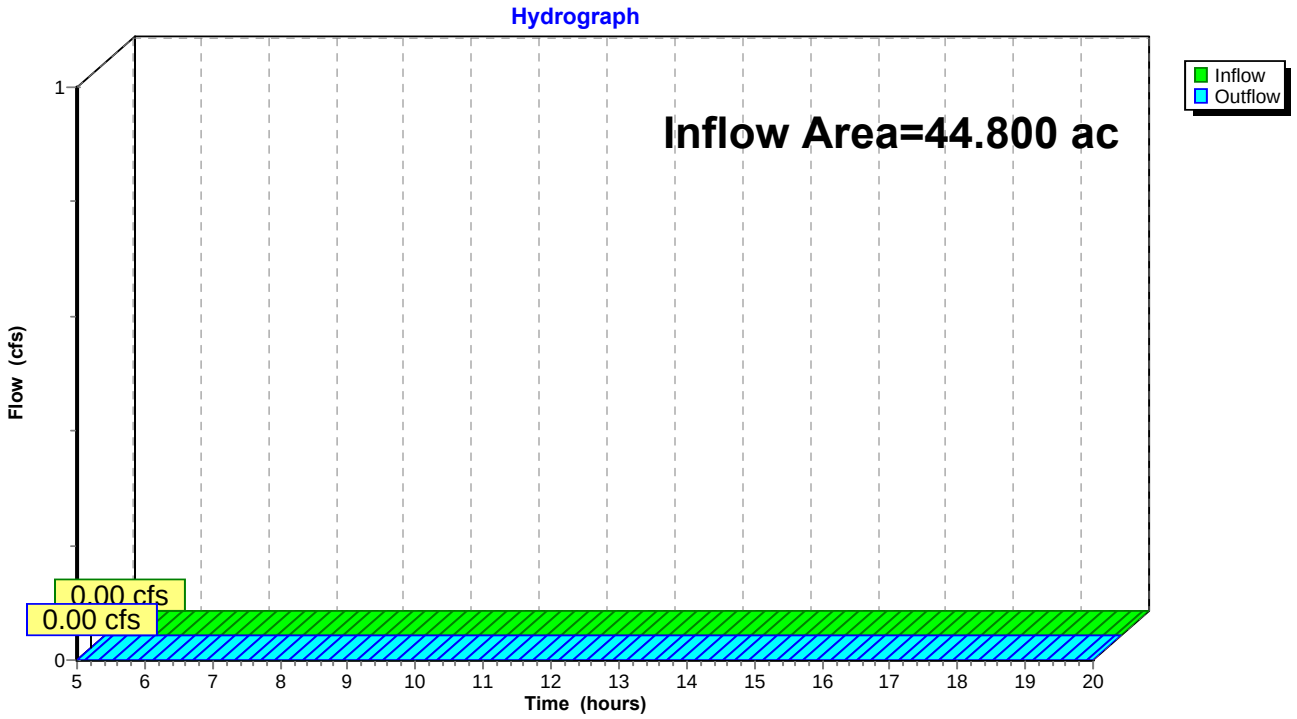
Summary for Reach 4R: Outlfall Developed

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 44.800 ac, 38.79% Impervious, Inflow Depth = 0.00" for 1 YR event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: Outlfall Developed



Summary for Pond 3P: Dev Inf Basin

Inflow Area = 44.800 ac, 38.79% Impervious, Inflow Depth > 0.06" for 1 YR event
Inflow = 0.90 cfs @ 12.01 hrs, Volume= 0.239 af
Outflow = 0.67 cfs @ 12.38 hrs, Volume= 0.237 af, Atten= 25%, Lag= 21.9 min
Discarded = 0.67 cfs @ 12.38 hrs, Volume= 0.237 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 4R : Outlfall Developed

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 96.00' @ 12.38 hrs Surf.Area= 1.364 ac Storage= 0.005 af

Plug-Flow detention time= 5.7 min calculated for 0.237 af (99% of inflow)
Center-of-Mass det. time= 3.7 min (920.7 - 917.0)

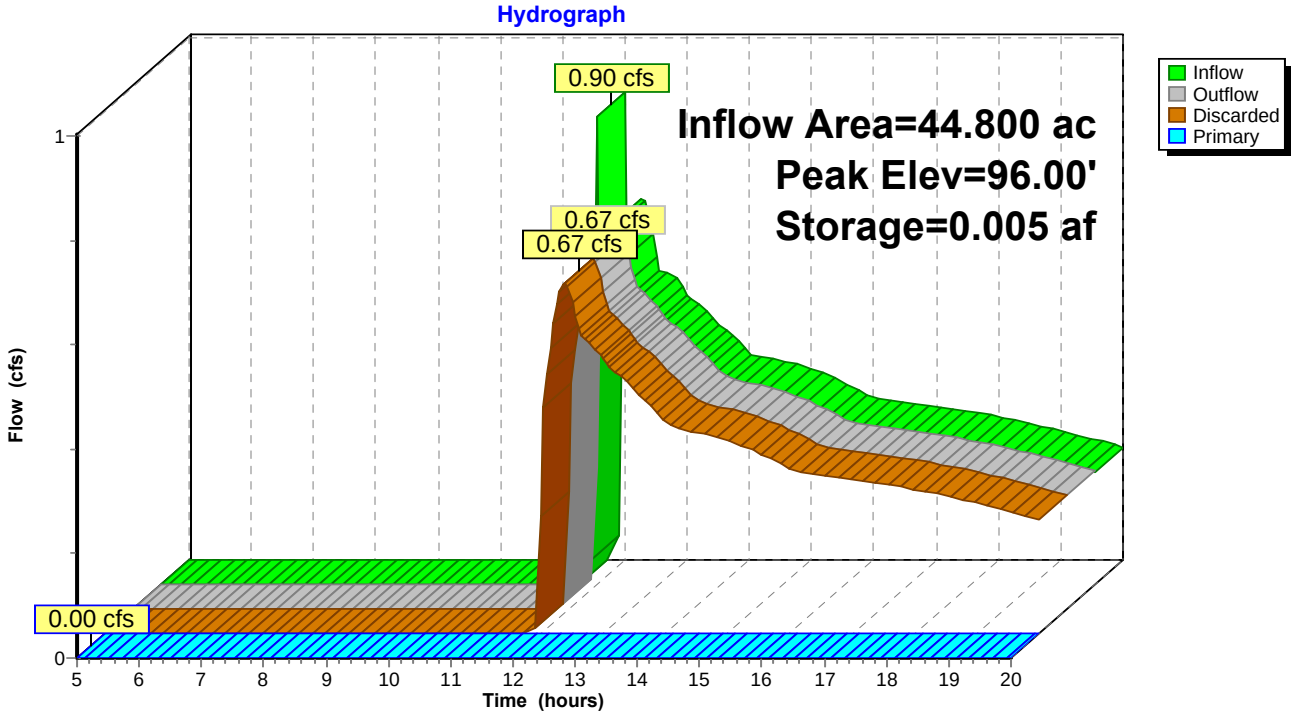
Volume	Invert	Avail.Storage	Storage Description
#1	96.00'	5.944 af	**275.00'D x 4.00'H Vertical Cone/Cylinder Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Discarded	96.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	99.00'	**40.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.0' Crest Height

Discarded OutFlow Max=6.88 cfs @ 12.38 hrs HW=96.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 6.88 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=96.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Dev Inf Basin



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: West Water Developed Runoff Area=44.800 ac 38.79% Impervious Runoff Depth>0.49"
Flow Length=100' Slope=0.0100 '/' Tc=1.9 min CN=62 Runoff=44.40 cfs 1.824 af

Reach 4R: Outlfall Developed Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 3P: Dev Inf Basin Peak Elev=96.31' Storage=0.428 af Inflow=44.40 cfs 1.824 af
Discarded=6.97 cfs 1.817 af Primary=0.00 cfs 0.000 af Outflow=6.97 cfs 1.817 af

Total Runoff Area = 44.800 ac Runoff Volume = 1.824 af Average Runoff Depth = 0.49"
61.21% Pervious = 27.420 ac 38.79% Impervious = 17.380 ac

Summary for Subcatchment 2S: West Water Developed

[49] Hint: Tc<2dt may require smaller dt

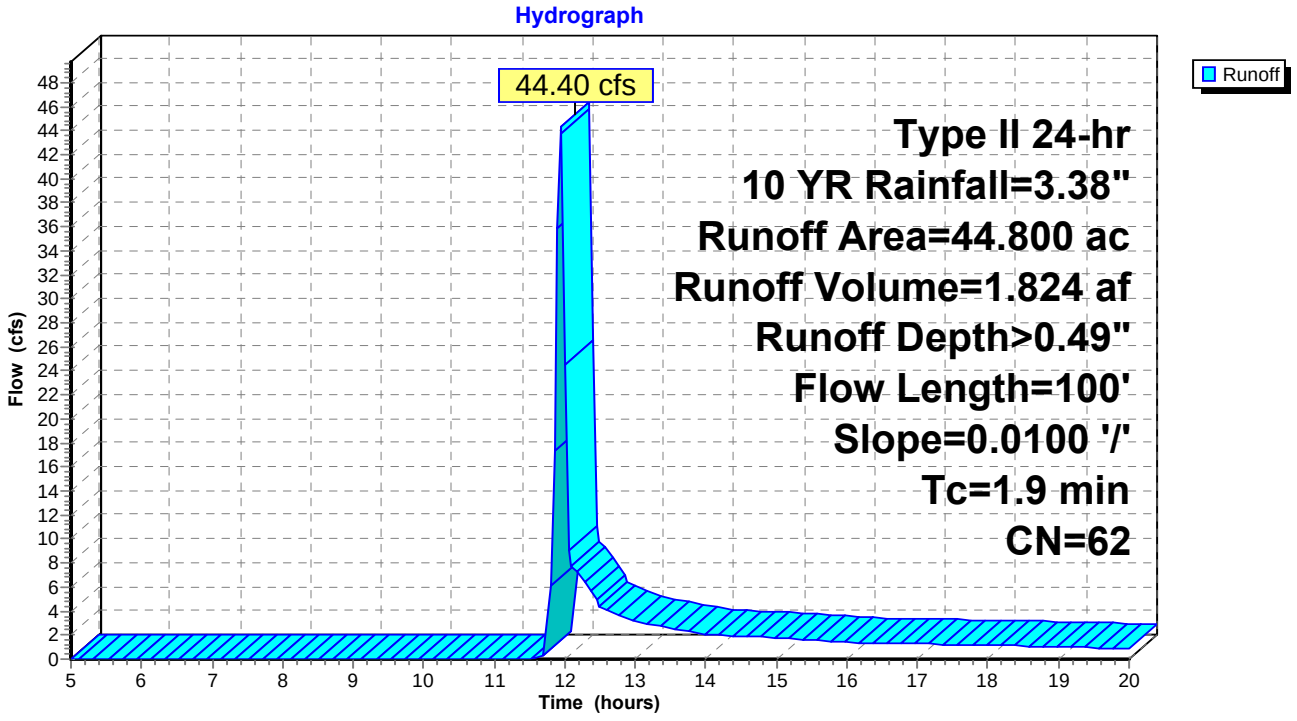
Runoff = 44.40 cfs @ 11.94 hrs, Volume= 1.824 af, Depth> 0.49"
Routed to Pond 3P : Dev Inf Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YR Rainfall=3.38"

Area (ac)	CN	Description
17.380	98	Paved parking, HSG A
27.420	39	>75% Grass cover, Good, HSG A
44.800	62	Weighted Average
27.420		61.21% Pervious Area
17.380		38.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.89		**Sheet Flow, Parking Lot** Smooth surfaces n= 0.011 P2= 2.32"

Subcatchment 2S: West Water Developed



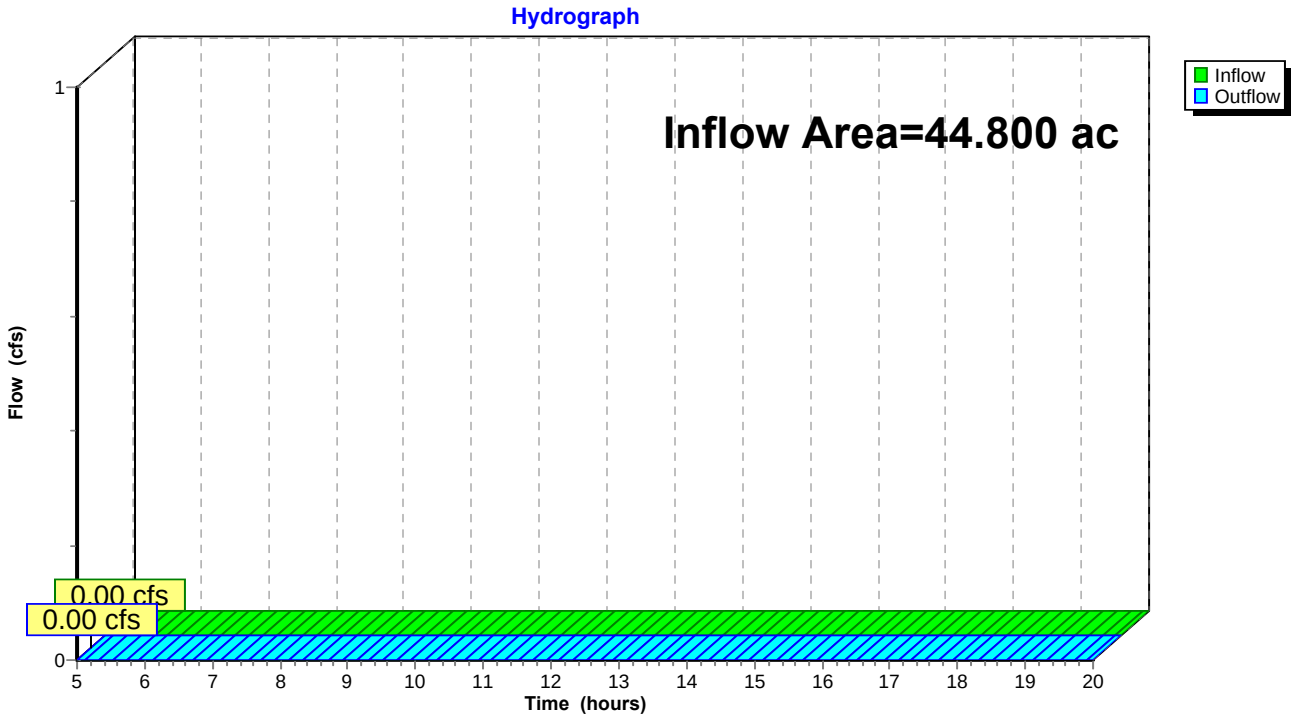
Summary for Reach 4R: Outlfall Developed

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 44.800 ac, 38.79% Impervious, Inflow Depth = 0.00" for 10 YR event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: Outlfall Developed



Summary for Pond 3P: Dev Inf Basin

Inflow Area = 44.800 ac, 38.79% Impervious, Inflow Depth > 0.49" for 10 YR event
Inflow = 44.40 cfs @ 11.94 hrs, Volume= 1.824 af
Outflow = 6.97 cfs @ 12.21 hrs, Volume= 1.817 af, Atten= 84%, Lag= 16.3 min
Discarded = 6.97 cfs @ 12.21 hrs, Volume= 1.817 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 4R : Outlfall Developed

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 96.31' @ 12.21 hrs Surf.Area= 1.382 ac Storage= 0.428 af

Plug-Flow detention time= 19.3 min calculated for 1.817 af (100% of inflow)
Center-of-Mass det. time= 18.0 min (853.4 - 835.4)

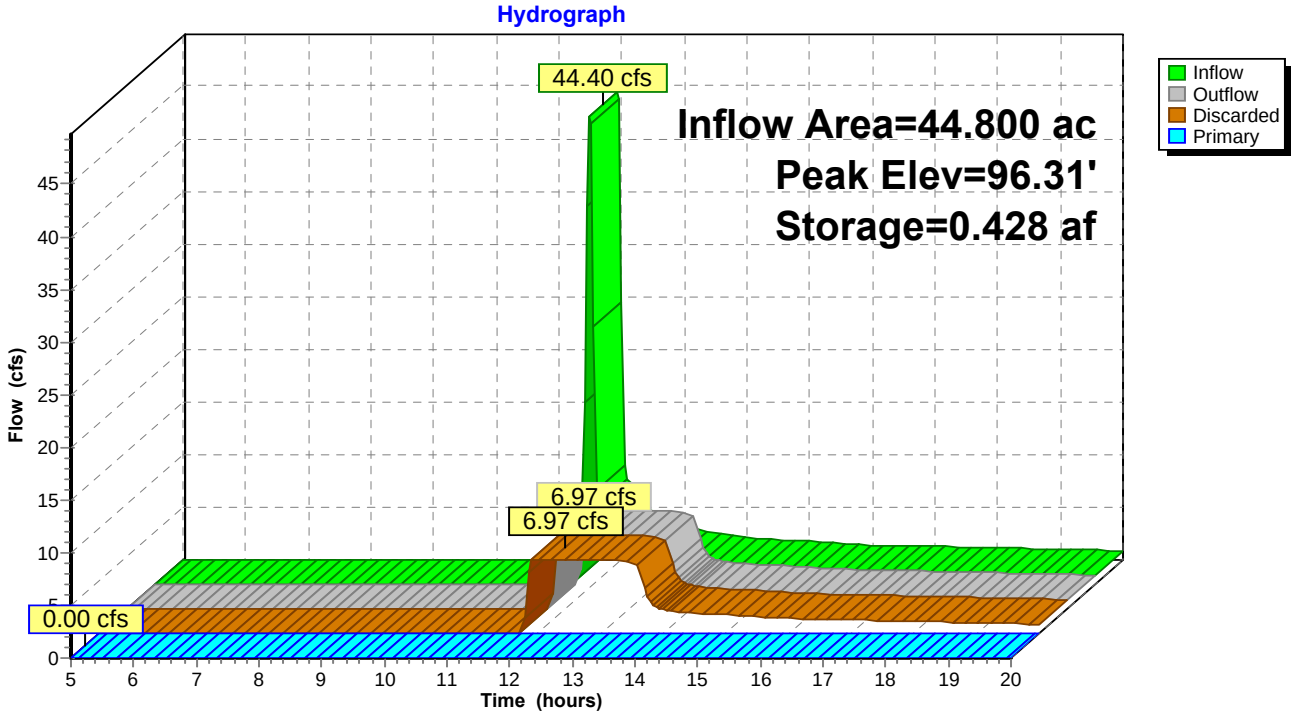
Volume	Invert	Avail.Storage	Storage Description
#1	96.00'	5.944 af	**275.00'D x 4.00'H Vertical Cone/Cylinder Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Discarded	96.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	99.00'	**40.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.0' Crest Height

Discarded OutFlow Max=6.97 cfs @ 12.21 hrs HW=96.31' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 6.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=96.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Dev Inf Basin



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: West Water Developed Runoff Area=44.800 ac 38.79% Impervious Runoff Depth>1.76"
Flow Length=100' Slope=0.0100 '/' Tc=1.9 min CN=62 Runoff=170.73 cfs 6.585 af

Reach 4R: Outlfall Developed Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 3P: Dev Inf Basin Peak Elev=98.27' Storage=3.250 af Inflow=170.73 cfs 6.585 af
Discarded=7.57 cfs 5.255 af Primary=0.00 cfs 0.000 af Outflow=7.57 cfs 5.255 af

Total Runoff Area = 44.800 ac Runoff Volume = 6.585 af Average Runoff Depth = 1.76"
61.21% Pervious = 27.420 ac 38.79% Impervious = 17.380 ac

Summary for Subcatchment 2S: West Water Developed

[49] Hint: Tc<2dt may require smaller dt

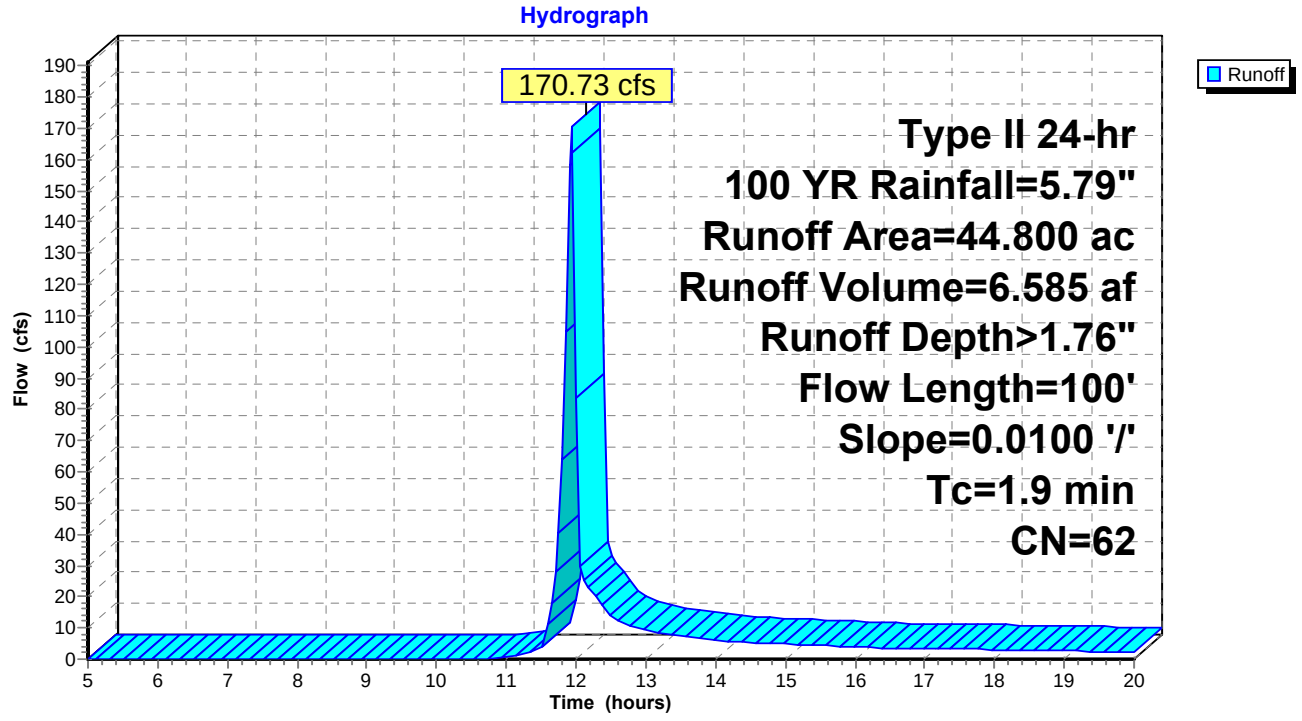
Runoff = 170.73 cfs @ 11.93 hrs, Volume= 6.585 af, Depth> 1.76"
Routed to Pond 3P : Dev Inf Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 YR Rainfall=5.79"

Area (ac)	CN	Description
17.380	98	Paved parking, HSG A
27.420	39	>75% Grass cover, Good, HSG A
44.800	62	Weighted Average
27.420		61.21% Pervious Area
17.380		38.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.89		**Sheet Flow, Parking Lot** Smooth surfaces n= 0.011 P2= 2.32"

Subcatchment 2S: West Water Developed



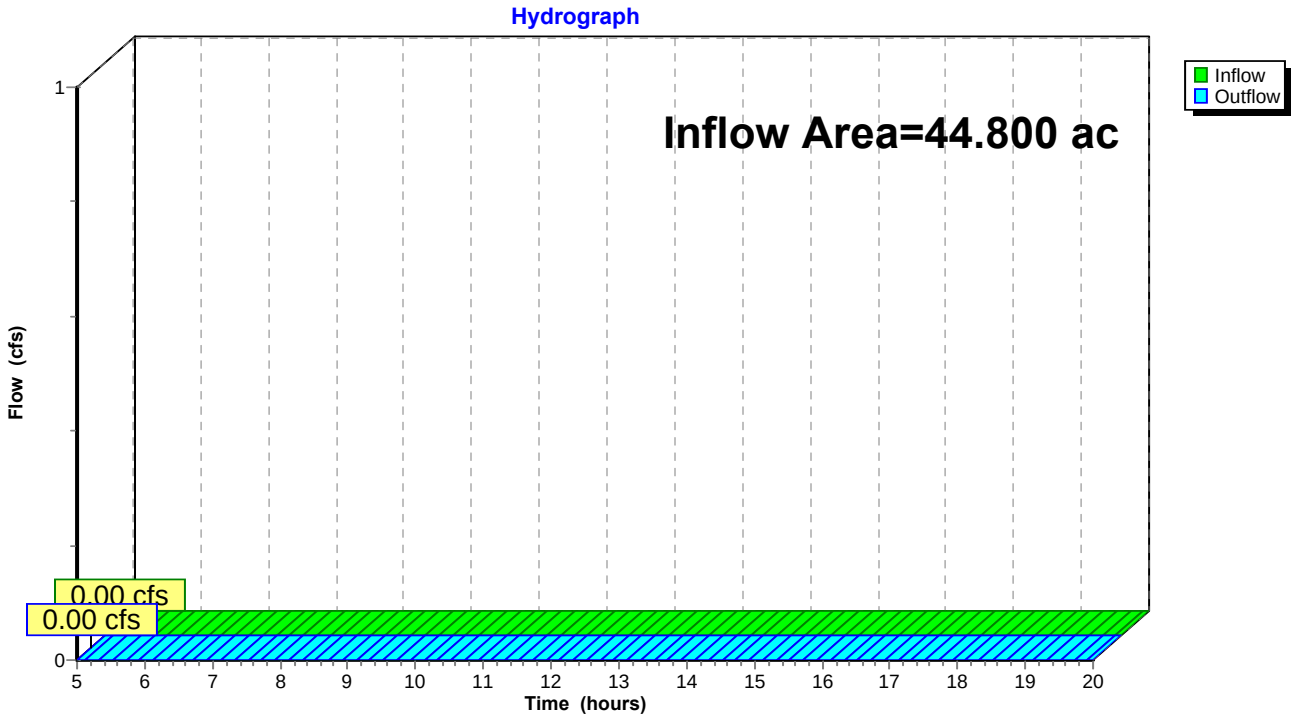
Summary for Reach 4R: Outlfall Developed

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 44.800 ac, 38.79% Impervious, Inflow Depth = 0.00" for 100 YR event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: Outlfall Developed



Summary for Pond 3P: Dev Inf Basin

Inflow Area = 44.800 ac, 38.79% Impervious, Inflow Depth > 1.76" for 100 YR event
Inflow = 170.73 cfs @ 11.93 hrs, Volume= 6.585 af
Outflow = 7.57 cfs @ 13.44 hrs, Volume= 5.255 af, Atten= 96%, Lag= 90.6 min
Discarded = 7.57 cfs @ 13.44 hrs, Volume= 5.255 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 4R : Outlfall Developed

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 98.27' @ 13.44 hrs Surf.Area= 1.502 ac Storage= 3.250 af

Plug-Flow detention time= 197.0 min calculated for 5.238 af (80% of inflow)
Center-of-Mass det. time= 138.6 min (942.5 - 803.9)

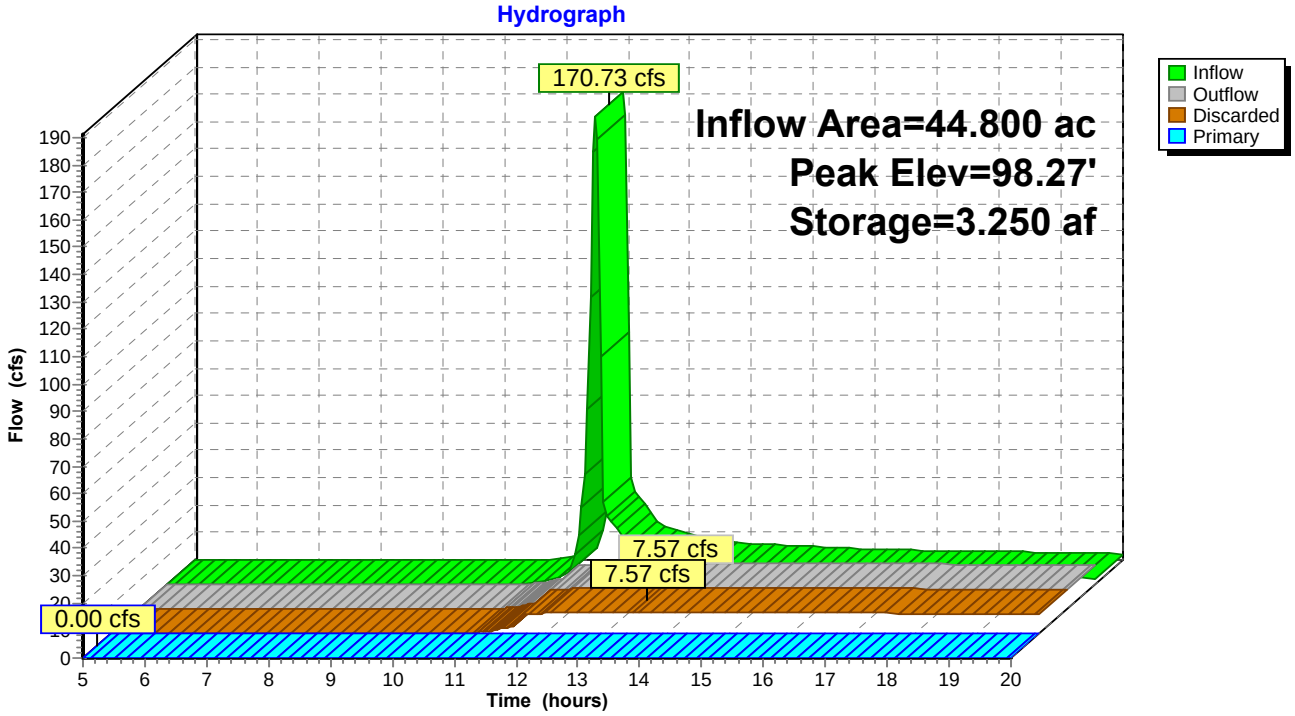
Volume	Invert	Avail.Storage	Storage Description
#1	96.00'	5.944 af	**275.00'D x 4.00'H Vertical Cone/Cylinder Z=3.0**

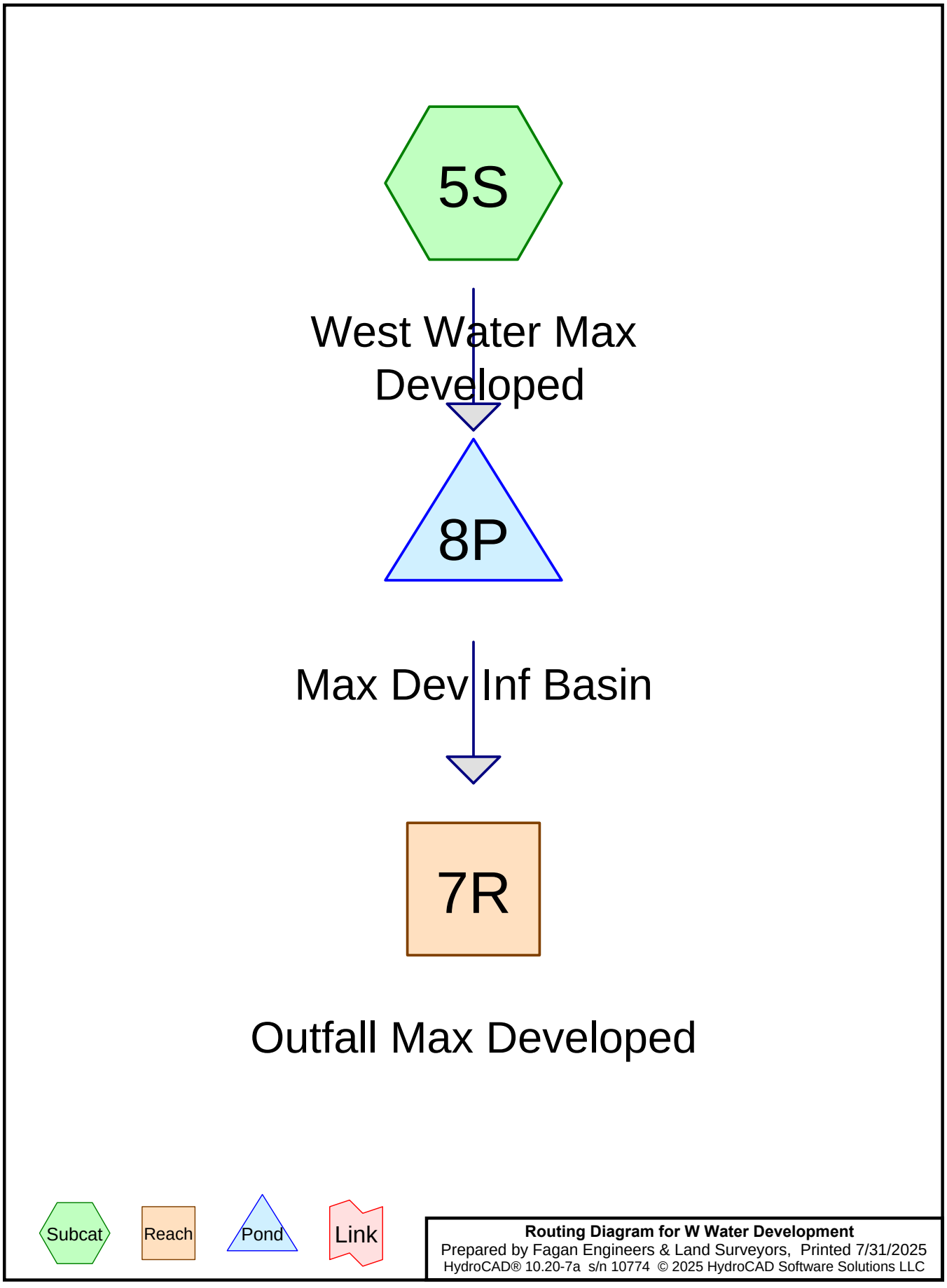
Device	Routing	Invert	Outlet Devices
#1	Discarded	96.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	99.00'	**40.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.0' Crest Height

Discarded OutFlow Max=7.57 cfs @ 13.44 hrs HW=98.27' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 7.57 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=96.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Dev Inf Basin





Routing Diagram for W Water Development
Prepared by Fagan Engineers & Land Surveyors, Printed 7/31/2025
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W Water Development

Prepared by Fagan Engineers & Land Surveyors

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1 YR	Type II 24-hr		Default	24.00	1	1.98	2
2	10 YR	Type II 24-hr		Default	24.00	1	3.38	2
3	100 YR	Type II 24-hr		Default	24.00	1	5.79	2

W Water Development

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
22.010	39	>75% Grass cover, Good, HSG A (5S)
22.790	98	Paved parking, HSG A (5S)
44.800	**69**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
44.800	HSG A	5S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
44.800		**TOTAL AREA**

W Water Development

Prepared by Fagan Engineers & Land Surveyors

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
22.010	0.000	0.000	0.000	0.000	22.010	>75% Grass cover, Good	5S
22.790	0.000	0.000	0.000	0.000	22.790	Paved parking	5S
44.800	**0.000**	**0.000**	**0.000**	**0.000**	**44.800**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 5S: West Water Max Runoff Area=44.800 ac 50.87% Impervious Runoff Depth>0.18"
Flow Length=100' Slope=0.0100 '/' Tc=1.9 min CN=69 Runoff=13.53 cfs 0.663 af

Reach 7R: Outfall Max Developed Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 8P: Max Dev Inf Basin Peak Elev=96.03' Storage=0.063 af Inflow=13.53 cfs 0.663 af
Discarded=7.91 cfs 0.660 af Primary=0.00 cfs 0.000 af Outflow=7.91 cfs 0.660 af

Total Runoff Area = 44.800 ac Runoff Volume = 0.663 af Average Runoff Depth = 0.18"
49.13% Pervious = 22.010 ac 50.87% Impervious = 22.790 ac

Summary for Subcatchment 5S: West Water Max Developed

[49] Hint: Tc<2dt may require smaller dt

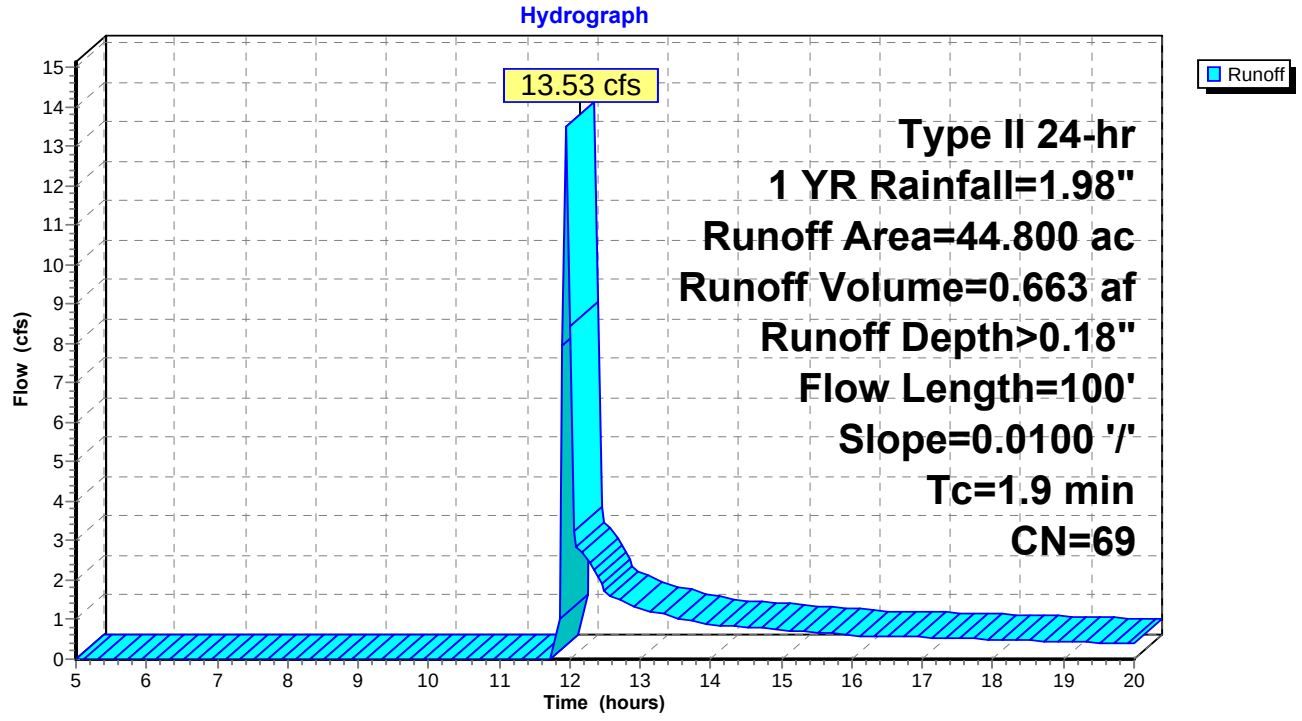
Runoff = 13.53 cfs @ 11.95 hrs, Volume= 0.663 af, Depth> 0.18"
Routed to Pond 8P : Max Dev Inf Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1 YR Rainfall=1.98"

Area (ac)	CN	Description
22.790	98	Paved parking, HSG A
22.010	39	>75% Grass cover, Good, HSG A
44.800	69	Weighted Average
22.010		49.13% Pervious Area
22.790		50.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.89		**Sheet Flow, Parking Lot** Smooth surfaces n= 0.011 P2= 2.32"

Subcatchment 5S: West Water Max Developed



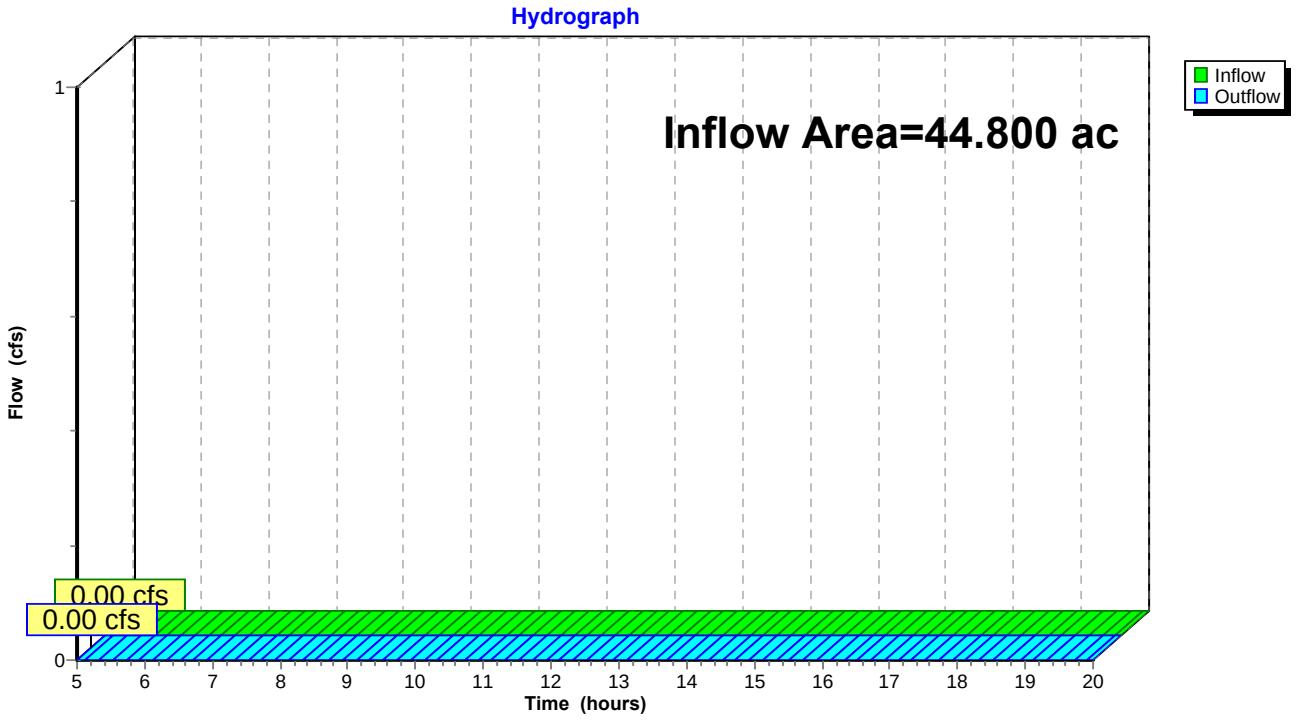
Summary for Reach 7R: Outfall Max Developed

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 44.800 ac, 50.87% Impervious, Inflow Depth = 0.00" for 1 YR event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 7R: Outfall Max Developed



Summary for Pond 8P: Max Dev Inf Basin

Inflow Area = 44.800 ac, 50.87% Impervious, Inflow Depth > 0.18" for 1 YR event
Inflow = 13.53 cfs @ 11.95 hrs, Volume= 0.663 af
Outflow = 7.91 cfs @ 12.01 hrs, Volume= 0.660 af, Atten= 42%, Lag= 3.6 min
Discarded = 7.91 cfs @ 12.01 hrs, Volume= 0.660 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 7R : Outfall Max Developed

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 96.03' @ 12.01 hrs Surf.Area= 1.907 ac Storage= 0.063 af

Plug-Flow detention time= 5.7 min calculated for 0.660 af (100% of inflow)
Center-of-Mass det. time= 4.2 min (862.3 - 858.1)

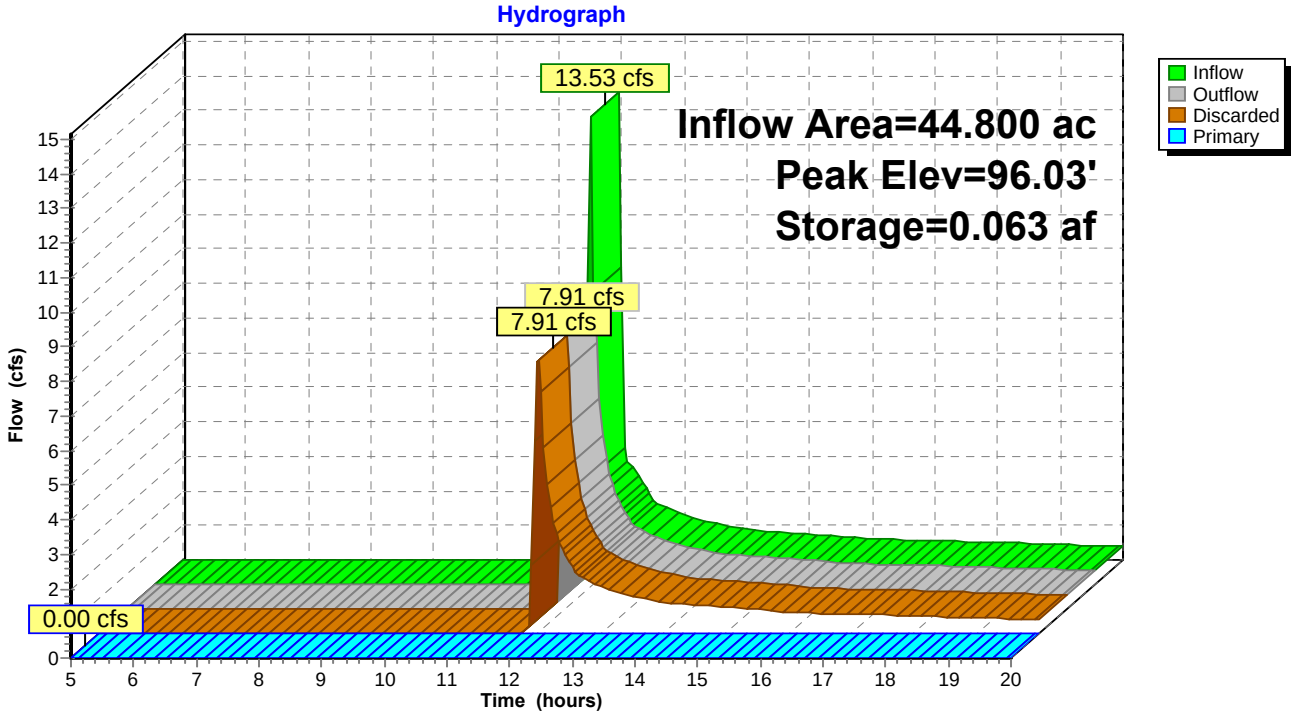
Volume	Invert	Avail.Storage	Storage Description
#1	96.00'	8.194 af	**325.00'D x 4.00'H Vertical Cone/Cylinder Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Discarded	96.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	99.00'	**40.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.0' Crest Height

Discarded OutFlow Max=9.61 cfs @ 12.01 hrs HW=96.03' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 9.61 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=96.00' (Free Discharge)
↑**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 8P: Max Dev Inf Basin



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 5S: West Water Max Runoff Area=44.800 ac 50.87% Impervious Runoff Depth>0.79"
Flow Length=100' Slope=0.0100 '/' Tc=1.9 min CN=69 Runoff=76.16 cfs 2.947 af

Reach 7R: Outfall Max Developed Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 8P: Max Dev Inf Basin Peak Elev=96.48' Storage=0.921 af Inflow=76.16 cfs 2.947 af
Discarded=9.77 cfs 2.938 af Primary=0.00 cfs 0.000 af Outflow=9.77 cfs 2.938 af

Total Runoff Area = 44.800 ac Runoff Volume = 2.947 af Average Runoff Depth = 0.79"
49.13% Pervious = 22.010 ac 50.87% Impervious = 22.790 ac

Summary for Subcatchment 5S: West Water Max Developed

[49] Hint: Tc<2dt may require smaller dt

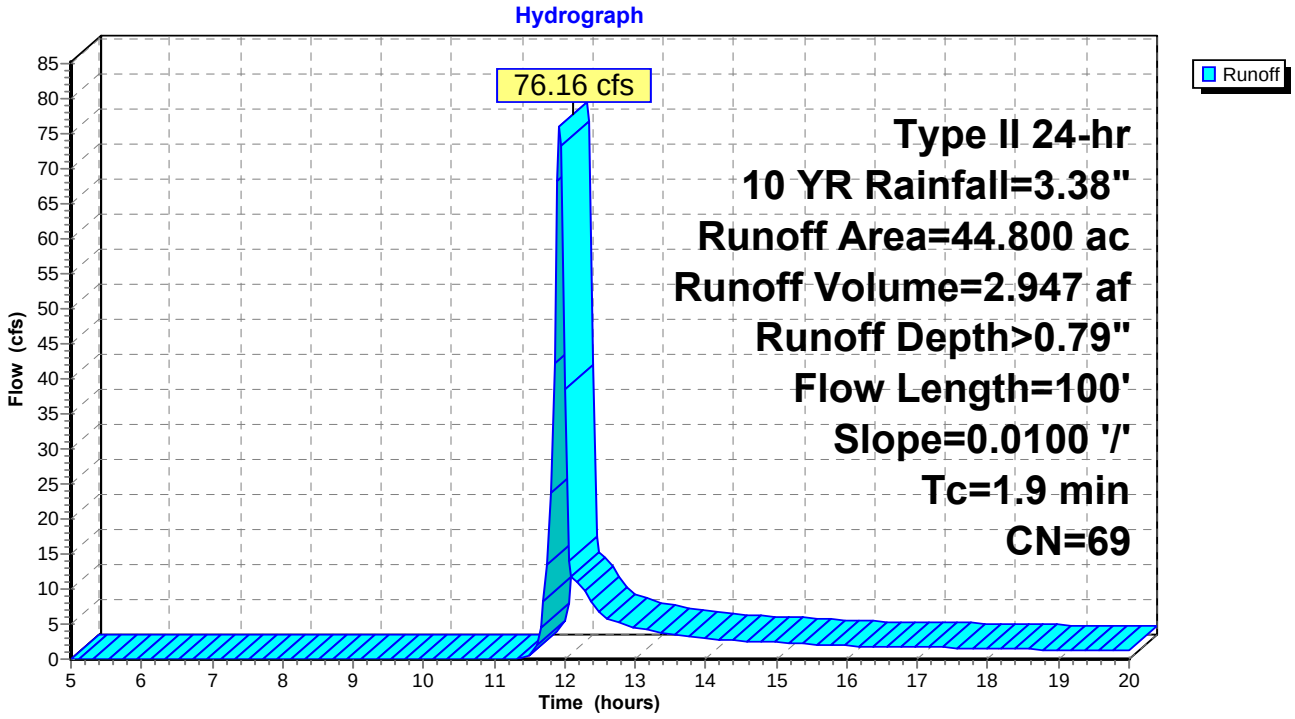
Runoff = 76.16 cfs @ 11.93 hrs, Volume= 2.947 af, Depth> 0.79"
Routed to Pond 8P : Max Dev Inf Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YR Rainfall=3.38"

Area (ac)	CN	Description
22.790	98	Paved parking, HSG A
22.010	39	>75% Grass cover, Good, HSG A
44.800	69	Weighted Average
22.010		49.13% Pervious Area
22.790		50.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.89		**Sheet Flow, Parking Lot** Smooth surfaces n= 0.011 P2= 2.32"

Subcatchment 5S: West Water Max Developed



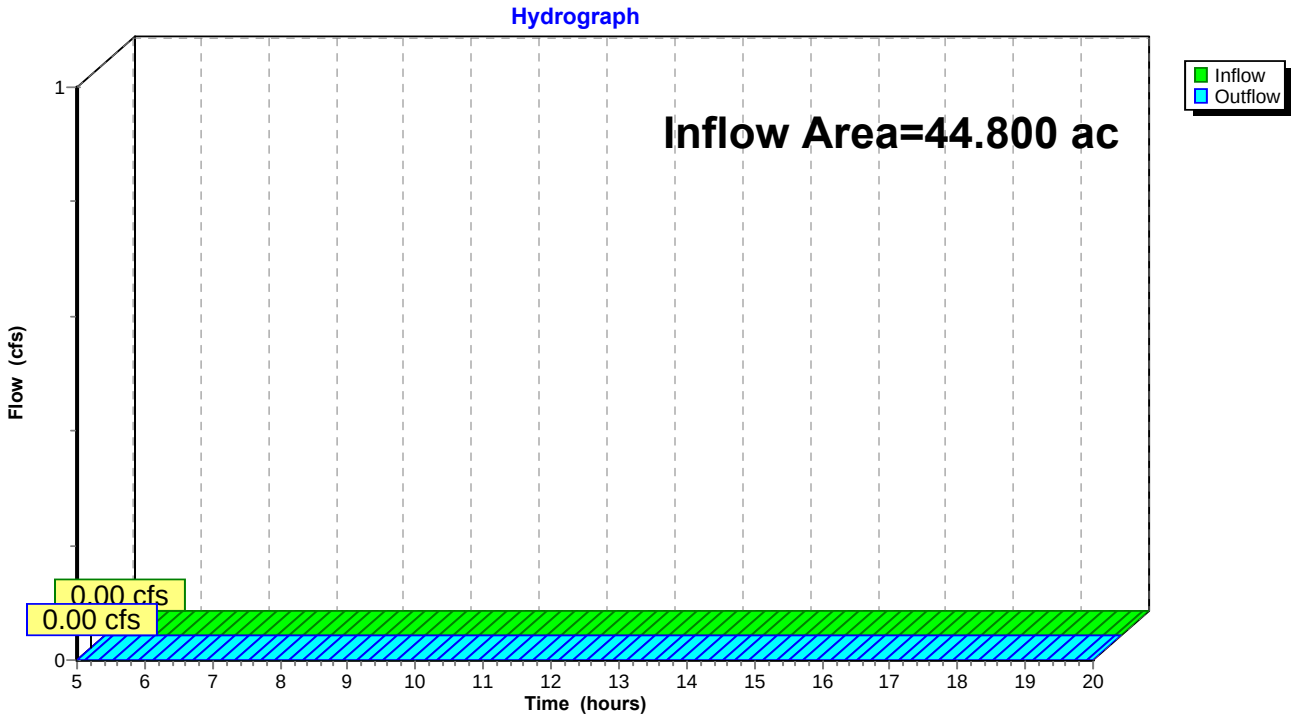
Summary for Reach 7R: Outfall Max Developed

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 44.800 ac, 50.87% Impervious, Inflow Depth = 0.00" for 10 YR event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 7R: Outfall Max Developed



Summary for Pond 8P: Max Dev Inf Basin

Inflow Area = 44.800 ac, 50.87% Impervious, Inflow Depth > 0.79" for 10 YR event
Inflow = 76.16 cfs @ 11.93 hrs, Volume= 2.947 af
Outflow = 9.77 cfs @ 12.26 hrs, Volume= 2.938 af, Atten= 87%, Lag= 20.0 min
Discarded = 9.77 cfs @ 12.26 hrs, Volume= 2.938 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 7R : Outfall Max Developed

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 96.48' @ 12.26 hrs Surf.Area= 1.938 ac Storage= 0.921 af

Plug-Flow detention time= 31.4 min calculated for 2.929 af (99% of inflow)
Center-of-Mass det. time= 30.2 min (845.1 - 814.9)

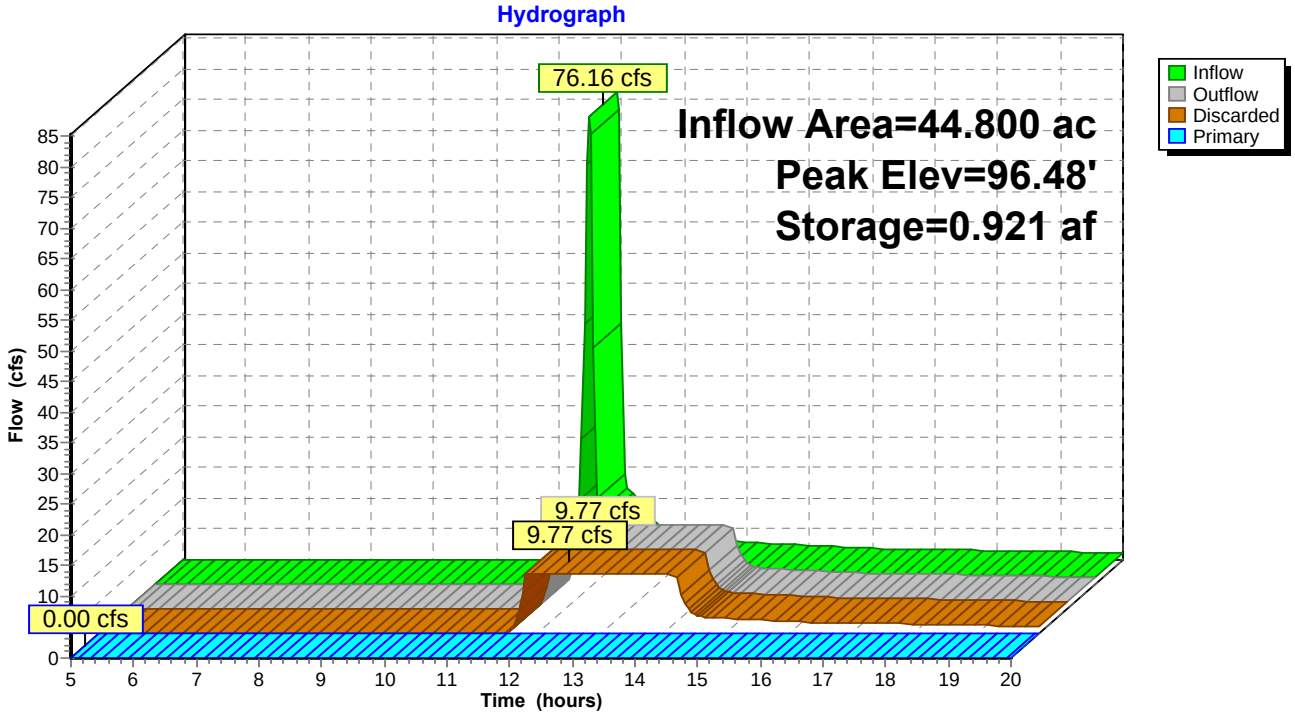
Volume	Invert	Avail.Storage	Storage Description
#1	96.00'	8.194 af	**325.00'D x 4.00'H Vertical Cone/Cylinder Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Discarded	96.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	99.00'	**40.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.0' Crest Height

Discarded OutFlow Max=9.77 cfs @ 12.26 hrs HW=96.48' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 9.77 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=96.00' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 8P: Max Dev Inf Basin



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 5S: West Water Max Runoff Area=44.800 ac 50.87% Impervious Runoff Depth>2.34"
Flow Length=100' Slope=0.0100 '/' Tc=1.9 min CN=69 Runoff=218.80 cfs 8.725 af

Reach 7R: Outfall Max Developed Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 8P: Max Dev Inf Basin Peak Elev=98.18' Storage=4.318 af Inflow=218.80 cfs 8.725 af
Discarded=10.39 cfs 7.466 af Primary=0.00 cfs 0.000 af Outflow=10.39 cfs 7.466 af

Total Runoff Area = 44.800 ac Runoff Volume = 8.725 af Average Runoff Depth = 2.34"
49.13% Pervious = 22.010 ac 50.87% Impervious = 22.790 ac

Summary for Subcatchment 5S: West Water Max Developed

[49] Hint: Tc<2dt may require smaller dt

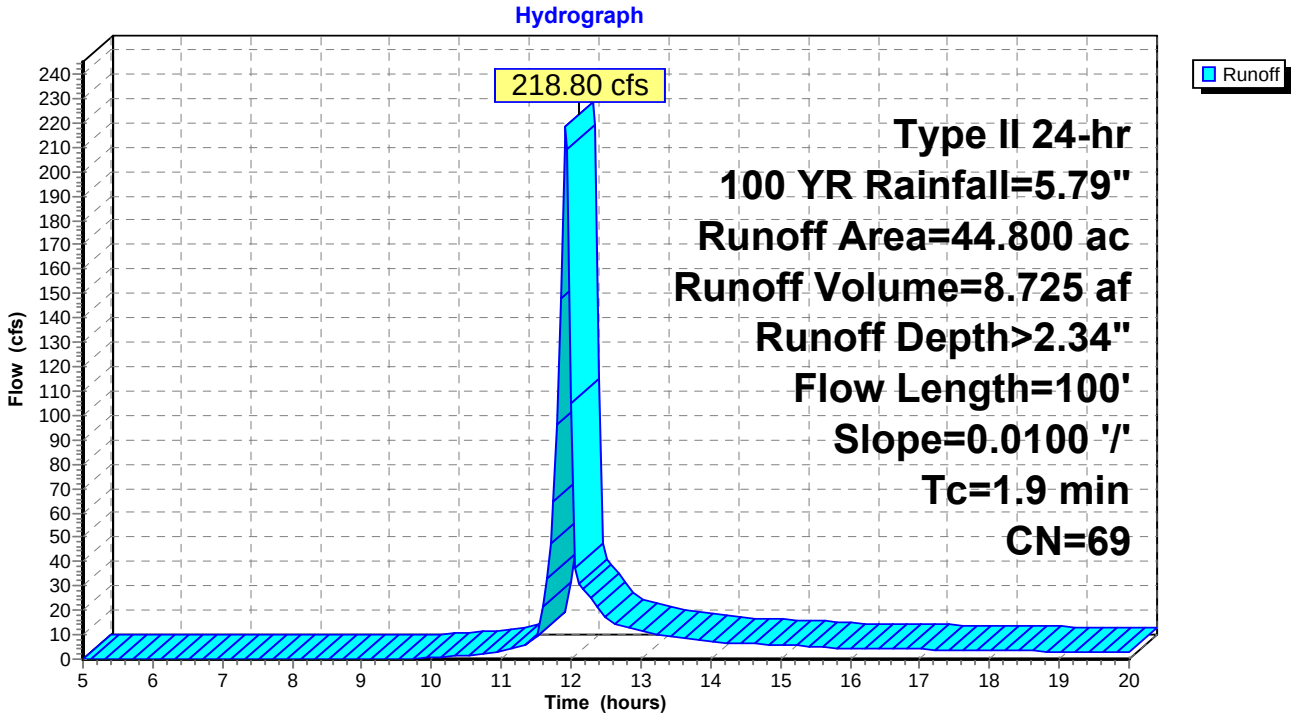
Runoff = 218.80 cfs @ 11.92 hrs, Volume= 8.725 af, Depth> 2.34"
Routed to Pond 8P : Max Dev Inf Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 YR Rainfall=5.79"

Area (ac)	CN	Description
22.790	98	Paved parking, HSG A
22.010	39	>75% Grass cover, Good, HSG A
44.800	69	Weighted Average
22.010		49.13% Pervious Area
22.790		50.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.89		**Sheet Flow, Parking Lot** Smooth surfaces n= 0.011 P2= 2.32"

Subcatchment 5S: West Water Max Developed



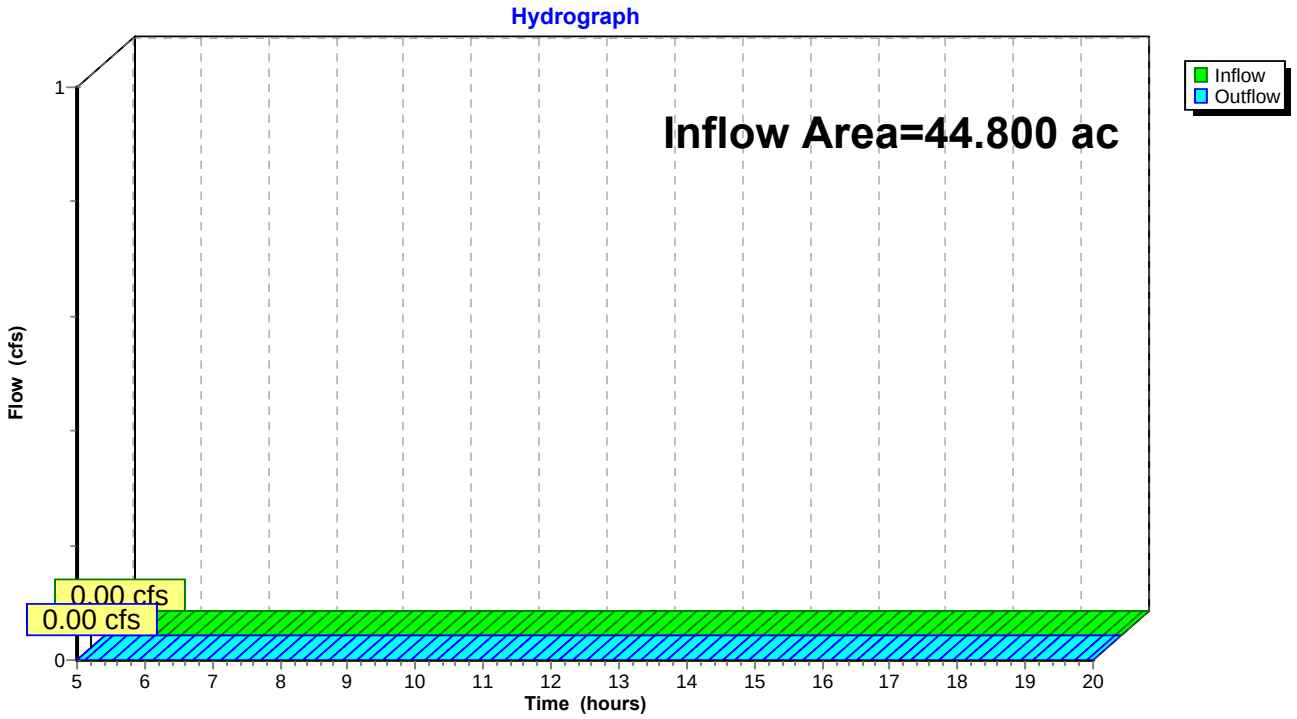
Summary for Reach 7R: Outfall Max Developed

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 44.800 ac, 50.87% Impervious, Inflow Depth = 0.00" for 100 YR event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 7R: Outfall Max Developed



Summary for Pond 8P: Max Dev Inf Basin

Inflow Area = 44.800 ac, 50.87% Impervious, Inflow Depth > 2.34" for 100 YR event
Inflow = 218.80 cfs @ 11.92 hrs, Volume= 8.725 af
Outflow = 10.39 cfs @ 13.16 hrs, Volume= 7.466 af, Atten= 95%, Lag= 74.3 min
Discarded = 10.39 cfs @ 13.16 hrs, Volume= 7.466 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 7R : Outfall Max Developed

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 98.18' @ 13.16 hrs Surf.Area= 2.061 ac Storage= 4.318 af

Plug-Flow detention time= 186.7 min calculated for 7.466 af (86% of inflow)
Center-of-Mass det. time= 141.1 min (932.5 - 791.4)

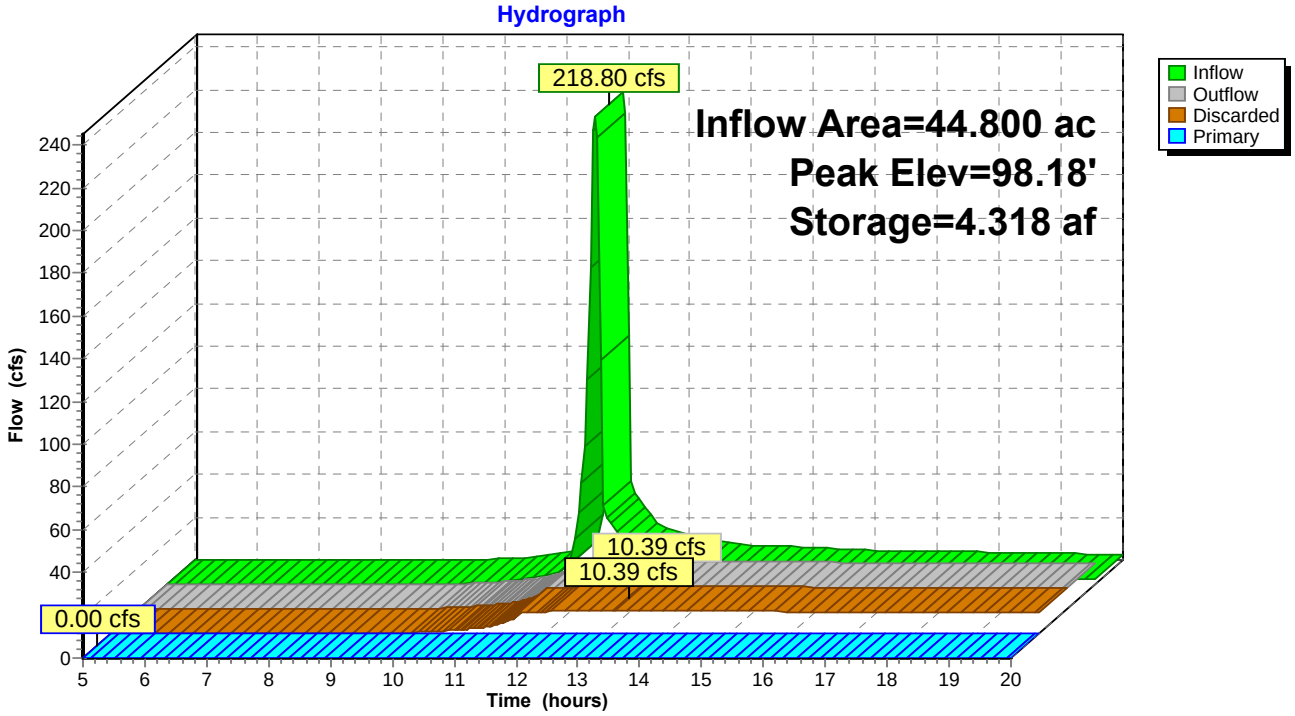
Volume	Invert	Avail.Storage	Storage Description
#1	96.00'	8.194 af	**325.00'D x 4.00'H Vertical Cone/Cylinder Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Discarded	96.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	99.00'	**40.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.0' Crest Height

Discarded OutFlow Max=10.39 cfs @ 13.16 hrs HW=98.18' (Free Discharge)
↑└**1=Exfiltration** (Exfiltration Controls 10.39 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=96.00' (Free Discharge)
↑└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 8P: Max Dev Inf Basin



Appendix E

Water Quality, and Conveyance Sizing

Step 2 - Calculate Water Quality Volume

Is this project subject to Section 4.3 of the NYS Design Manual for Enhanced Phosphorus Removal?	No
What is the nature of this construction project?	New Construction

Design Point:	1	
P=	1.00	inches

Enter 90% Rainfall Event as P

Calculate Required WQv

Drainage Area Number	Contributing Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (cf)	SMP Description
1	44.80	17.38	39	0.40	64,912	Infiltration Basin
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Total	44.80	17.38	39	0.40	**64912**	**Required WQv**

Step 4 - Calcuate Minimum RRv Required

Enter the Soils Data for the site		
Hydrologic Soil Group	Acres	S
A	17.38	55%
B	0.00	40%
C	0.00	30%
D	0.00	20%
Total Area	17.38	

Calculate the Minimum RRv		
S =	**0.55**	
Impervious =	17.38	*acres*
Precipitation	1.00	*inches*
Rv	0.95	
Minimum RRv	**0.757**	***af***
	32975	cf

Infiltration Basin (I-2)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
1	44.80	3.58	39	0.40	64,912	1.00	Infiltration Basin

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	5	
Is the contributing area to the practice an "Infiltration Restricted" stormwater hotspot?	No	
Is the contributing area to the practice an "Infiltration Prohibited" stormwater hotspot?	No	
Maximum contributing area (acres)	45	
Is the contributing area greater than the maximum allowed contributing area?	No	
Enter depth to seasonal high water table (ft)	10	
Enter depth to bedrock (ft)	10	
Enter pretreatment volume provided (cf)	16300	
Enter depth of freeboard (ft)	1	
Enter depth of basin (ft)	4	
Enter slope of maintenance access (%)	1	
Enter width of maintenance access (ft)	12	

Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	64912	cf	
Basin depth	db	4.0	ft	
Required Surface Area	Ab	16,228	sf	
Enter Surface Area Provided	Ab	16500	sf	

Determine Runoff Reduction		
RRv Provided	**64,912**	***cf***

Step 2 - Calculate Water Quality Volume

Is this project subject to Section 4.3 of the NYS Design Manual for Enhanced Phosphorus Removal?	No
What is the nature of this construction project?	New Construction

Design Point:	1	
P=	1.00	inches

Enter 90% Rainfall Event as P

Calculate Required WQv

Drainage Area Number	Contributing Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (cf)	SMP Description
1	44.80	22.79	51	0.51	82,586	Infiltration Basin
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Total	44.80	22.79	51	0.51	**82586**	**Required WQv**

Step 4 - Calcuate Minimum RRv Required

Enter the Soils Data for the site		
Hydrologic Soil Group	Acres	S
A	22.79	55%
B	0.00	40%
C	0.00	30%
D	0.00	20%
Total Area	22.79	

Calculate the Minimum RRv		
S =	**0.55**	
Impervious =	22.79	*acres*
Precipitation	1.00	*inches*
Rv	0.95	
Minimum RRv	**0.992**	***af***
	43212	cf

Infiltration Basin (I-2)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
1	44.80	3.58	51	0.51	82,586	1.00	Infiltration Basin

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	5	
Is the contributing area to the practice an "Infiltration Restricted" stormwater hotspot?	No	
Is the contributing area to the practice an "Infiltration Prohibited" stormwater hotspot?	No	
Maximum contributing area (acres)	45	
Is the contributing area greater than the maximum allowed contributing area?	No	
Enter depth to seasonal high water table (ft)	10	
Enter depth to bedrock (ft)	10	
Enter pretreatment volume provided (cf)	20750	
Enter depth of freeboard (ft)	1	
Enter depth of basin (ft)	4	
Enter slope of maintenance access (%)	1	
Enter width of maintenance access (ft)	12	

Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	82586	cf	
Basin depth	db	4.0	ft	
Required Surface Area	Ab	20,647	sf	
Enter Surface Area Provided	Ab	20750	sf	

Determine Runoff Reduction		
RRv Provided	**82,586**	***cf***

Appendix F

USDA NRCS Soil Survey

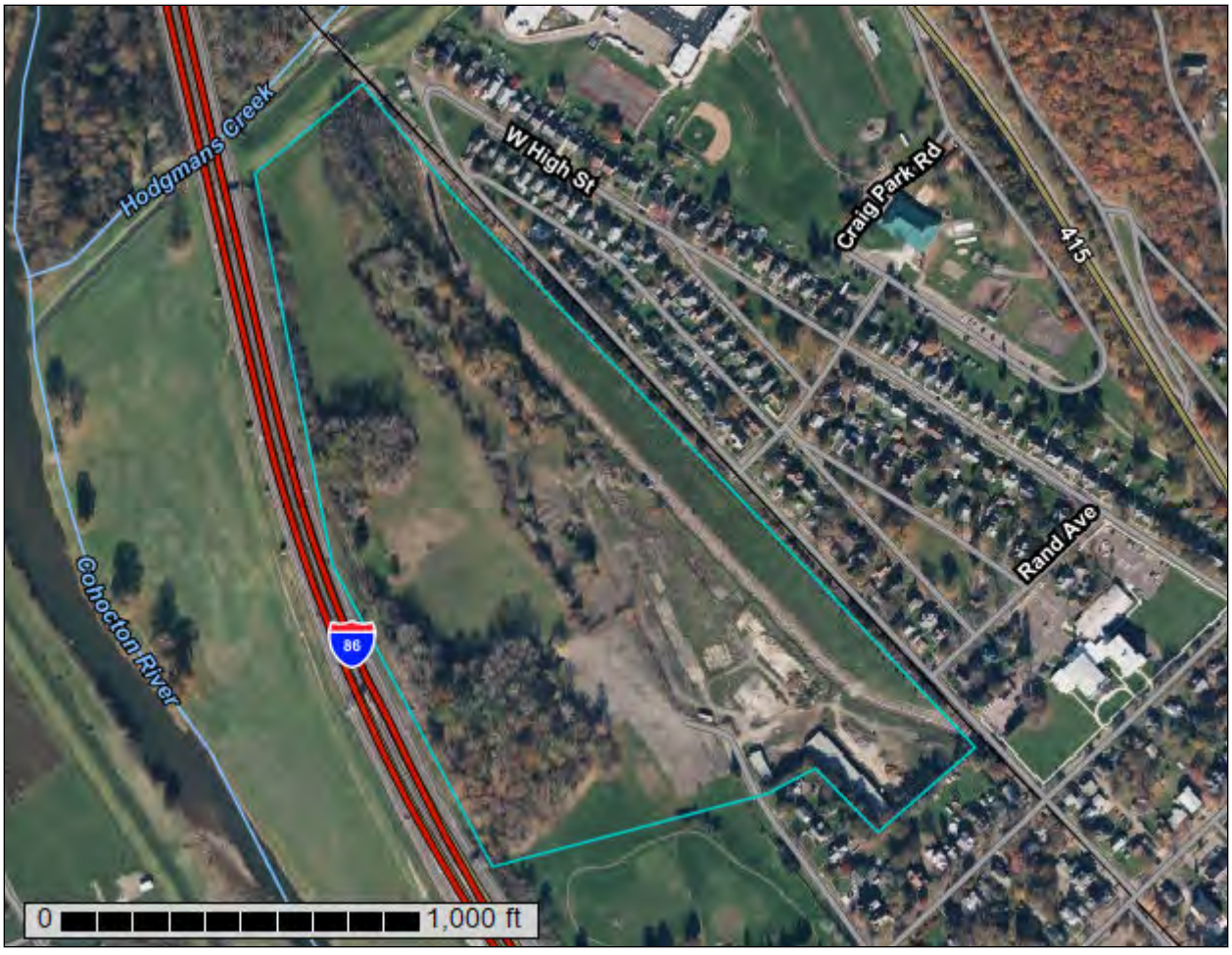
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Steuben County, New York



August 4, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:4,750 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Steuben County, New York
Survey Area Data: Version 21, Aug 25, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 3, 2021—Nov 7, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CF	Cut and fill land	32.5	68.9%
Tg	Tioga silt loam	14.6	31.1%
Totals for Area of Interest		**47.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Steuben County, New York

CF—Cut and fill land

Map Unit Setting

National map unit symbol: 9wrk
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 39 inches
Mean annual air temperature: 43 to 48 degrees F
Frost-free period: 110 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

Cut and fill land and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cut And Fill Land

Typical profile

H1 - 0 to 8 inches: channery silt loam
H2 - 8 to 60 inches: channery silt loam

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Alden

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Collamer

Percent of map unit: 5 percent
Hydric soil rating: No

Lackawanna

Percent of map unit: 5 percent
Hydric soil rating: No

Scio

Percent of map unit: 5 percent
Hydric soil rating: No

Fremont

Percent of map unit: 5 percent
Hydric soil rating: No

Tg—Tioga silt loam

Map Unit Setting

National map unit symbol: 9wtd
Elevation: 600 to 1,800 feet
Mean annual precipitation: 31 to 39 inches
Mean annual air temperature: 43 to 48 degrees F
Frost-free period: 110 to 155 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Tioga and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tioga

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy alluvium

Typical profile

H1 - 0 to 17 inches: silt loam
H2 - 17 to 28 inches: silt loam
H3 - 28 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: A
Ecological site: F140XY013PA - High Floodplain
Hydric soil rating: No

Minor Components

Alton

Percent of map unit: 5 percent
Hydric soil rating: No

Middlebury

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed soils

Percent of map unit: 5 percent
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix G

NYSDEC *Blue-Book "Lite"*

FINAL

New York State Standards and Specifications for Erosion and Sediment Control

November 2016

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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STANDARD AND SPECIFICATIONS FOR CONCRETE TRUCK WASHOUT

Definition & Scope

A temporary excavated or above ground lined constructed pit where concrete truck mixers and equipment can be washed after their loads have been discharged, to prevent highly alkaline runoff from entering storm drainage systems or leaching into soil.

Conditions Where Practice Applies

Washout facilities shall be provided for every project where concrete will be poured or otherwise formed on the site. This facility will receive highly alkaline wash water from the cleaning of chutes, mixers, hoppers, vibrators, placing equipment, trowels, and screeds. Under no circumstances will wash water from these operations be allowed to infiltrate into the soil or enter surface waters.

Design Criteria

Capacity: The washout facility should be sized to contain solids, wash water, and rainfall and sized to allow for the evaporation of the wash water and rainfall. Wash water shall be estimated at 7 gallons per chute and 50 gallons per hopper of the concrete pump truck and/or discharging drum. The minimum size shall be 8 feet by 8 feet at the bottom and 2 feet deep. If excavated, the side slopes shall be 2 horizontal to 1 vertical.

Location: Locate the facility a minimum of 100 feet from drainage swales, storm drain inlets, wetlands, streams and other surface waters. Prevent surface water from entering the structure except for the access road. Provide appropriate access with a gravel access road sloped down to the structure. Signs shall be placed to direct drivers to the facility after their load is discharged.

Liner: All washout facilities will be lined to prevent leaching of liquids into the ground. The liner shall be plastic sheeting with a minimum thickness of 10 mils with no holes or tears, and anchored beyond the top of the pit with an earthen berm, sand bags, stone, or other structural appurtenance except at the access point.

If pre-fabricated washouts are used they must ensure the capture and containment of the concrete wash and be sized based on the expected frequency of concrete pours. They shall be sited as noted in the location criteria.

Maintenance

- All concrete washout facilities shall be inspected daily. Damaged or leaking facilities shall be deactivated and repaired or replaced immediately. Excess rainwater that has accumulated over hardened concrete should be pumped to a stabilized area, such as a grass filter strip.
- Accumulated hardened material shall be removed when 75% of the storage capacity of the structure is filled. Any excess wash water shall be pumped into a containment vessel and properly disposed of off site.
- Dispose of the hardened material off-site in a construction/demolition landfill. On-site disposal may be allowed if this has been approved and accepted as part of the projects SWPPP. In that case, the material should be recycled as specified, or buried and covered with a minimum of 2 feet of clean compacted earthfill that is permanently stabilized to prevent erosion.
- The plastic liner shall be replaced with each cleaning of the washout facility.
- Inspect the project site frequently to ensure that no concrete discharges are taking place in non-designated areas.

STANDARD AND SPECIFICATIONS FOR DUST CONTROL

Definition & Scope

The control of dust resulting from land-disturbing activities, to prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems.

Conditions Where Practice Applies

On construction roads, access points, and other disturbed areas subject to surface dust movement and dust blowing where off-site damage may occur if dust is not controlled.

Design Criteria

Construction operations should be scheduled to minimize the amount of area disturbed at one time. Buffer areas of vegetation should be left where practical. Temporary or permanent stabilization measures shall be installed. No specific design criteria is given; see construction specifications below for common methods of dust control.

Water quality must be considered when materials are selected for dust control. Where there is a potential for the material to wash off to a stream, ingredient information must be provided to the NYSDEC.

No polymer application shall take place without written approval from the NYSDEC.

Construction Specifications

A. **Non-driving Areas** – These areas use products and materials applied or placed on soil surfaces to prevent airborne migration of soil particles.

Vegetative Cover – For disturbed areas not subject to traffic, vegetation provides the most practical method of dust control (see Section 3).

Mulch (including gravel mulch) – Mulch offers a fast effective means of controlling dust. This can also include rolled erosion control blankets.

Spray adhesives – These are products generally composed of polymers in a liquid or solid form that are mixed with water to form an emulsion that is sprayed on the soil surface with typical hydroseeding equipment. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations for the specific soils on the site. In no case should the application of these adhesives be made on wet soils or if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators and others working with the material.

B. **Driving Areas** – These areas utilize water, polymer emulsions, and barriers to prevent dust movement from the traffic surface into the air.

Sprinkling – The site may be sprayed with water until the surface is wet. This is especially effective on haul roads and access route to provide short term limited dust control.

Polymer Additives – These polymers are mixed with water and applied to the driving surface by a water truck with a gravity feed drip bar, spray bar or automated distributor truck. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations. Incorporation of the emulsion into the soil will be done to the appropriate depth based on expected traffic. Compaction after incorporation will be by vibratory roller to a minimum of 95%. The prepared surface shall be moist and no application of the polymer will be made if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators working with the material.

Barriers – Woven geo-textiles can be placed on the driving surface to effectively reduce dust throw and particle migration on haul roads. Stone can also be used for construction roads for effective dust control.

Windbreak – A silt fence or similar barrier can control air currents at intervals equal to ten times the barrier height. Preserve existing wind barrier vegetation as much as practical.

Maintenance

Maintain dust control measures through dry weather periods until all disturbed areas are stabilized.

STANDARD AND SPECIFICATIONS FOR STABILIZED CONSTRUCTION ACCESS

Definition & Scope

A stabilized pad of aggregate underlain with geotextile located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk, or parking area. The purpose of stabilized construction access is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets.

Conditions Where Practice Applies

A stabilized construction access shall be used at all points of construction ingress and egress.

Design Criteria

See Figure 2.1 on page 2.31 for details.

Aggregate Size: Use a matrix of 1-4 inch stone, or reclaimed or recycled concrete equivalent.

Thickness: Not less than six (6) inches.

Width: 12-foot minimum but not less than the full width of points where ingress or egress occurs. 24-foot minimum if there is only one access to the site.

Length: As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum would apply).

Geotextile: To be placed over the entire area to be covered with aggregate. Filter cloth will not be required on a single-family residence lot. Piping of surface water under entrance shall be provided as required. If piping is impossible, a mountable berm with 5:1 slopes will be permitted.

Criteria for Geotextile: The geotextile shall be woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydro-carbons, mildew, rot resistant, and conform to the fabric properties as shown:

Fabric Properties[3]	Light Duty[1] Roads Grade Subgrade	Heavy Duty[2] Haul Roads Rough Graded	Test Method
Grab Tensile Strength (lbs)	200	220	ASTM D1682
Elongation at Failure (%)	50	60	ASTM D1682
Mullen Burst Strength (lbs)	190	430	ASTM D3786
Puncture Strength (lbs)	40	125	ASTM D751 Modified
Equivalent	40-80	40-80	US Std Sieve
Opening Size			CW-02215
Aggregate Depth	6	10	-

[1]Light Duty Road: Area sites that have been graded to subgrade and where most travel would be single axle vehicles and an occasional multi-axle truck. Acceptable materials are Trevira Spunbond 1115, Mirafi 100X, Typar 3401, or equivalent.

[2]Heavy Duty Road: Area sites with only rough grading, and where most travel would be multi-axle vehicles. Acceptable materials are Trevira Spunbond 1135, Mirafi 600X, or equivalent.

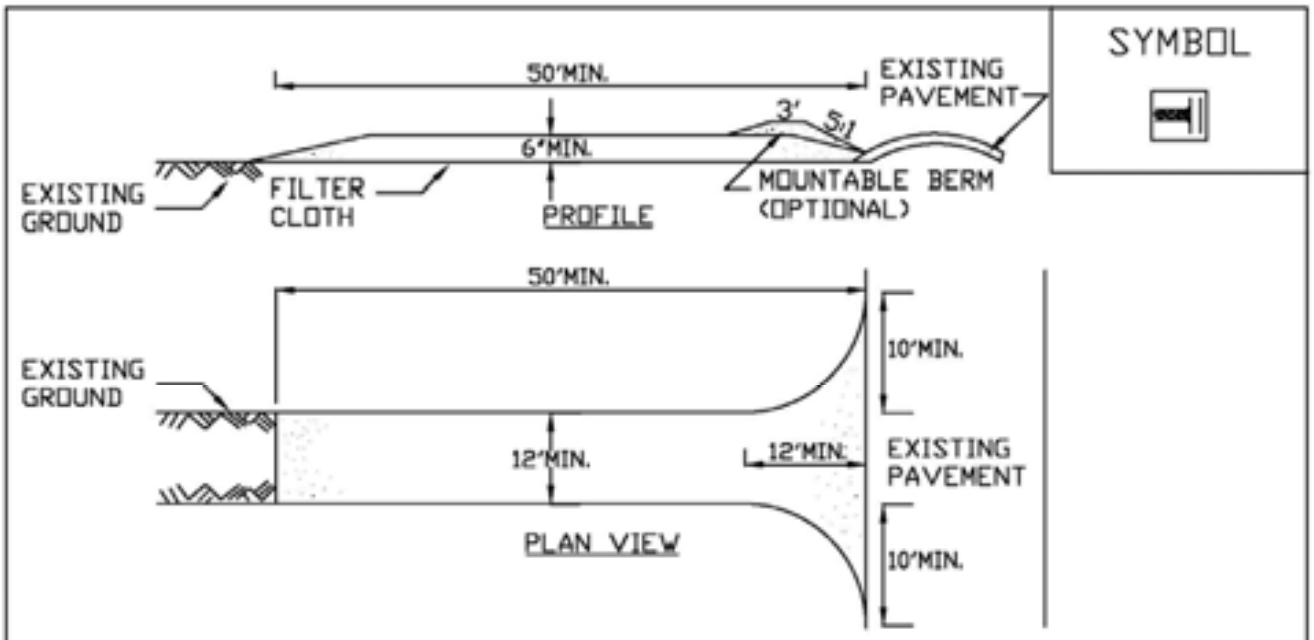
[3]Fabrics not meeting these specifications may be used only when design procedure and supporting documentation are supplied to determine aggregate depth and fabric strength.

Maintenance

The access shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way must be removed immediately.

When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device. All sediment shall be prevented from entering storm drains, ditches, or watercourses.

Figure 2.1
Stabilized Construction Access



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 1-4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ACCESS SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

STABILIZED CONSTRUCTION ACCESS

STANDARD AND SPECIFICATIONS FOR WINTER STABILIZATION

Definition & Scope

A temporary site specific, enhanced erosion and sediment control plan to manage runoff and sediment at the site during construction activities in the winter months to protect off-site water resources.

Conditions Where Practice Applies

This standard applies to all construction activities involved with ongoing land disturbance and exposure between November 15th to the following April 1st.

Design Criteria

1. Prepare a snow management plan with adequate storage for snow and control of melt water, requiring cleared snow to be stored in a manner not affecting ongoing construction activities.

2. Enlarge and stabilize access points to provide for snow management and stockpiling. Snow management activities must not destroy or degrade installed erosion and sediment control practices.

3. A minimum 25 foot buffer shall be maintained from all perimeter controls such as silt fence. Mark silt fence with tall stakes that are visible above the snow pack.

4. Edges of disturbed areas that drain to a waterbody within 100 feet will have 2 rows of silt fence, 5 feet apart, installed on the contour.

5. Drainage structures must be kept open and free of snow and ice dams. All debris, ice dams, or debris from plowing operations, that restrict the flow of runoff and meltwater, shall be removed.

6. Sediment barriers must be installed at all appropriate perimeter and sensitive locations. Silt fence and other practices requiring earth disturbance must be installed before the ground freezes.

7. Soil stockpiles must be protected by the use of established vegetation, anchored straw mulch, rolled stabilization matting, or other durable covering. A barrier must be installed at least 15 feet from the toe of the stockpile to prevent soil migration and to capture loose soil.

8. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures should be initiated by the end of the next business day and completed within three (3) days. Rolled erosion control blankets must be used on all slopes 3 horizontal to 1 vertical or steeper.

9. If straw mulch alone is used for temporary stabilization, it shall be applied at double the standard rate of 2 tons per acre, making the application rate 4 tons per acre. Other manufactured mulches should be applied at double the manufacturer's recommended rate.

10. To ensure adequate stabilization of disturbed soil in advance of a melt event, areas of disturbed soil should be stabilized at the end of each work day unless:

    a. work will resume within 24 hours in the same area and no precipitation is forecast or;

    b. the work is in disturbed areas that collect and retain runoff, such as open utility trenches, foundation excavations, or water management areas.

11. Use stone paths to stabilize access perimeters of buildings under construction and areas where construction vehicle traffic is anticipated. Stone paths should be a minimum 10 feet in width but wider as necessary to accommodate equipment.

Maintenance

The site shall be inspected frequently to ensure that the erosion and sediment control plan is performing its winter stabilization function. If the site will not have earth disturbing activities ongoing during the "winter season", **all** bare exposed soil must be stabilized by established vegetation, straw or other acceptable mulch, matting, rock, or other approved material such as rolled erosion control products. Seeding of areas with mulch cover is preferred but seeding alone is not acceptable for proper stabilization.

Compliance inspections must be performed and reports filed properly in accordance with the SWPPP for all sites under a winter shutdown.

References

1. Northeastern Illinois Soil and Sedimentation Control Steering Committee. October 1981. Procedures and Standards for Urban Soil Erosion and Sediment Control in Illinois.
2. J.F. Rushing, V.M. Moore, J.S. Tingle, Q. Mason, and T. McCaffery, 2005. Dust Abatement Methods for Lines of Communication and Base Camps in Temperate Climates. ERDC/GSL TR-05-23, October 2005.

STANDARD AND SPECIFICATIONS FOR CHECK DAM

Definition & Scope

Small barriers or dams constructed of stone, bagged sand or gravel, or other durable materials across a drainageway to reduce erosion in a drainage channel by reducing the velocity of flow in the channel.

Conditions Where Practice Applies

This practice is used as a **temporary** and, in some cases, a **permanent** measure to limit erosion by reducing velocities in open channels that are degrading or subject to erosion or where permanent stabilization is impractical due to short period of usefulness and time constraints of construction.

Design Criteria

Drainage Area: Maximum drainage area above the check dam shall not exceed two (2) acres.

Height: Not greater than 2 feet. Center shall be maintained 9 inches lower than abutments at natural ground elevation.

Side Slopes: Shall be 2:1 or flatter.

Spacing: The check dams shall be spaced as necessary in the channel so that the crest of the downstream dam is at the elevation of the toe of the upstream dam. This spacing is equal to the height of the check dam divided by the channel slope.

Therefore: $$S = \frac{h}{s}$$

Where: S = spacing interval (ft.)
h = height of check dam (ft.)
s = channel slope (ft./ft.)

Example:

For a channel with a 4% slope and 2 ft. high stone check dams, they are spaced as follows: $$S = \frac{2\ \text{ft}}{0.04\ \frac{\text{ft}}{\text{ft}}} = 50\ \text{ft}$$

For stone check dams: Use a well graded stone matrix 2 to 9 inches in size (NYS – DOT Light Stone Fill meets these requirements).

The overflow of the check dams will be stabilized to resist erosion that might be caused by the check dam. See Figure 3.1 on page 3.3 for details.

Check dams should be anchored in the channel by a cutoff trench 1.5 ft. wide and 0.5 ft. deep and lined with filter fabric to prevent soil migration.

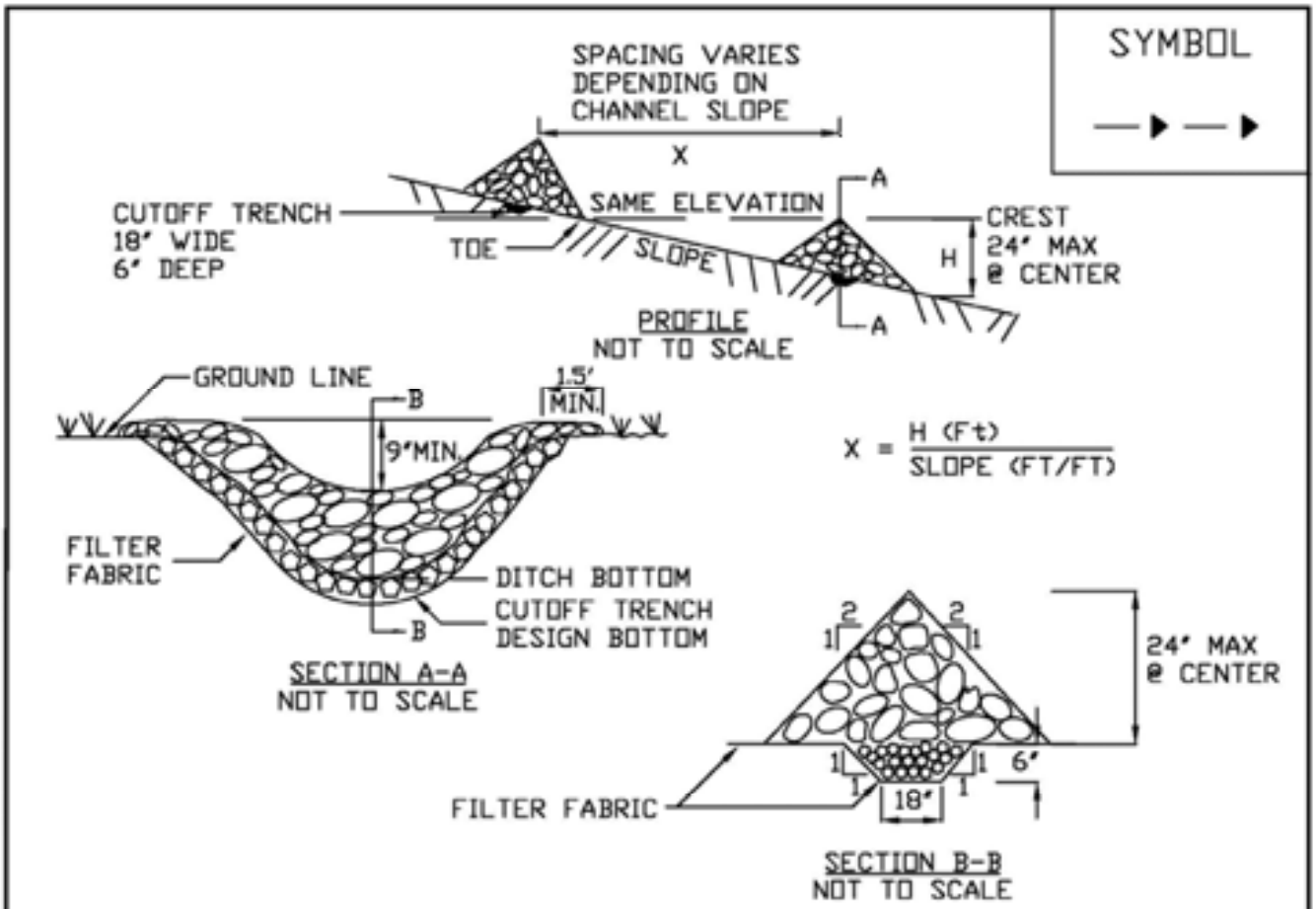
For filter sock or fiber roll check dams: The check dams will be anchored by staking the dam to the earth contact surface. The dam will extend to the top of the bank. The check dam will have a splash apron of NYS DOT #2 crushed stone extending a minimum 3 feet downstream from the dam and 1 foot up the sides of the channel. The compost and materials for a filter sock check dam shall meet the requirements shown in the standard for Compost Filter Sock on page 5.7.

Maintenance

The check dams should be inspected after each runoff event. Correct all damage immediately. If significant erosion has occurred between structures, a liner of stone or other suitable material should be installed in that portion of the channel or additional check dams added.

Remove sediment accumulated behind the dam as needed to allow channel to drain through the stone check dam and prevent large flows from carrying sediment over the dam.

Figure 3.1
Stone Check Dam Detail



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: USDA – NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

STONE CHECK DAM

STANDARD AND SPECIFICATIONS FOR GRASSED WATERWAY

Definition & Scope

A natural or **permanent** man-made channel of parabolic or trapezoidal cross-section that is below adjacent ground level and is stabilized by suitable vegetation. The flow channel is normally wide and shallow and conveys the runoff down the slope without causing damage by erosion.

Conditions Where Practice Applies

Grass waterways are used where added vegetative protection is needed to control erosion resulting from concentrated runoff.

Design Criteria

Capacity

The minimum capacity shall be that required to confine the peak rate of runoff expected from a 10-year 24 hour frequency rainfall event or a higher frequency corresponding to the hazard involved. This requirement for confinement may be waived on slopes of less than one (1) percent where out-of-bank flow will not cause erosion or property damage.

Peak rates of runoff values used in determining the capacity requirements shall be computed by appropriate methods. Where there is base flow, it shall be handled by a stone center, subsurface drain, or other suitable means since sustained wetness usually prevents adequate vegetative cover. The cross-sectional area of the stone center or subsurface drain size to be provided shall be determined by using a flow rate of 0.1 cfs/acre or by actual measurement of the maximum base flow.

Velocity

Please see Table 3.1, Diversion Maximum Permissible Design Velocities on page 3.10, for seed, soil, and velocity variables.

Cross Section

The design water surface elevation of a grassed waterway receiving water from diversions or other tributary channels shall be equal to or less than the design water surface elevation in the diversion or other tributary channels.

The top width of parabolic waterways shall not exceed 30 feet and the bottom width of trapezoidal waterways shall not exceed 15 feet unless multiple or divided waterways, stone center, or other means are provided to control meandering of low flows.

Structural Measures

In cases where grade or erosion problems exist, special control measures may be needed such as lined waterways (see page 3.27), or grade stabilization measures (see page 3.21). Where needed, these measures will be supported by adequate design computations. For typical cross sections of waterways with riprap sections or stone centers, refer to Figure 3.8 on page 3.24.

The design procedures for parabolic and trapezoidal channels are available in the NRCS Engineering Field Handbook. Figure 3.9 on page 3.25 also provides a design chart for parabolic waterway.

Outlets

Each waterway shall have a stable outlet. The outlet may be another waterway, a stabilized open channel, grade stabilization structure, etc. In all cases, the outlet must discharge in such a manner as not to cause erosion. Outlets shall be constructed and stabilized prior to the operation of the waterway.

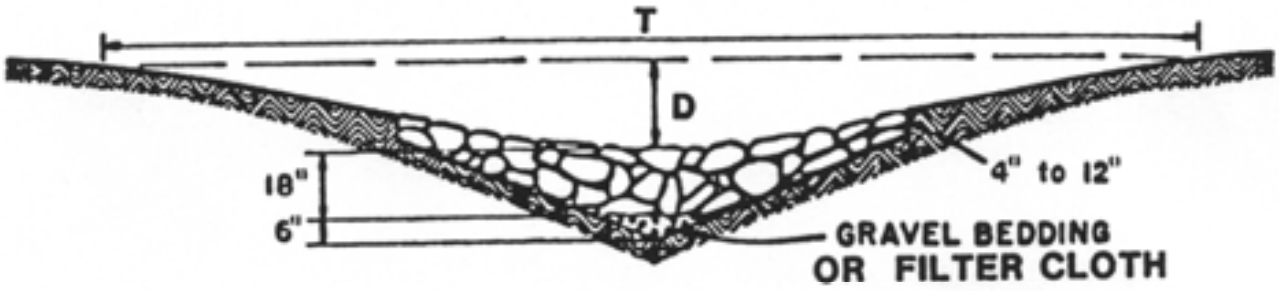
Stabilization

Waterways shall be stabilized in accordance with the appropriate vegetative stabilization standard and specifications, and will be dependent on such factors as slope, soil class, etc. See standard for Vegetating Waterways on Page 4.78.

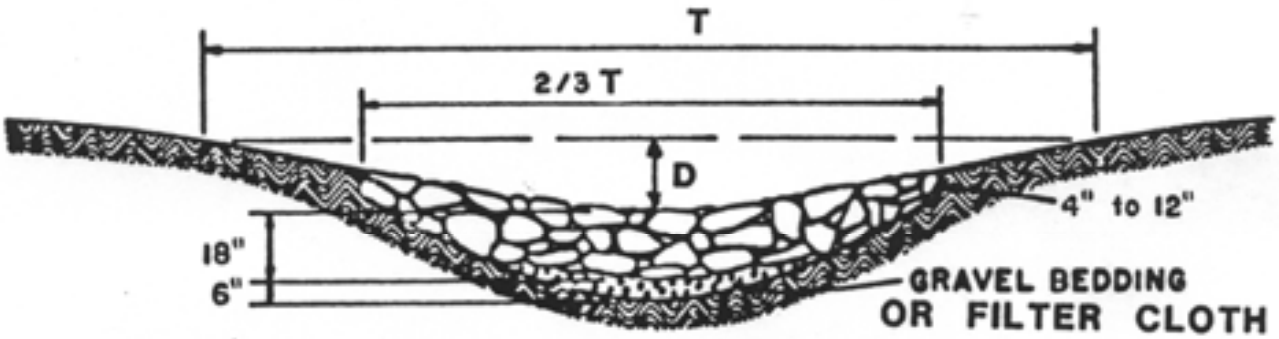
Construction Specifications

See Figure 3.10 on page 3.26 for details.

Figure 3.8
Typical Waterway Cross Sections Details



Waterway with stone center drain. "V" section shaped by motor grader.



Waterway with stone center drain. Rounded section shaped by bulldozer.

Figure 3.9
Parabolic Waterway Design Chart (USDA - NRCS)

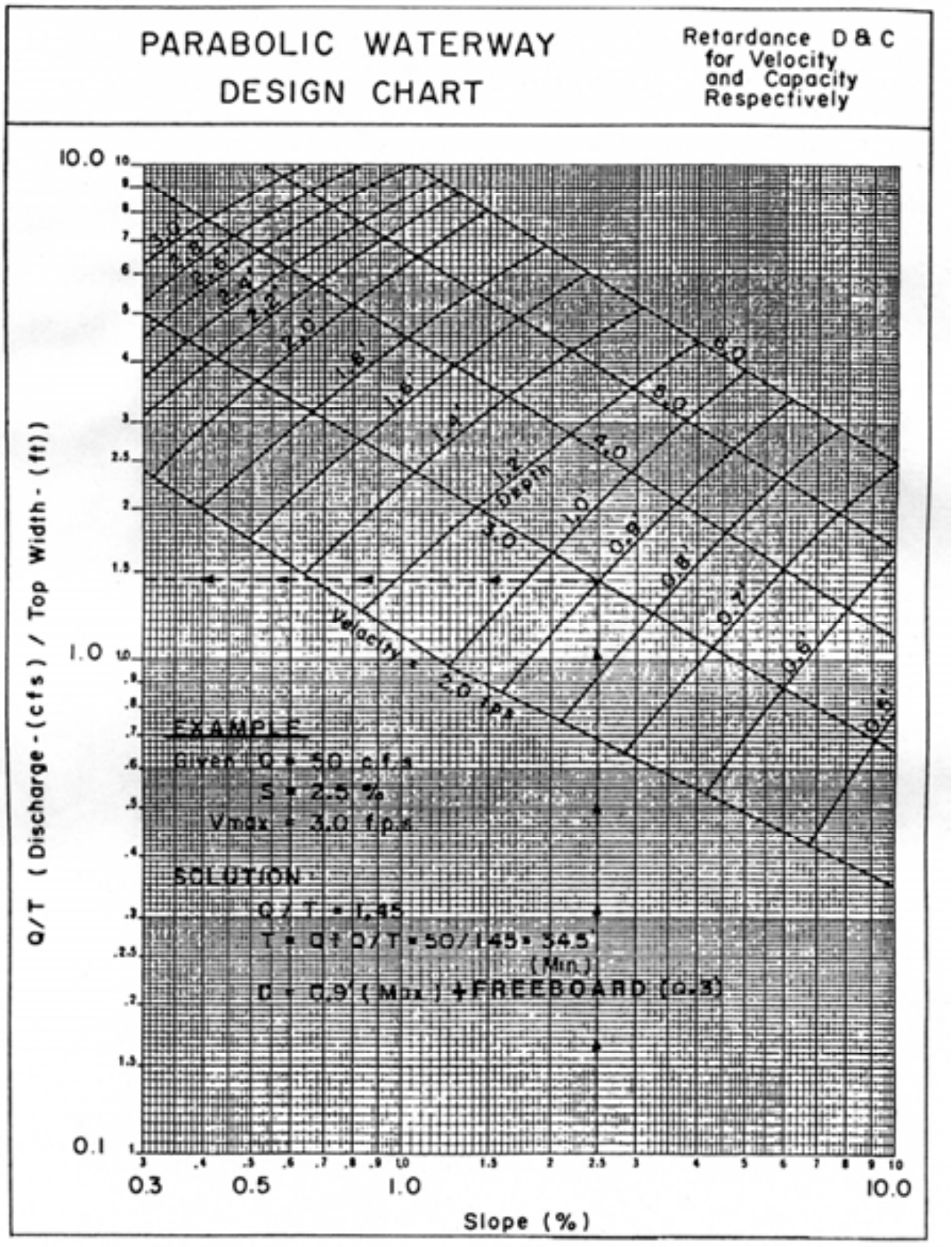
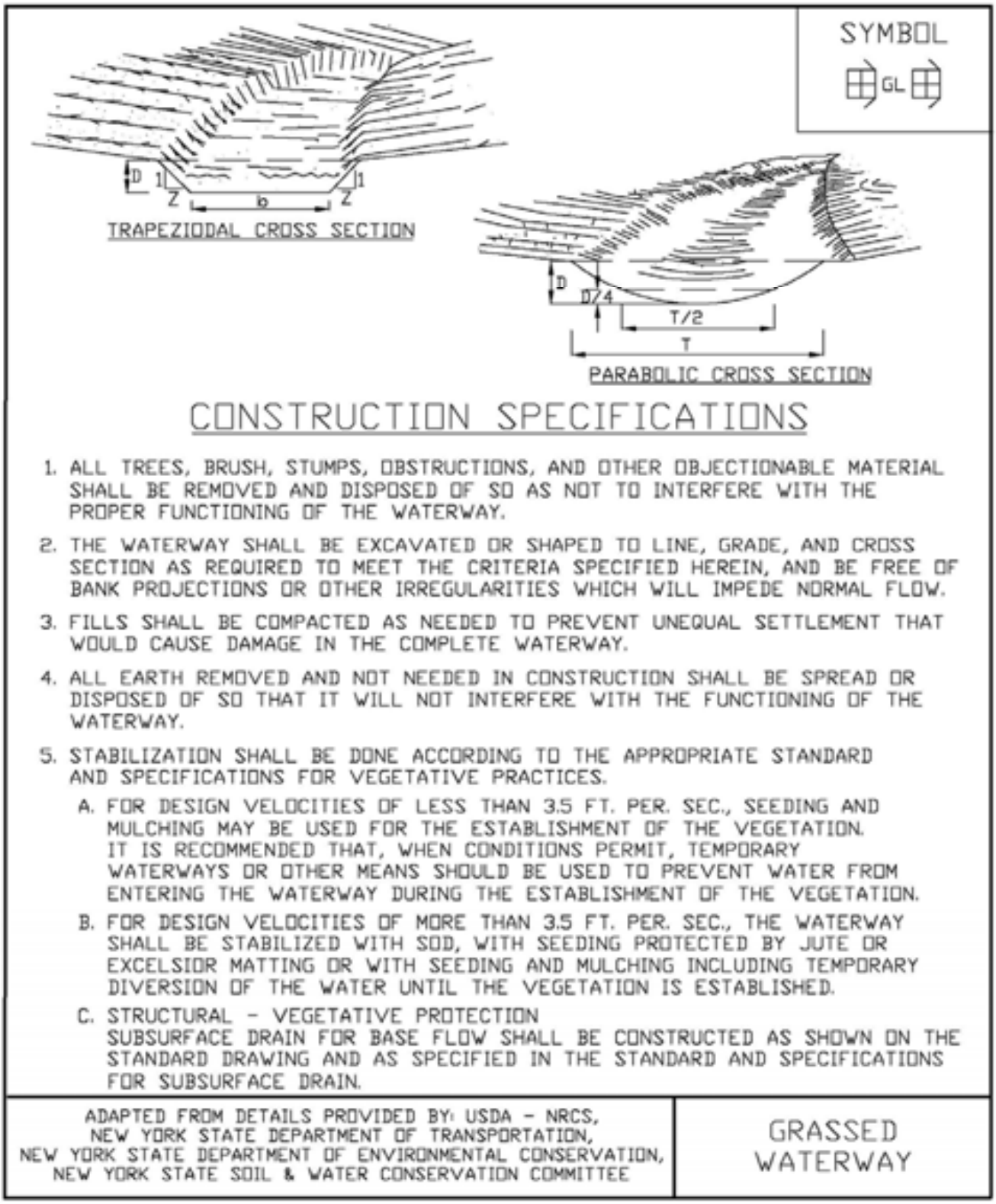


Figure 3.10
Grassed Waterway Detail



CONSTRUCTION SPECIFICATIONS

1. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE WATERWAY.
2. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETE WATERWAY.
4. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.
5. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE STANDARD AND SPECIFICATIONS FOR VEGETATIVE PRACTICES.
   A. FOR DESIGN VELOCITIES OF LESS THAN 3.5 FT. PER. SEC., SEEDING AND MULCHING MAY BE USED FOR THE ESTABLISHMENT OF THE VEGETATION. IT IS RECOMMENDED THAT, WHEN CONDITIONS PERMIT, TEMPORARY WATERWAYS OR OTHER MEANS SHOULD BE USED TO PREVENT WATER FROM ENTERING THE WATERWAY DURING THE ESTABLISHMENT OF THE VEGETATION.
   B. FOR DESIGN VELOCITIES OF MORE THAN 3.5 FT. PER. SEC., THE WATERWAY SHALL BE STABILIZED WITH SOD, WITH SEEDING PROTECTED BY JUTE OR EXCELSIOR MATTING OR WITH SEEDING AND MULCHING INCLUDING TEMPORARY DIVERSION OF THE WATER UNTIL THE VEGETATION IS ESTABLISHED.
   C. STRUCTURAL - VEGETATIVE PROTECTION
   SUBSURFACE DRAIN FOR BASE FLOW SHALL BE CONSTRUCTED AS SHOWN ON THE STANDARD DRAWING AND AS SPECIFIED IN THE STANDARD AND SPECIFICATIONS FOR SUBSURFACE DRAIN.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

GRASSED WATERWAY

STANDARD AND SPECIFICATIONS FOR LINED WATERWAY

Definition & Scope

A **permanent** waterway or outlet with a lining of concrete, stone, or other durable, hardened material. The lined section extends up the side slopes to the designed depth. The earth above the permanent lining may be vegetated or otherwise protected.

The lined waterway is constructed to provide for the disposal of concentrated runoff without damage from erosion or flooding, where grassed waterways would be inadequate due to high velocities.

Conditions Where Practice Applies

This standard applies to waterways or outlets with linings of cast-in-place concrete, flagstone mortared in place, rock riprap, gabions, or similar permanent linings. It does not apply to irrigation ditch or canal linings, grassed waterways with stone centers or small lined sections that carry prolonged low flows, or to reinforced concrete channels. Lined waterways should not be used if they are directly discharging to C(T) or higher streams unless thermal impacts are mitigated by biotechnical practices (Section 4). The maximum capacity of the waterway flowing at design depth shall not exceed 100 cubic feet per second.

This practice applies where the following or similar conditions exist:

1. Concentrated runoff is such that a lining is required to control erosion.
2. Steep grades, wetness, prolonged base flow, seepage, or piping that would cause erosion.
3. The location is such that damage from use by people or animals precludes use of vegetated waterways or outlets.
4. Soils are highly erosive or other soil and climate conditions preclude using vegetation.
5. High value property or adjacent facilities warrant the extra cost to contain design runoff in a limited space.

Design Criteria

Capacity

1. The minimum capacity shall be adequate to carry the peak rate of runoff from a 10-year, 24-hour storm. Velocity shall be computed using Manning's equation with a coefficient of roughness "n" as follows:

Lined Material	"n"
Concrete (Type):	
Trowel Finish	0.015
Float Finish	0.019
Gunite	0.019
Flagstone	0.022
Riprap	Determine from Figure 3.11 on page 3.30
Gabion	0.030

2. Riprap gradation and filter (bedding) are generally designed in accordance with criteria set forth in the National Cooperative Highway Research Program Report 108, available from the University Microfilm International, 300 N. Zeeb Road, Ann Arbor, Michigan 48106, Publication No. PB-00839; or the Hydraulic Engineering Circular No. 11, prepared by the U.S. Bureau of Public Roads, available from Federal Highway Administration, 400 7th Street, S.W., Washington, D.C. 20590, HNG-31, or the procedure in the USDA-NRCS's Engineering Field Manual, Chapter 16.

Velocity

1. Maximum design velocity shall be as shown below. Except for short transition sections, flow with a channel gradient within the range of 0.7 to 1.3 of this flow's critical slope must be avoided unless the channel is straight. Velocities exceeding critical will be restricted to straight reaches.

Design Flow Depth (ft.)	Maximum Velocity (ft./sec.)
0.0 - 0.5	25
0.5 - 1.0	15
Greater than 1.0	10

2. Waterways or outlets with velocities exceeding critical shall discharge into an energy dissipater to reduce velocity to less than critical, or to a velocity the downstream soil and vegetative conditions will allow.

Cross Section

The cross section shall be triangular, parabolic, or trapezoidal. Monolithic concrete or gabions may be rectangular.

Freeboard

The minimum freeboard for lined waterways or outlets shall be 0.25 feet above design high water in areas where erosion resistant vegetation cannot be grown adjacent to the paved side slopes. No freeboard is required where good vegetation can be grown and is maintained.

Side Slope

Steepest permissible side slopes, horizontal to vertical will be as follows:

1. Non-Reinforced Concrete
   Hand-placed, formed concrete
   Height of lining, 1.5 ft or less ..... Vertical
   Hand placed screened concrete or mortared
   In-place flagstone
   Height of lining, less than 2 ft ..... 1 to 1
   Height of lining, more than 2 ft ..... 2 to 1
2. Slip form concrete:
   Height of lining, less than 3 ft ..... 1 to 1
3. Rock Riprap ..... 2 to 1
4. Gabions ..... Vertical
5. Pre-cast Concrete Sections ..... Vertical

Lining Thickness

Minimum lining thickness shall be as follows:

1. Concrete ..... 4 in. (In most problem areas, shall be 5 in. with welded wire fabric reinforcing)

2. Rock Riprap ..... 1.5 x maximum stone size plus thickness of filter or bedding.

3. Flagstone ..... 4 in. including mortar bed.

Related Structures

Side inlets, drop structures, and energy dissipaters shall meet the hydraulic and structural requirements of the site.

Filters or Bedding

Filters or bedding to prevent piping, reduce uplift pressure, and collect water will be used as required and will be designed in accordance with sound engineering principles. Weep holes and drains should be provided as needed.

Concrete

Concrete used for lining shall be so proportioned that it is plastic enough for thorough consolidation and stiff enough to stay in place on side slopes. A dense product will be required. A mix that can be certified as suitable to produce a minimum strength of at least 3,000 pounds per square inch will be required. Cement used shall be Portland Cement, Type I, II, IV, or V. Aggregate used shall have a maximum diameter of 1 ½ inches.

Weep holes should be provided in concrete footings and retaining walls to allow free drainage of water. Pipe used for weep holes shall be non-corrosive.

Mortar

Mortar used for mortared in-place flagstone shall consist of a mix of cement, sand, and water. Follow directions on the bag of mortar for proper mixing of mortar and water.

Contraction Joints

Contraction joints in concrete linings, where required, shall be formed transversely to a depth of about one third the thickness of the lining at a uniform spacing in the range of 10 to 15 feet.

Rock Riprap or Flagstone

Stone used for riprap or gabions shall be dense and hard enough to withstand exposure to air, water, freezing, and thawing. Flagstone shall be flat for ease of placement and have the strength to resist exposure and breaking. Rock riprap maximum size shall be as follows:

Velocity (f.p.s.)	d_{max} (in.)
5.0	6
8.5	12
10	18
12	24
15	36

A complete listing riprap gradations is provided in Table 4.1, page 4.9.

Cutoff Walls

Cutoff walls shall be used at the beginning and ending of concrete lining. For rock riprap lining, cutoff walls shall be keyed into the channel bottom and at both ends of the lining.

Construction Specifications

1. The foundation area shall be cleared of trees, stumps, roots, sod, loose rock, or other objectionable material.

2. The cross-section shall be excavated to the neat lines and grades as shown on the plans. Over-excavated areas shall be backfilled with moist soil compacted to the density of the surrounding material.

3. No abrupt deviations from design grade or horizontal alignment shall be permitted.

4. Concrete linings shall be placed to the thickness shown on the plans and trowel finished. Adequate precautions shall be taken to protect freshly placed concrete from extreme (hot or cold) temperatures, to ensure proper curing.

5. Filter bedding and rock riprap shall be placed to line and grade in the manner specified.

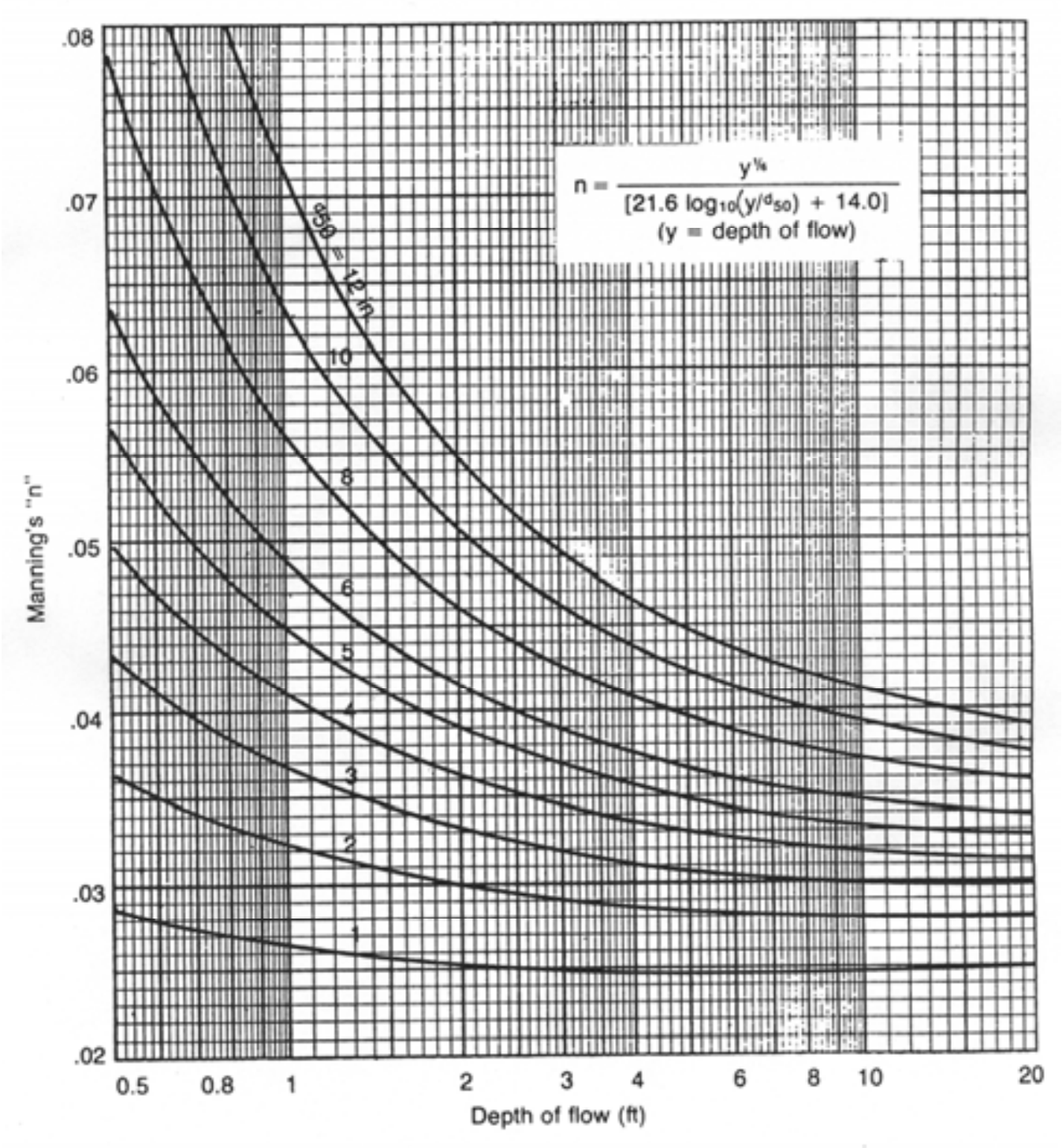
6. Construction operation shall be done in such a manner that erosion, air pollution, and water pollution will be minimized and held within legal limits. The completed job shall meet all design requirements for the appropriate finish. All disturbed areas shall be vegetated or otherwise protected against soil erosion.

Maintenance

Pavement or lining should be maintained as built to prevent undermining and deterioration. Existing trees next to pavements should be removed, as roots can cause uplift damage.

Vegetation next to pavement should be maintained in good condition to prevent scouring if the pavement is overtopped. See Standard and Specifications for Permanent Construction Area Planting on page 4.42.

Figure 3.11
Determining "n" for Riprap Lined Channel using Depth of Flow Chart
(USDA - NRCS)



STANDARD AND SPECIFICATIONS FOR ROCK OUTLET PROTECTION

Definition & Scope

A **permanent** section of rock protection placed at the outlet end of the culverts, conduits, or channels to reduce the depth, velocity, and energy of water, such that the flow will not erode the receiving downstream reach.

Conditions Where Practice Applies

This practice applies where discharge velocities and energies at the outlets of culverts, conduits, or channels are sufficient to erode the next downstream reach. This applies to:

1. Culvert outlets of all types.
2. Pipe conduits from all sediment basins, dry storm water ponds, and permanent type ponds.
3. New channels constructed as outlets for culverts and conduits.

Design Criteria

The design of rock outlet protection depends entirely on the location. Pipe outlet at the top of cuts or on slopes steeper than 10 percent, cannot be protected by rock aprons or riprap sections due to re-concentration of flows and high velocities encountered after the flow leaves the apron.

Many counties and state agencies have regulations and design procedures already established for dimensions, type and size of materials, and locations where outlet protection is required. Where these requirements exist, they shall be followed.

Tailwater Depth

The depth of tailwater immediately below the pipe outlet must be determined for the design capacity of the pipe. If the tailwater depth is less than half the diameter of the outlet pipe, and the receiving stream is wide enough to accept divergence of the flow, it shall be classified as a Minimum Tailwater Condition; see Figure 3.16 on page 3.42 as an example. If the tailwater depth is greater than half the pipe diameter and the receiving stream will continue to confine the flow, it shall be classified as a Maximum Tailwater Condition; see Figure 3.17 on page 3.43 as an example. Pipes which outlet onto flat areas with no defined channel may be assumed to have a Minimum Tailwater Condition; see Figure 3.16 on page 3.42 as an example.

Apron Size

The apron length and width shall be determined from the curves according to the tailwater conditions:

Minimum Tailwater – Use Figure 3.16 on page 3.42
Maximum Tailwater – Use Figure 3.17 on page 3.43

If the pipe discharges directly into a well defined channel, the apron shall extend across the channel bottom and up the channel banks to an elevation one foot above the maximum tailwater depth or to the top of the bank, whichever is less.

The upstream end of the apron, adjacent to the pipe, shall have a width two (2) times the diameter of the outlet pipe, or conform to pipe end section if used.

Bottom Grade

The outlet protection apron shall be constructed with no slope along its length. There shall be no overfall at the end of the apron. The elevation of the downstream end of the apron shall be equal to the elevation of the receiving channel or adjacent ground.

Alignment

The outlet protection apron shall be located so that there are no bends in the horizontal alignment.

Materials

The outlet protection may be done using rock riprap, grouted riprap, or gabions. Outlets constructed on the bank of a stream or wetland shall not use grouted rip-rap, gabions or concrete.

Riprap shall be composed of a well-graded mixture of rock size so that 50 percent of the pieces, by weight, shall be larger than the d_{50} size determined by using the charts. A

well-graded mixture, as used herein, is defined as a mixture composed primarily of larger rock sizes, but with a sufficient mixture of other sizes to fill the smaller voids between the rocks. The diameter of the largest rock size in such a mixture shall be 1.5 times the d_{50} size.

Thickness

The minimum thickness of the riprap layer shall be 1.5 times the maximum rock diameter for d_{50} of 15 inches or less; and 1.2 times the maximum rock size for d_{50} greater than 15 inches. The following chart lists some examples:

D_{50} (inches)	d_{max} (inches)	Minimum Blanket Thickness (inches)
4	6	9
6	9	14
9	14	20
12	18	27
15	22	32
18	27	32
21	32	38
24	36	43

Rock Quality

Rock for riprap shall consist of field rock or rough unhewn quarry rock. The rock shall be hard and angular and of a quality that will not disintegrate on exposure to water or weathering. The specific gravity of the individual rocks shall be at least 2.5.

Filter

A filter is a layer of material placed between the riprap and the underlying soil surface to prevent soil movement into and through the riprap. Riprap shall have a filter placed under it in all cases.

A filter can be of two general forms: a gravel layer or a plastic filter cloth. The plastic filter cloth can be woven or non-woven monofilament yarns, and shall meet these base requirements: thickness 20-60 mils, grab strength 90-120 lbs; and shall conform to ASTM D-1777 and ASTM D-1682.

Gravel filter blanket, when used, shall be designed by comparing particle sizes of the overlying material and the base material. Design criteria are available in Standard and Specification for Anchored Slope and Channel Stabilization on page 4.7.

Gabions

Gabions shall be made of hexagonal triple twist mesh with heavily galvanized steel wire. The maximum linear dimension of the mesh opening shall not exceed 4 ½ inches and the area of the mesh opening shall not exceed 10 square inches.

Gabions shall be fabricated in such a manner that the sides, ends, and lid can be assembled at the construction site into a rectangular basket of the specified sizes. Gabions shall be of single unit construction and shall be installed according to manufacturer's recommendations.

The area on which the gabion is to be installed shall be graded as shown on the drawings. Foundation conditions shall be the same as for placing rock riprap, and filter cloth shall be placed under all gabions. Where necessary, key, or tie, the structure into the bank to prevent undermining of the main gabion structure.

Maintenance

Once a riprap outlet has been installed, the maintenance needs are very low. It should be inspected after high flows for evidence of scour beneath the riprap or for dislodged rocks. Repairs should be made immediately.

Design Procedure

1. Investigate the downstream channel to assure that nonerosive velocities can be maintained.

2. Determine the tailwater condition at the outlet to establish which curve to use.

3. Use the appropriate chart with the design discharge to determine the riprap size and apron length required. It is noted that references to pipe diameters in the charts are based on full flow. For other than full pipe flow, the parameters of depth of flow and velocity must be used to adjust the design discharges.

4. Calculate apron width at the downstream end if a flare section is to be employed.

Design Examples are demonstrated in Appendix B.

Construction Specifications

1. The subgrade for the filter, riprap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

2. The rock or gravel shall conform to the specified grad-

ing limits when installed respectively in the riprap or filter.

3. Filter cloth shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps, whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.

4. Rock for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The rock for riprap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogenous with the smaller rocks and spalls filling the voids between the larger rocks. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

Figure 3.16
Outlet Protection Design—Minimum Tailwater Condition Chart (Design of Outlet Protection from a Round Pipe Flowing Full, Minimum Tailwater Condition: $T_w < 0.5D_o$) (USDA - NRCS)

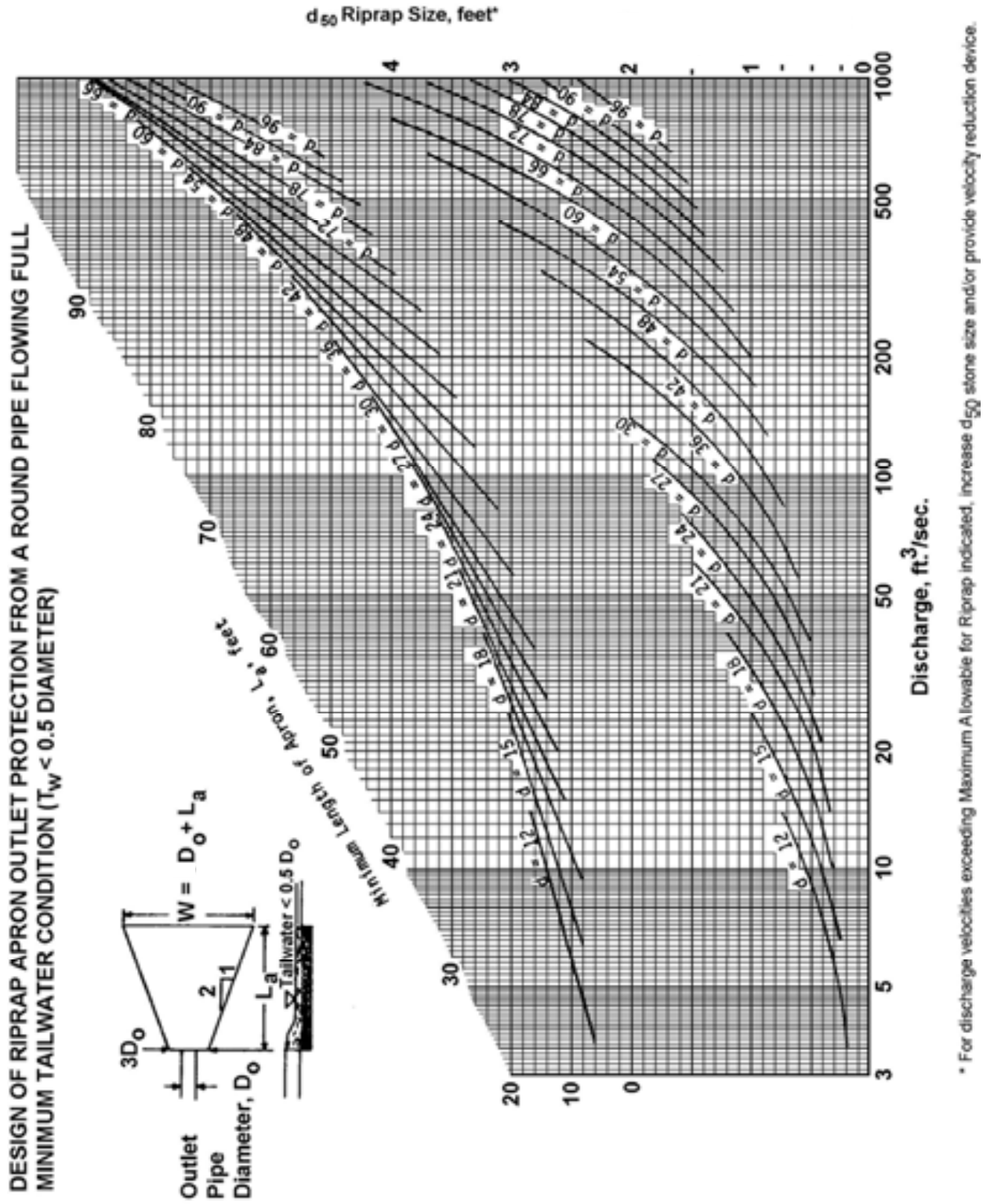


Figure 3.17
Outlet Protection Design—Maximum Tailwater Condition Chart (Design of Outlet Protection from a Round Pipe Flowing Full, Maximum Tailwater Condition: $T_w \geq 0.5D_o$) (USDA - NRCS)

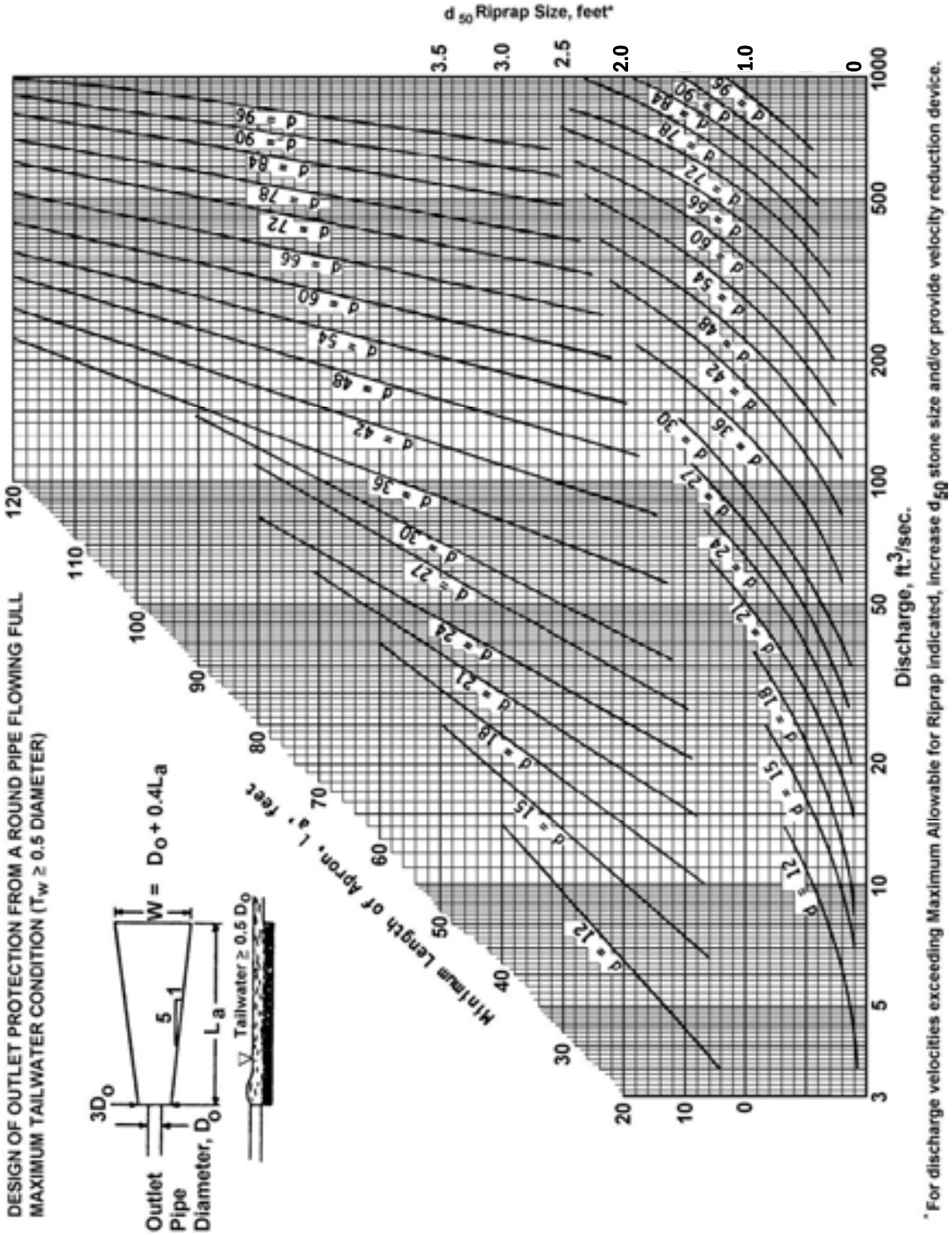


Figure 3.18
Riprap Outlet Protection Detail (1)

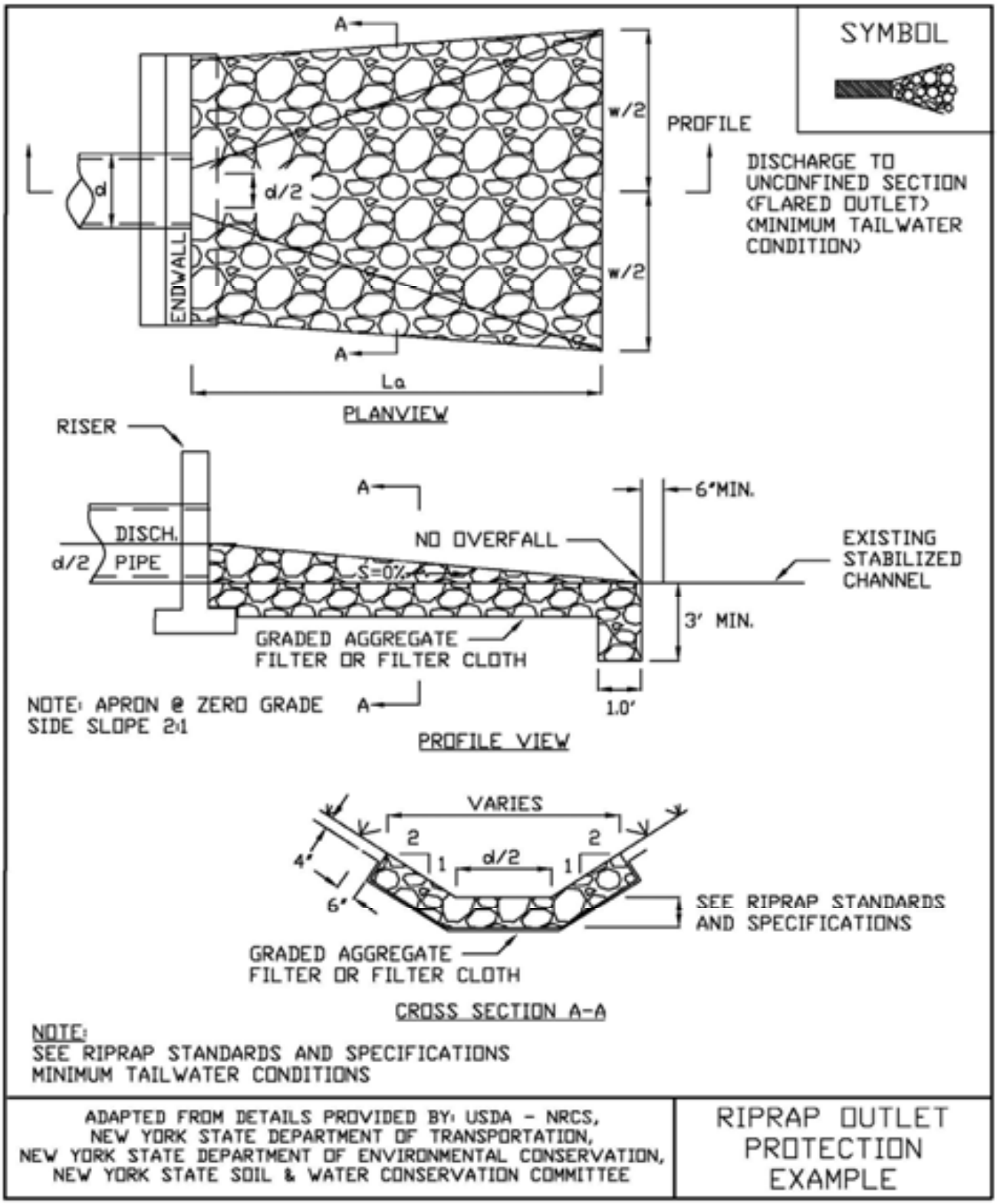


Figure 3.19
Riprap Outlet Protection Detail (2)

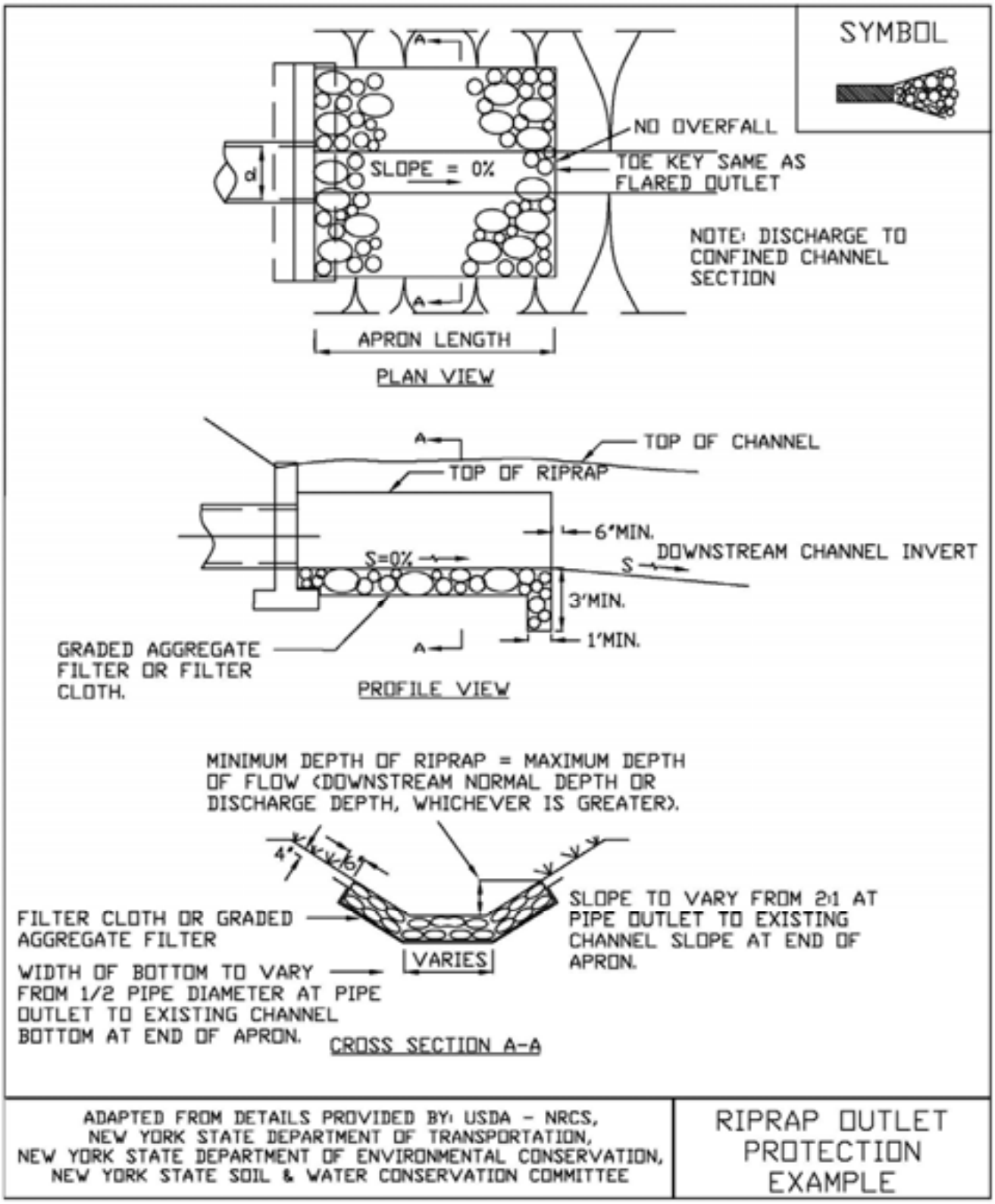
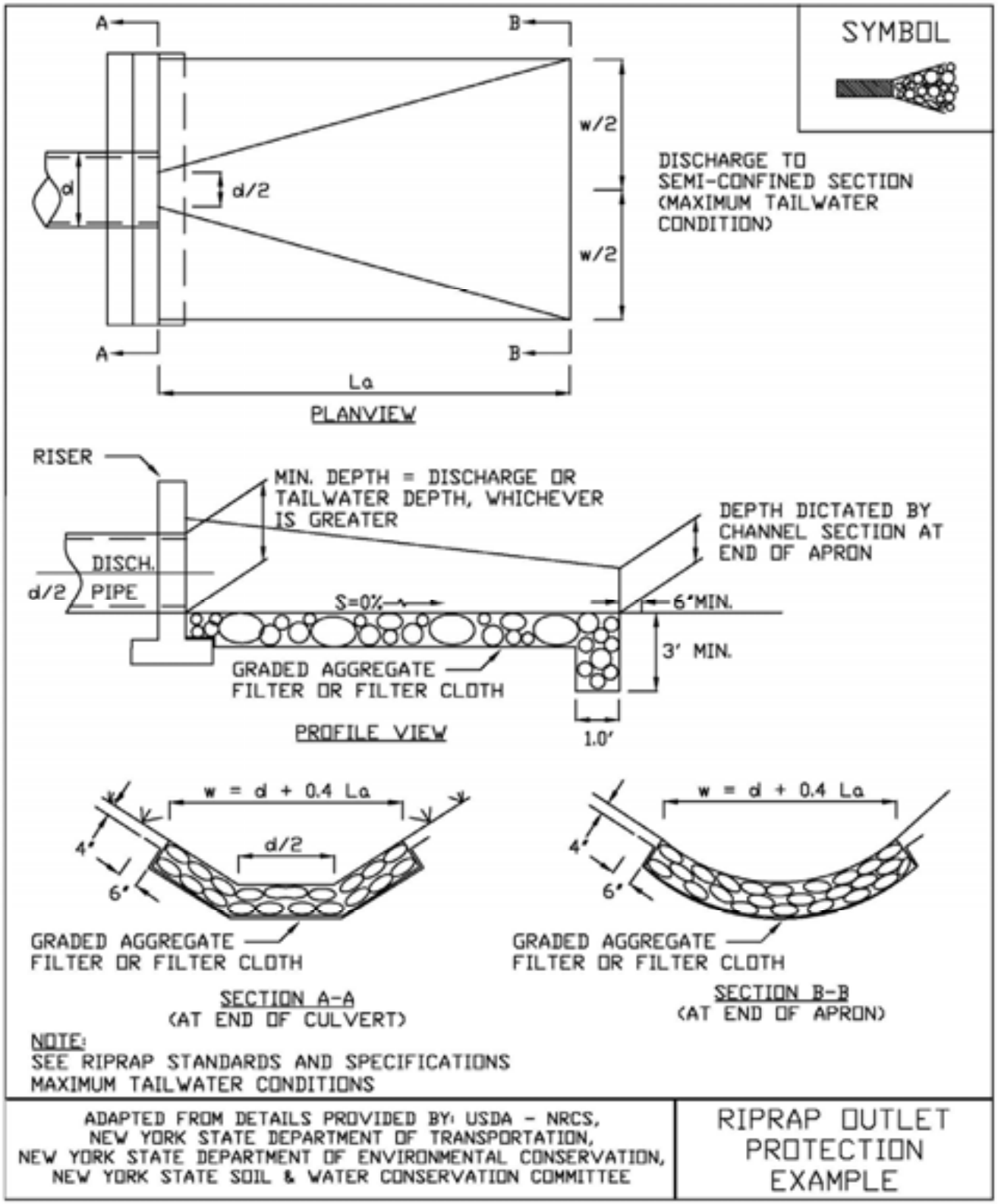


Figure 3.20
Riprap Outlet Protection Detail (3)



STANDARD AND SPECIFICATIONS FOR LANDGRADING

Definition & Scope

Permanent reshaping of the existing land surface by grading in accordance with an engineering topographic plan and specification to provide for erosion control and vegetative establishment on disturbed, reshaped areas.

Design Criteria

The grading plan should be based upon the incorporation of building designs and street layouts that fit and utilize existing topography and desirable natural surrounding to avoid extreme grade modifications. Information submitted must provide sufficient topographic surveys and soil investigations to determine limitations that must be imposed on the grading operation related to slope stability, effect on adjacent properties and drainage patterns, measures for drainage and water removal, and vegetative treatment, etc.

Many municipalities and counties have regulations and design procedures already established for land grading and cut and fill slopes. Where these requirements exist, they shall be followed.

The plan must show existing and proposed contours of the area(s) to be graded. The plan shall also include practices for erosion control, slope stabilization, safe disposal of runoff water and drainage, such as waterways, lined ditches, reverse slope benches (include grade and cross section), grade stabilization structures, retaining walls, and surface and subsurface drains. The plan shall also include phasing of these practices. The following shall be incorporated into the plan:

1. Provisions shall be made to safely convey surface runoff to storm drains, protected outlets, or to stable water courses to ensure that surface runoff will not damage slopes or other graded areas; see standards and specifications for Grassed Waterway, Diversion, or Grade Stabilization Structure.

2. Cut and fill slopes that are to be stabilized with grasses shall not be steeper than 2:1. When slopes exceed 2:1, special design and stabilization consideration are required and shall be adequately shown on the plans. (Note: Where the slope is to be mowed, the slope should be no steeper than 3:1, although 4:1 is preferred because of safety factors related to mowing steep slopes.)

3. Reverse slope benches or diversion shall be provided whenever the vertical interval (height) of any 2:1 slope exceeds 20 feet; for 3:1 slope it shall be increased to 30 feet and for 4:1 to 40 feet. Benches shall be located to divide the slope face as equally as possible and shall convey the water to a stable outlet. Soils, seeps, rock outcrops, etc., shall also be taken into consideration when designing benches.

   A. Benches shall be a minimum of six feet wide to provide for ease of maintenance.

   B. Benches shall be designed with a reverse slope of 6:1 or flatter to the toe of the upper slope and with a minimum of one foot in depth. Bench gradient to the outlet shall be between 2 percent and 3 percent, unless accompanied by appropriate design and computations.

   C. The flow length within a bench shall not exceed 800 feet unless accompanied by appropriate design and computations; see Standard and Specifications for Diversion on page 3.9

4. Surface water shall be diverted from the face of all cut and/or fill slopes by the use of diversions, ditches and swales or conveyed downslope by the use of a designed structure, except where:

   A. The face of the slope is or shall be stabilized and the face of all graded slopes shall be protected from surface runoff until they are stabilized.

   B. The face of the slope shall not be subject to any concentrated flows of surface water such as from natural drainage ways, graded ditches, downspouts, etc.

   C. The face of the slope will be protected by anchored stabilization matting, sod, gravel, riprap, or other stabilization method.

5. Cut slopes occurring in ripable rock shall be serrated as shown in Figure 4.9 on page 4.26. The serrations shall be made with conventional equipment as the excavation is made. Each step or serration shall be constructed on the contour and will have steps cut at nominal two-foot intervals with nominal three-foot horizontal shelves. These steps will vary depending on the slope ratio or the cut slope. The nominal slope line is 1 ½: 1. These steps will weather and act to hold moisture, lime, fertilizer, and seed thus producing a much quicker and longer-lived vegetative cover and better slope stabilization. Overland flow shall be diverted from the top of all serrated cut slopes and carried to a suitable outlet.

6. Subsurface drainage shall be provided where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.

7. Slopes shall not be created so close to property lines as to endanger adjoining properties without adequately protecting such properties against sedimentation, erosion, slippage, settlement, subsidence, or other related damages.

8. Fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris, and other objectionable material. It should be free of stones over two (2) inches in diameter where compacted by hand or mechanical tampers or over eight (8) inches in diameter where compacted by rollers or other equipment. Frozen material shall not be placed in the fill nor shall the fill material be placed on a frozen foundation.

9. Stockpiles, borrow areas, and spoil shall be shown on the plans and shall be subject to the provisions of this Standard and Specifications.

10. All disturbed areas shall be stabilized structurally or vegetatively in compliance with the Permanent Construction Area Planting Standard on page 4.42.

Construction Specifications

See Figures 4.9 and 4.10 for details.

1. All graded or disturbed areas, including slopes, shall be protected during clearing and construction in accordance with the erosion and sediment control plan until they are adequately stabilized.

2. All erosion and sediment control practices and measures shall be constructed, applied and maintained in accordance with the erosion and sediment control plan and these standards.

3. Topsoil required for the establishment of vegetation shall be stockpiled in amount necessary to complete finished grading of all exposed areas.

4. Areas to be filled shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots, or other objectionable material.

5. Areas that are to be topsoiled shall be scarified to a minimum depth of four inches prior to placement of topsoil.

6. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence, or other related problems. Fill intended to support buildings, structures, and conduits, etc., shall be compacted in accordance with local requirements or codes.

7. All fill shall be placed and compacted in layers not to exceed 9 inches in thickness.

8. Except for approved landfills or nonstructural fills, fill material shall be free of frozen particles, brush, roots, sod, or other foreign objectionable materials that would interfere with, or prevent, construction of satisfactory fills.

9. Frozen material or soft, mucky or highly compressible materials shall not be incorporated into fill slopes or structural fills.

10. Fill shall not be placed on saturated or frozen surfaces.

11. All benches shall be kept free of sediment during all phases of development.

12. Seeps or springs encountered during construction shall be handled in accordance with the Standard and Specification for Subsurface Drain on page 3.48 or other approved methods.

13. All graded areas shall be permanently stabilized immediately following finished grading.

14. Stockpiles, borrow areas, and spoil areas shall be shown on the plans and shall be subject to the provisions of this Standard and Specifications.

Figure 4.9
Typical Section of Serrated Cut Slope

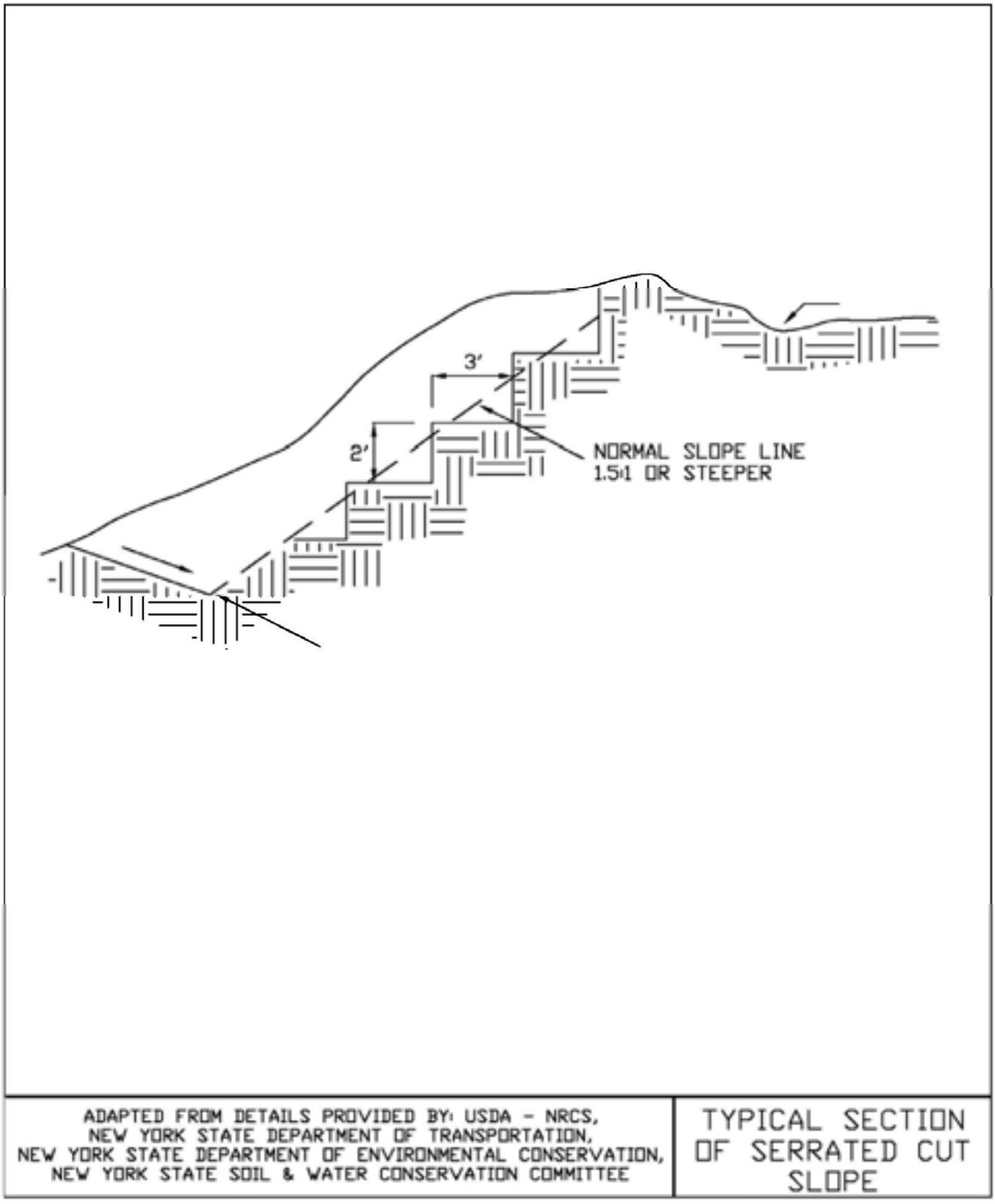


Figure 4.10
Landgrading

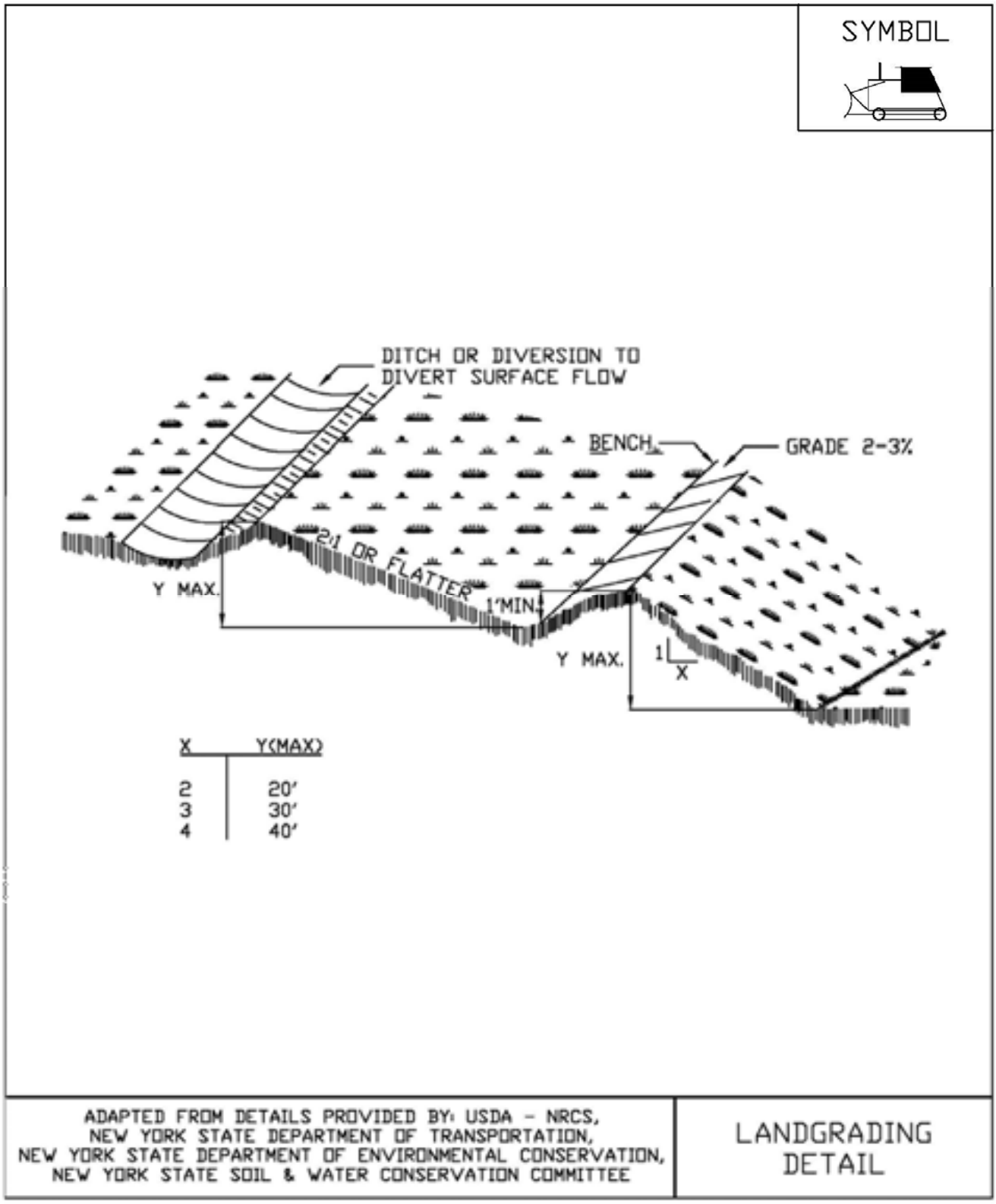


Figure 4.11
Landgrading - Construction Specifications

CONSTRUCTION SPECIFICATIONS

1. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.
2. ALL SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
3. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNT NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS.
4. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
5. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF FOUR INCHES PRIOR TO PLACEMENT OF TOPSOIL.
6. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
7. ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
8. EXCEPT FOR APPROVED LANDFILLS, FILL MATERIAL SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
9. FROZEN MATERIALS OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED IN FILLS.
10. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
11. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
12. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
13. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.
14. STOCKPILES, BORROW AREAS AND SPOIL AREAS SHALL BE SHOWN ON THE PLANS AND SHALL BE SUBJECT TO THE PROVISIONS OF THIS STANDARD AND SPECIFICATION.

ADAPTED FROM DETAILS PROVIDED BY: USDA – NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

LANDGRADING
SPECIFICATIONS

STANDARD AND SPECIFICATIONS FOR MULCHING

Definition and Scope

Applying coarse plant residue or chips, or other suitable materials, to cover the soil surface to provide initial erosion control while a seeding or shrub planting is establishing. Mulch will conserve moisture and modify the surface soil temperature and reduce fluctuation of both. Mulch will prevent soil surface crusting and aid in weed control. Mulch can also be used alone for temporary stabilization in non-growing months. Use of stone as a mulch could be more permanent and should not be limited to non-growing months.

Conditions Where Practice Applies

On soils subject to erosion and on new seedings and shrub plantings. Mulch is useful on soils with low infiltration rates by retarding runoff.

Criteria

Site preparation prior to mulching requires the installation of necessary erosion control or water management practices and drainage systems.

Slope, grade and smooth the site to fit needs of selected mulch products.

Remove all undesirable stones and other debris to meet the needs of the anticipated land use and maintenance required.

Apply mulch after soil amendments and planting is accomplished or simultaneously if hydroseeding is used.

Select appropriate mulch material and application rate or material needs. Hay mulch shall not be used in wetlands or in areas of permanent seeding. Clean straw mulch is preferred alternative in wetland application. Determine local availability.

Select appropriate mulch anchoring material.

NOTE: The best combination for grass/legume establishment is straw (cereal grain) mulch applied at 2 ton/ acre (90 lbs./1000sq.ft.) and anchored with wood fiber mulch (hydromulch) at 500 – 750 lbs./acre (11 – 17 lbs./1000 sq. ft.). The wood fiber mulch must be applied through a hydroseeder immediately after mulching.

Table 4.2
Guide to Mulch Materials, Rates, and Uses

Mulch Material	Quality Standards	per 1000 Sq. Ft.	per Acre	Depth of Application	Remarks
Wood chips or shavings	Air-dried. Free of objectionable coarse material	500-900 lbs.	10-20 tons	2-7”	Used primarily around shrub and tree plantings and recreation trails to inhibit weed competition. Resistant to wind blowing. Decomposes slowly.
Wood fiber cellulose (partly digested wood fibers)	Made from natural wood usually with green dye and dispersing agent	50 lbs.	2,000 lbs.	—	Apply with hydromulcher. No tie down required. Less erosion control provided than 2 tons of hay or straw.
Gravel, Crushed Stone or Slag	Washed; Size 2B or 3A—1 1/2”	9 cu. yds.	405 cu. yds.	3”	Excellent mulch for short slopes and around plants and ornamentals. Use 2B where subject to traffic. (Approximately 2,000 lbs./cu. yd.). Frequently used over filter fabric for better weed control.
Hay or Straw	Air-dried; free of undesirable seeds & coarse materials	90-100 lbs. 2-3 bales	2 tons (100-120 bales)	cover about 90% surface	Use small grain straw where mulch is maintained for more than three months. Subject to wind blowing unless anchored. Most commonly used mulching material. Provides the best micro-environment for germinating seeds.
Jute twisted yarn	Undyed, unbleached plain weave. Warp 78 ends/yd., Weft 41 ends/ yd. 60-90 lbs./roll	48” x 50 yds. or 48” x 75 yds.	—	—	Use without additional mulch. Tie down as per manufacturers specifications. Good for center line of concentrated water flow.
Excelsior wood fiber mats	Interlocking web of excelsior fibers with photodegradable plastic netting	4’ x 112.5’ or 8’ x 112.5’.	—	—	Use without additional mulch. Excellent for seeding establishment. Anchor as per manufacturers specifications. Approximately 72 lbs./roll for excelsior with plastic on both sides. Use two sided plastic for centerline of waterways.
Straw or coconut fiber, or combination	Photodegradable plastic net on one or two sides	Most are 6.5 ft. x 3.5 ft.	81 rolls	—	Designed to tolerate higher velocity water flow, centerlines of waterways, 60 sq. yds. per roll.

Table 4.3
Mulch Anchoring Guide

Anchoring Method or Material	Kind of Mulch to be Anchored	How to Apply
1. Peg and Twine	Hay or straw	After mulching, divide areas into blocks approximately 1 sq. yd. in size. Drive 4-6 pegs per block to within 2" to 3" of soil surface. Secure mulch to surface by stretching twine between pegs in criss-cross pattern on each block. Secure twine around each peg with 2 or more tight turns. Drive pegs flush with soil. Driving stakes into ground tightens the twine.
2. Mulch netting	Hay or straw	Staple the light-weight paper, jute, wood fiber, or plastic nettings to soil surface according to manufacturer's recommendations. Should be biodegradable. Most products are not suitable for foot traffic.
3. Wood cellulose fiber	Hay or straw	Apply with hydroseeder immediately after mulching. Use 500 lbs. wood fiber per acre. Some products contain an adhesive material ("tackifier"), possibly advantageous.
4. Mulch anchoring tool	Hay or straw	Apply mulch and pull a mulch anchoring tool (blunt, straight discs) over mulch as near to the contour as possible. Mulch material should be "tucked" into soil surface about 3".
5. Tackifier	Hay or straw	Mix and apply polymeric and gum tackifiers according to manufacturer's instructions. Avoid application during rain. A 24-hour curing period and a soil temperature higher than 45^0 Fahrenheit are required.

STANDARD AND SPECIFICATIONS FOR PERMANENT CONSTRUCTION AREA PLANTING

Definition & Scope

Establishing **permanent** grasses with other forbs and/or shrubs to provide a minimum 80% perennial vegetative cover on areas disturbed by construction and critical areas to reduce erosion and sediment transport. Critical areas may include but are not limited to steep excavated cut or fill slopes as well as eroding or denuded natural slopes and areas subject to erosion.

Conditions Where Practice Applies

This practice applies to all disturbed areas void of, or having insufficient, cover to prevent erosion and sediment transport. See additional standards for special situations such as sand dunes and sand and gravel pits.

Criteria

All water control measures will be installed as needed prior to final grading and seedbed preparation. Any severely compacted sections will require chiseling or disking to provide an adequate rooting zone, to a minimum depth of 12", see Soil Restoration Standard. The seedbed must be prepared to allow good soil to seed contact, with the soil not too soft and not too compact. Adequate soil moisture must be present to accomplish this. If surface is powder dry or sticky wet, postpone operations until moisture changes to a favorable condition. If seeding is accomplished within 24 hours of final grading, additional scarification is generally not needed, especially on ditch or stream banks. Remove all stones and other debris from the surface that are greater than 4 inches, or that will interfere with future mowing or maintenance.

Soil amendments should be incorporated into the upper 2 inches of soil when feasible. **The soil should be tested to determine the amounts of amendments needed.** Apply ground agricultural limestone to attain a pH of 6.0 in the upper 2 inches of soil. If soil must be fertilized before results of a soil test can be obtained to determine fertilizer needs, apply commercial fertilizer at 600 lbs. per acre of 5-5 -10 or equivalent. If manure is used, apply a quantity to meet the nutrients of the above fertilizer. This requires an appropriate manure analysis prior to applying to the site. Do not use manure on sites to be planted with birdsfoot trefoil or in the path of concentrated water flow.

Seed mixtures may vary depending on location within the state and time of seeding. Generally, warm season grasses should only be seeded during early spring, April to May. These grasses are primarily used for vegetating excessively drained sands and gravels. See Standard and Specification for Sand and Gravel Mine Reclamation. Other grasses may be seeded any time of the year when the soil is not frozen and is workable. When legumes such as birdsfoot trefoil are included, spring seeding is preferred. See Table 4.4, "Permanent Construction Area Planting Mixture Recommendations" for additional seed mixtures.

General Seed Mix:	**Variety**	**lbs./ acre**	**lbs/1000 sq. ft.**
Red Clover[1] OR	Acclaim, Rally, Red Head II, Renegade	8[2]	0.20
Common white clover[1]	Common	8	0.20
PLUS			
Creeping Red Fescue	Common	20	0.45
PLUS			
Smooth Bromegrass OR	Common	2	0.05
Ryegrass (perennial)	Pennfine/Linn	5	0.10

[1] add inoculant immediately prior to seeding
[2] Mix 4 lbs each of Empire and Pardee OR 4 lbs of Birdsfoot and 4 lbs white clover per acre. All seeding rates are given for Pure Live Seed (PLS)

Pure Live Seed, or (PLS) refers to the amount of live seed in a lot of bulk seed. Information on the seed bag label includes the type of seed, supplier, test date, source of seed, purity, and germination. Purity is the percentage of pure seed. Germination is the percentage of pure seed that will produce normal plants when planted under favorable conditions.

To compute Pure Live Seed multiply the "germination percent" times the "purity" and divide that by 100 to get Pure Live Seed.

$$\text{Pure Live Seed (PLS)} = \frac{\%\,\text{Germination} \times \%\,\text{Purity}}{100}$$

For example, the PLS for a lot of Kentucky Blue grass with 75% purity and 96% germination would be calculated as follows:

$$\frac{(96) \times (75)}{100} = 72\%\ \text{Pure Live Seed}$$

For 10lbs of PLS from this lot =

$$\frac{10}{0.72} = 13.9\ \text{lbs}$$

Therefore, 13.9 lbs of seed is the actual weight needed to meet 10lbs PSL from this specific seed lot.

Time of Seeding: The optimum timing for the general seed mixture is early spring. Permanent seedings may be made any time of year if properly mulched and adequate moisture is provided. Late June through early August is not a good time to seed, but may facilitate covering the land without additional disturbance if construction is completed. Portions of the seeding may fail due to drought and heat. These areas may need reseeding in late summer/fall or the following spring.

Method of seeding: Broadcasting, drilling, cultipack type seeding, or hydroseeding are acceptable methods. Proper soil to seed contact is key to successful seedings.

Mulching: Mulching is essential to obtain a uniform stand of seeded plants. Optimum benefits of mulching new seedings are obtained with the use of small grain straw applied at a rate of 2 tons per acre, and anchored with a netting or tackifier. See the Standard and Specifications for Mulching for choices and requirements.

Irrigation: Watering may be essential to establish a new seeding when a drought condition occurs shortly after a new seeding emerges. Irrigation is a specialized practice and care must be taken not to exceed the application rate for the soil or subsoil. When disconnecting irrigation pipe, be sure pipes are drained in a safe manor, not creating an erosion concern.

80% Perennial Vegetative Cover

50% Perennial Vegetative Cover

Table 4.4
Permanent Construction Area Planting Mixture Recommendations

Seed Mixture	Variety	Rate in lbs./acre (PLS)	Rate in lbs./ 1, 000 ft^2
Mix #1			
Creeping red fescue	Ensylva, Pennlawn, Boreal	10	.25
Perennial ryegrass	Pennfine, Linn	10	.25
*This mix is used extensively for shaded areas.			
Mix #2			
Switchgrass	Shelter, Pathfinder, Trailblazer, or Blackwell	20	.50
*This rate is in pure live seed, this would be an excellent choice along the upland edge of a wetland to filter runoff and provide wildlife benefits. In areas where erosion may be a problem, a companion seeding of sand lovegrass should be added to provide quick cover at a rate of 2 lbs. per acre (0.05 lbs. per 1000 sq. ft.).			
Mix #3			
Switchgrass	Shelter, Pathfinder, Trailblazer, or Blackwell	4	.10
Big bluestem	Niagara	4	.10
Little bluestem	Aldous or Camper	2	.05
Indiangrass	Rumsey	4	.10
Coastal panicgrass	Atlantic	2	.05
Sideoats grama	El Reno or Trailway	2	.05
Wildflower mix		.50	.01
*This mix has been successful on sand and gravel plantings. It is very difficult to seed without a warm season grass seeder such as a Truax seed drill. Broadcasting this seed is very difficult due to the fluffy nature of some of the seed, such as bluestems and indiangrass.			
Mix #4			
Switchgrass	Shelter, Pathfinder, Trailblazer, or Blackwell	10	.25
Coastal panicgrass	Atlantic	10	.25
*This mix is salt tolerant, a good choice along the upland edge of tidal areas and roadsides.			
Mix #5			
Saltmeadow cordgrass (Spartina patens)—This grass is used for tidal shoreline protection and tidal marsh restoration. It is planted by vegetative stem divisions. 'Cape' American beachgrass can be planted for sand dune stabilization above the saltmeadow cordgrass zone.			
Mix #6			
Creeping red fescue	Ensylva, Pennlawn, Boreal	20	.45
Chewings Fescue	Common	20	.45
Perennial ryegrass	Pennfine, Linn	5	.10
Red Clover	Common	10	.45
*General purpose erosion control mix. Not to be used for a turf planting or play grounds.			

STANDARD AND SPECIFICATIONS FOR RECREATION AREA SEEDING

Definition & Scope

Establishing **permanent** grasses, legumes, vines, shrubs, trees, or other plants, or selectively reducing stand density and trimming woody plants, to improve an area for recreation. To increase the attractiveness and usefulness of recreation areas and to protect the soil and plant resources.

Conditions Where Practice Applies

On any area planned for recreation use, lawns, and areas that will be maintained in a closely mowed condition.

Specifications

ESTABLISHING GRASSES (Turfgrass)

The following applies for playgrounds, parks, athletic fields, camping areas, picnic areas, passive recreation areas such as lawns, and similar areas.

1. Time of Planting

Fall planting is preferred. Seed after August 15. In the spring, plant until May 15.

If seeding is done between May 15 and August 15, irrigation may be necessary to ensure a successful seeding.

2. Site Preparation

   A. Install needed water and erosion control measures and bring area to be seeded to desired grades. A minimum of 4 in. topsoil is required.

   B. Prepare seedbed by loosening soil to a depth of 4-6 inches and decompacting required areas per Soil Restoration Standard.

   C. See Standard and Specification of Topsoiling.

   D. Lime to a pH of 6.5. See Lime Application Standard.

   E. **Fertilize as per soil test** or, if soil must be fertilized before results of a soil test can be obtained to determine fertilizer needs, apply commercial fertilizer at 850 pounds of 5-5-10 or equivalent per acre (20 lbs/1,000 sq. ft.). See Fertilizer Application Standard.

   F. Incorporate lime and fertilizer in top 2-4 inches of topsoil.

   G. Smooth. Remove sticks, foreign matter, and stones over 1 inch in diameter, from the surface. Firm the seedbed.

3. Planting

Use a cultipacker type seeder if possible. Seed to a depth of 1/8 to 1/4 inch. If seed is to be broadcast, cultipack or roll after seeding. If hyroseeded, lime and fertilizer may be applied through the seeder, and rolling is not practical.

4. Mulching

Mulch all seedings in accordance with Standard and Specifications for Mulching. Small grain straw is the best material.

5. Seed Mixtures

Select seed mixture for site conditions and intended use from Table 4.5.

6. Contact Cornell Cooperative Extension Turf Specialist for suitable varieties.

Turf-type tall fescues have replaced the old KY31 tall fescues. New varieties have finer leaves and are the most resistant grass to foot traffic. Do not mix it with fine textured grasses such as bluegrass and red fescue.

Common ryegrass and redtop, which are relatively short lived species, provide quick green cover. Improved lawn cultivars of perennial ryegrass provide excellent quality turf, but continue to lack winter hardiness.

Common white clover can be added to mixtures at the rate of 1-2 lbs/acre to help maintain green color during the dry summer period; however, they will not withstand heavy traffic. Avoid using around swimming areas as flowers attract bees which can be easily stepped on.

Table 4.5
Recreation Turfgrass Seed Mixture

Site - Use	Species (% by weight)	lbs/1.000 ft^2 (PLS)	lbs/acre (PLS)
Sunny Sites (well, moderately well, and somewhat poorly drained soils)	***Athletic fields and similar areas***		
	80% Hard fescue	2.4-3.2	105-138
	20% Perennial ryegrass	0.6-0.8	25-37
		3.0-4.0	130-175
	OR, for southern and eastern, NY 50% Hard fescue	1.5-2.0	65-88
	50% perennial ryegrass	1.5-2.0	65-87
		3.0-4.0	130-175
	OR, 100% Creeping Red Fescue	3.4-4.6	150-200
	General recreation areas and lawns (Medium to high maintenance)		
	65% Creeping red fescue	2.0-2.6	85-114
	20% Perennial ryegrass	0.6-0.8	26-35
	15% Fine fescue	0.4-0.6	19-26
		3.0-4.0	130-175
	OR, 100% Creeping red fescue	3.4-4.6	150-200
Sunny Droughty Sites (general recreation areas and lawns, low maintenance) (somewhat excessively to excessively drained soils, excluding Long Island)	65% Fine fescue	2.6-3.3	114-143
	15% Perennial ryegrass	0.6-0.7	26-33
	20% Creeping red fescue	0.8-1.0	35-44
		4.0-5.0	175-220
	OR, 100% Creeping red fescue	3.4-4.6	150-200
Shady Dry Sites (well to somewhat poorly drained soils)	65% fine fescue	2.6-3.3	114-143
	15% perennial ryegrass	0.6-0.7	26-33
	20% Creeping red fescue	0.8-1.0	35-44
	OR	4.0-5.0	174-220
	80% blend of shade-tolerant Ceral rye	2.4-3.2	105-138
	20% perennial ryegrass	0.6-0.8	25-37
	OR	3.0-4.0	130-175
	100% Creeping red fescue	3.4-4.6	150-200
Shady Wet Sites (somewhat poor to poorly drained soils)	70% Creeping red fescue	1.4-2.1	60-91
	30% blend of shade-tolerant Hard fescue	0.6-0.9	25-39
	OR	2.0-3.0	85-130
	100% Chewings fescue	3.4-4.6	150-200

For varieties suitable for specific locations, contact Cornell Cooperative Extension Turf Specialist.

Reference: Thurn, M.C., N.W. Hummel, and A.M. Petrovic. Cornell Extension Pub. Info. Bulletin 185 Revised. HomeLawns Establishment and Maintenance. 1994.

7. Fertilizing—First Year

Apply fertilizer as indicated by the soil test three to four weeks after germination (spring seedlings). If test results have not been obtained, apply 1 pound nitrogen/1,000 square feet using a complete fertilizer with a 2-1-1 or 4-1-3 ratio. Summer and early fall seedings, apply as above unless air temperatures are above 85ºF for an extended period. Wait for cooler temperatures to fertilize. Late fall/ winter seedings, fertilize in spring.

8. Restrict Use

New seedlings should be protected from use for one full year or a spring and fall growth cycle where possible to allow development of a dense sod with good root structure.

MAINTAINING GRASSES

1. Maintain a pH of 6.0 - 7.0.

2. Fertilize in late May to early June as follows with 5-5-10 analysis fertilizer at the rate of 5 lbs./1,000 sq. ft. and repeat in late August if sod density is not adequate. Avoid fertilizing when heat is greater than 85ºF. Top dress weak sod annually in the spring, but at least once every 2 to 3 years. **Fertilize in accordance with soil test analysis**, after determining adequate topsoil depth exists.

3. Aerate compacted or heavily used areas, like athletic fields, annually as soon as soil moisture conditions permit. Aerate area six to eight times using a spoon or hollow tine type aerator. Do not use solid spike equipment.

4. Reseed bare and thin areas annually with original seed mix.

STANDARD AND SPECIFICATIONS FOR RETAINING WALLS

Definition & Scope

A **permanent** structural wall constructed and located to prevent soil movement by retaining soil in place and preventing slope failures and movement of material down steep slopes.

Conditions Where Practice Applies

A retaining wall may be used where site constraints will not allow slope shaping and seeding to stabilize an area. Slope areas that demonstrate seepage problems or experience erosive conditions at the toe can utilize retaining walls to help stabilize these areas. Retaining walls can be built from mortared block or stone, cast-in-place concrete, railroad ties, gabions, and more recently, precast concrete modular units and segmented walls that form a gravity retaining wall (see Figure 4.16 and 4.17). These precast units allow for ease and quickness of installation while their granular backfill provides drainage. Selection of materials and type of wall should be based on hazard potential, load conditions, soil parameters, groundwater conditions, site constraints, and aesthetics.

Design Criteria

The design of any retaining wall structure must address the aspects of foundation bearing capacity, sliding, overturning, drainage and loading systems. **These are complex systems that should be designed by a licensed professional engineer.**

Bearing Capacity – A minimum factor of safety of 1.5 should be maintained as the ratio of the ultimate bearing capacity to the designed unit loading. Spread footers and other methods may be used to meet factor requirements.

Sliding – A minimum factor of 2.0 should be maintained against sliding. This factor can be reduced to 1.5 when passive pressures on the front of the wall are ignored.

Overturning – A minimum factor of safety of 1.5 should be used as the ratio of the resisting moment (that which tends to keep the wall in place) to the overturning moment.

Drainage – Unless adequate provisions are made to control both surface and groundwater behind the retaining wall, a substantial increase in active pressures tending to slide or overturn the wall will result. When backfill is sloped down to a retaining wall, surface drainage should be provided. Drainage systems with adequate outlets should be provided behind retaining walls that are placed in cohesive soils. Drains should be graded or protected by filters so soil material will not move through the drainfill.

Load systems – Several different loads or combination of loads need to be considered when designing a retaining wall. The minimum load is the level backfill that the wall is being constructed to retain. Its unit weight will vary depending on its composition.

Additional loads such as line loads, surcharge loads, or slope fills, will add to make the composite design load system for the wall.

Construction Specifications

Concrete Walls

1. Foundation will be prepared by excavating to the lines and grades shown on the drawings and removing all objectionable material.
2. Subgrade will be compacted and kept moist at least 2 hours prior to placement of concrete.
3. Steel reinforcing will be in accordance with the schedule on the drawings and kept free of rust, scale, or dirt.
4. Exposed edges will be chamfered ¾ inches.
5. Drainfill will meet the gradations shown on the drawings.

6. Weep holes will be provided as drain outlets as shown on the drawings.

7. Concrete will be poured and cured in accordance with American Concrete Institute (ACI) specifications.

Precast Units

1. Foundation will be prepared by excavating to the lines and grades shown on the drawings.

2. Subgrade will be compacted and trimmed to receive the leveling beam.

3. Precast units will be placed in accordance with the manufacturers recommendation.

4. Granular fill placed in the precast bins shall be placed in 3-foot lifts, leveled off and compacted with a plate vibrator.

Segmented Walls

1. Foundation will be prepared by excavating to the lines and grades shown on the drawings.

2. Sub-grade will be compacted and screeded to form the base for the first course of wall units.

3. Units will be placed in accordance with the manufacturers recommendations, with each succeeding lift anchored and pinned as specified.

4. Granular fill will be placed behind the segmented wall to provide drainage. It shall be compacted with a plate vibrator. A drainage outlet will be provided as specified on the construction drawings.

Gabions

1. Foundation will be prepared by excavating to the lines and grades shown on the drawings.

2. Subgrade will be compacted and leveled to receive first layer of gabions. The first row will be keyed into the existing grade at the toe, a minimum of 1.5 feet.

3. Gabions will be placed according to the manufacturers recommendations.

4. Gabions will be filled with stone or crushed rock from 4 to 8 inches in diameter.

Non-Mortared Stone Walls

1. Foundation will be prepared by excavating to the lines and grade shown on the drawings.

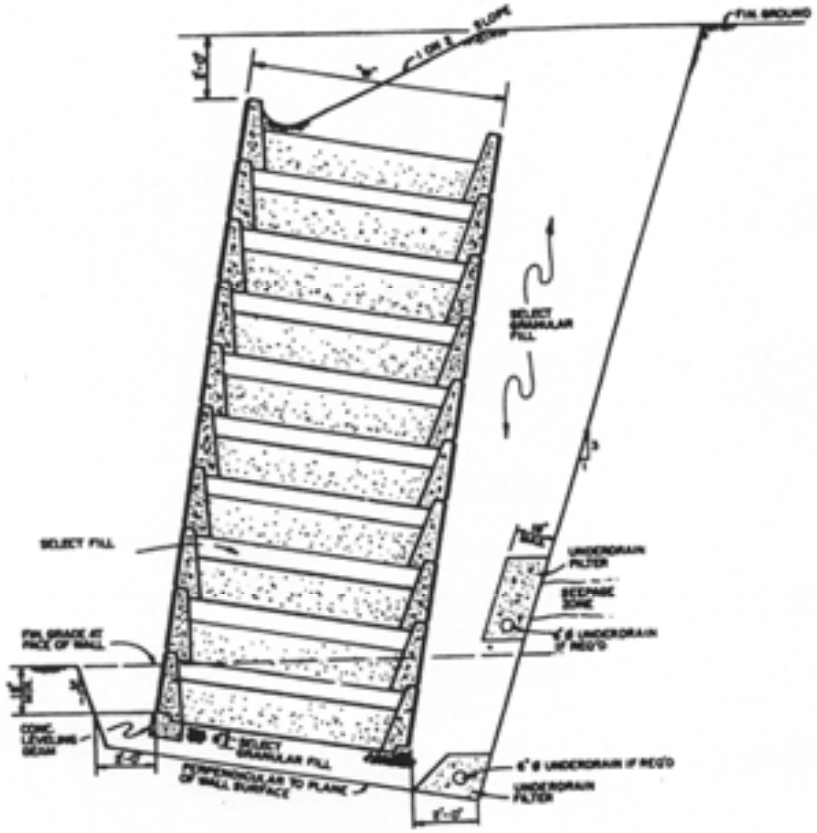
2. Subgrade will be compacted and leveled to receive monolithic stone. First row will be placed 1.0 feet below design toe elevation.

3. Stone will be placed horizontally with long dimension parallel to face of wall except at return ends.

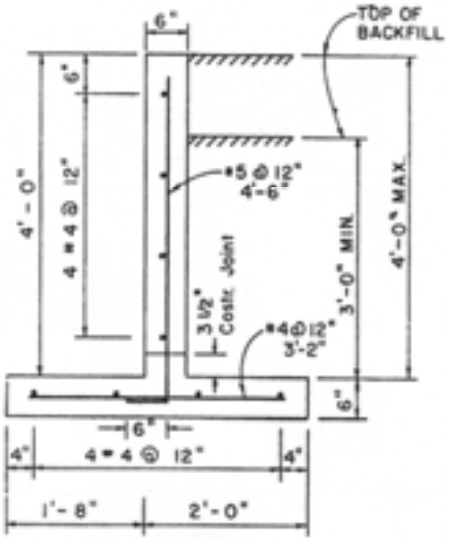
4. Maximum of 3 lifts of stone each approximately 2’ thick without pinning. Where stones do not fit in good ontact, pinning with two steel #8 re-bar dowels is required.

5. Backside of stone will be filled with a minimum of 2’ of #1 and #2 stone between filter fabric against parent soil and rock to provide drainage.

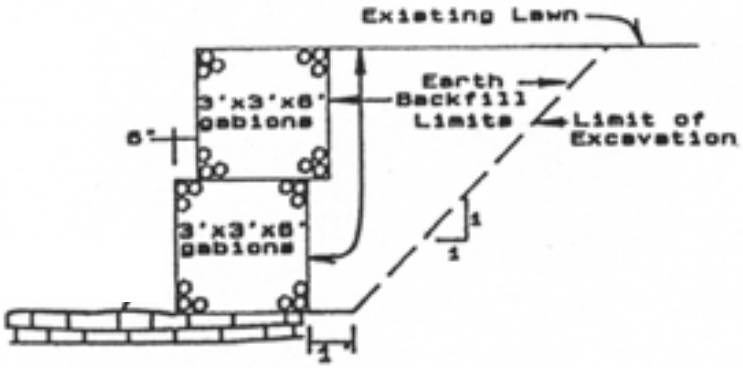
Figure 4.16
Typical Retaining Wall Examples
(Schematic only - not to be used for design)



Precast Units

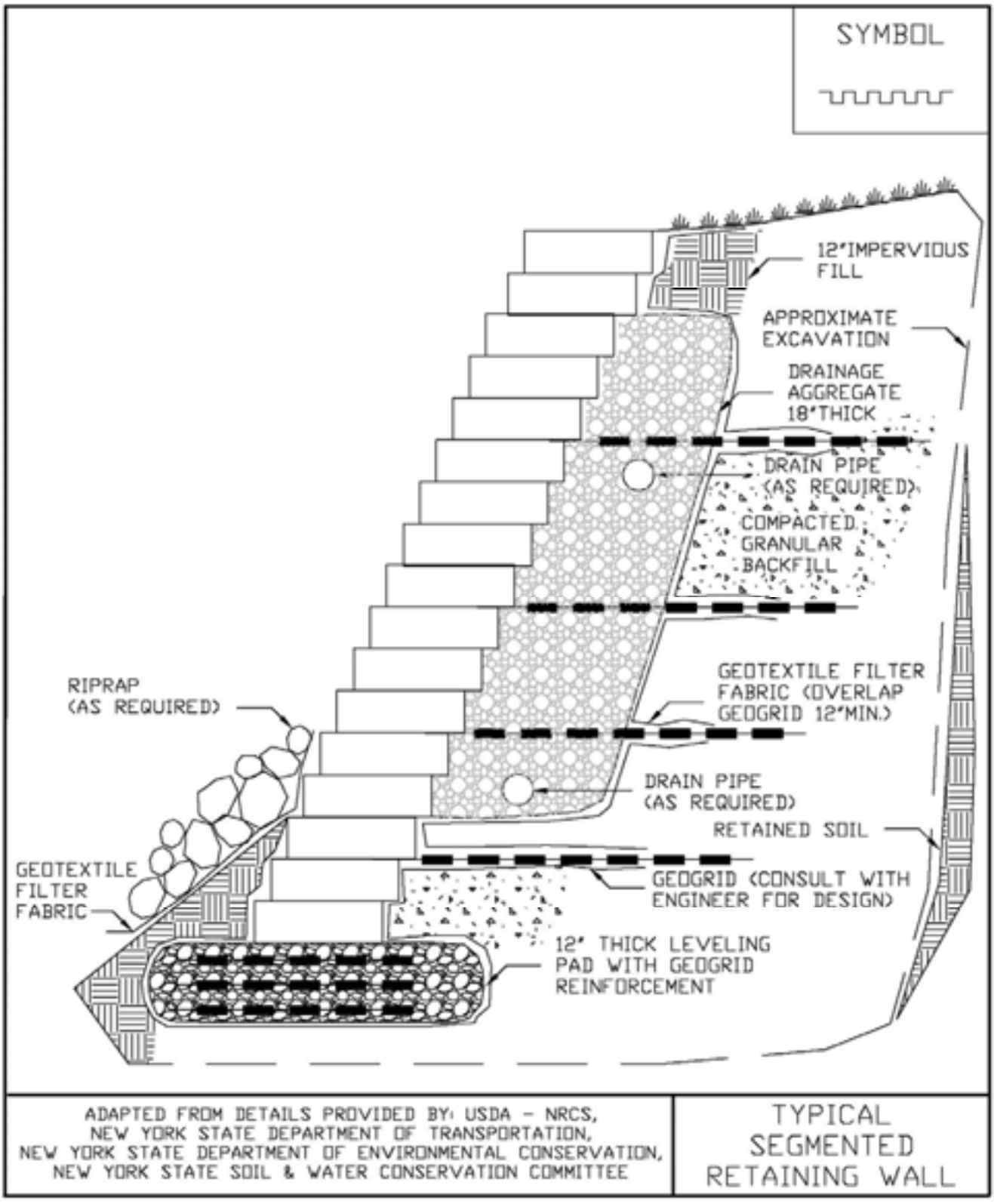


Cast In Place Concrete



Gabions

Figure 4.17
Typical Segmented Retaining Wall Example
(Schematic only - not to be used for design)



STANDARD AND SPECIFICATIONS FOR SOIL RESTORATION

Definition & Scope

The decompaction of areas of a development site or construction project where soils have been disturbed to recover the original properties and porosity of the soil; thus providing a sustainable growth medium for vegetation, reduction of runoff and filtering of pollutants from stormwater runoff.

Conditions Where Practice Applies

Soil restoration is to be applied to areas whose heavy construction traffic is done and final stabilization is to begin. This is generally applied in the cleanup, site restoration, and landscaping phase of construction followed by the permanent establishment of an appropriate ground cover to maintain the soil structure. Soil restoration measures should be applied over and adjacent to any runoff reduction practices to achieve design performance.

Design Criteria

1. Soil restoration areas will be designated on the plan views of areas to be disturbed.
2. Soil restoration will be completed in accordance with Table 4.6 on page 4.53.

Specification for Full Soil Restoration

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following Soil Restoration steps applied:

1. Apply 3 inches of compost over subsoil. The compost shall be well decomposed (matured at least 3 months), weed-free, organic matter. It shall be aerobically composted, possess no objectionable odors, and contain less than 1%, by dry weight, of man-made foreign matter. The physical parameters of the compost shall meet the standards listed in Table 5.2 - Compost Standards Table, except for "Particle Size" 100% will pass the 1/2" sieve. **Note: All biosolids compost produced in New York State (or approved for importation) must meet NYS DEC's 6 NYCRR Part 360 (Solid Waste Management Facilities) requirements. The Part 360 requirements are equal to or more stringent than 40 CFR Part 503 which ensure safe standards for pathogen reduction and heavy metals content.**

2. Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor mounted disc, or tiller, to mix and circulate air and compost into the subsoil.
3. Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site.
4. Apply topsoil to a depth of 6 inches.
5. Vegetate as required by the seeding plan. Use appropriate ground cover with deep roots to maintain the soil structure.
6. Topsoil may be manufactured as a mixture or a mineral component and organic material such as compost.

At the end of the project an inspector should be able to push a 3/8" metal bar 12 inches into the soil just with body weight. This should not be performed within the drip line of any existing trees or over utility installations that are within 24 inches of the surface.

Maintenance

Keep the site free of vehicular and foot traffic or other weight loads. Consider pedestrian footpaths.

Table 4.6
Soil Restoration Requirements

Type of Soil Disturbance	Soil Restoration Requirement		Comments/Examples
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only - no change in grade	HSG A&B	HSG C&D	Protect area from any ongoing construction activities.
	Apply 6 inches of topsoil	Aerate* and apply 6 inches of topsoil	
Areas of cut or fill	HSG A&B	HSG C&D	
	Aerate* and apply 6 inches of topsoil	Apply full Soil Restoration**	
Heavy traffic areas on site (especially in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)	Apply full Soil Restoration (decompaction and compost enhancement)		
Areas where Runoff Reduction and/or Infiltration practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.		Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area
Redevelopment projects	Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.		

* Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.
** Per "Deep Ripping and De-compaction, DEC 2008".

STANDARD AND SPECIFICATIONS FOR STABILIZATION WITH SOD

Definition & Scope

Stabilizing restored, exposed soil surfaces by establishing long term stands of grass with sod to reduce damage from sediment and runoff to downstream areas and enhance natural beauty.

Conditions Where Practice Applies

On exposed soils that have a potential for causing off site environmental damage where a quick vegetative cover is desired. Moisture, either applied or natural, is essential to success.

Design Criteria

1. Sod shall be bluegrass or a bluegrass/red fescue mixture or a perennial ryegrass for average sites. (CAUTION: Perennial ryegrass has limited cold tolerance and may winter kill.) Use turf type cultivars of tall fescue for shady, droughty, or otherwise more critical areas. For variety selection, contact Cornell Cooperative Extension Turf Specialist.

2. Sod shall be machine cut at a uniform soil thickness of 3/4 inch, plus or minus 1/4 inch. Measurement for thickness shall exclude top growth and thatch.

3. Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically from a firm grasp on the upper 10 percent of the section.

4. Sod shall be free of weeds and undesirable coarse weedy grasses. Wild native or pasture grass sod shall not be used unless specified.

5. Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.

6. Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period shall be inspected and approved by the contracting officer or his designated representative prior to its installation.

Site Preparation

Fertilizer and lime application rates shall be determined by soil tests. Under unusual circumstances where there is insufficient time for a complete soil test and the contracting officer agrees, fertilizer and lime materials may be applied in amounts shown in subsection 2 below. Slope land such as to provide good surface water drainage. Avoid depressions or pockets.

1. Prior to sodding, the surface shall be smoothed and cleared of all trash, debris, and of all roots, brush, wire, grade stakes and other objects that would interfere with planting, fertilizing or maintenance operations.

2. **The soil should be tested to determine the amounts of amendments needed.** Where the soil is acid or composed of heavy clays, ground limestone shall be spread to raise the pH to 6.5. If the soil must be fertilized before results of a soil test can be obtained to determine fertilizer needs, apply commercial fertilizer at 20 lbs. of 5-5-10 (or equivalent) and mix into the top 3 inches of soil with the required lime for every 1,000 square feet. Soil should be moist prior to sodding. Arrange for temporary storage of sod to keep it shaded and cool.

Sod Installation

1. For the operation of laying, tamping, and irrigating for any areas, sod shall be completed within eight hours. During periods of excessively high temperature, the soil shall be lightly moistened immediately prior to laying the sod.

2. The first row of sod shall be laid in a straight line with subsequent rows placed parallel to, and tightly wedged against, each other. Lateral joints shall be staggered to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots. On sloping areas where erosion may be a problem, sod shall be laid with the long edges parallel to the contour and with

staggered joints.

3. Secure the sod by tamping and pegging, or other approved methods. As sodding is completed in any one section, the entire area shall be rolled or tamped to ensure solid contact of roots with the soil surface.

4. Sod shall be watered immediately after rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Keep sod moist for at least two weeks.

Sod Maintenance

1. In the absence of adequate rainfall, watering shall be performed daily, or as often as deemed necessary by the inspector, during the first week and in sufficient quantities to maintain moist soil to a depth of 4 inches. Watering should be done in the morning. Avoid excessive watering during applications.

2. After the first week, sod shall be watered as necessary to maintain adequate moisture and ensure establishment.

3. The first mowing should not be attempted until sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2 and 3 inches unless otherwise specified. Avoid heavy mowing equipment for several weeks to prevent rutting.

4. If the soil must be fertilized before results of a soil test can be obtained to determine fertilizer needs, apply fertilizer three to four weeks after sodding, at a rate of 1 pound nitrogen/1,000 sq.ft. Use a complete fertilizer with a 2-1-1 ratio.

5. Weed Control: Target herbicides for weeds present. Consult current Cornell Pest Control Recommendations for Commercial Turfgrass Management or consult the local office of Cornell Cooperative Extension.

6. Disease Control: Consult the local office of the Cornell Cooperative Extension.

Additional References

1. Home Lawns, Establishment and Maintenance, CCE Information Bulletin 185, Revised November 1994. Cornell University, Ithaca, NY.

2. Installing a Sod Lawn. CCE Suffolk County, NY. Thomas Kowalsick February 1994, Revised January 1999. www.cce.cornell.edu/counties/suffolk/grownet

STANDARD AND SPECIFICATIONS FOR TEMPORARY CONSTRUCTION AREA SEEDING

Definition & Scope

Providing temporary erosion control protection to disturbed areas and/or localized critical areas for an interim period by covering all bare ground that exists as a result of construction activities or a natural event. Critical areas may include but are not limited to steep excavated cut or fill slopes and any disturbed, denuded natural slopes subject to erosion.

Conditions Where Practice Applies

Temporary seedings may be necessary on construction sites to protect an area, or section, where final grading is complete, when preparing for winter work shutdown, or to provide cover when permanent seedings are likely to fail due to mid-summer heat and drought. The intent is to provide temporary protective cover during temporary shutdown of construction and/or while waiting for optimal planting time.

Criteria

Water management practices must be installed as appropriate for site conditions. The area must be rough graded and slopes physically stable. Large debris and rocks are usually removed. Seedbed must be seeded within 24 hours of disturbance or scarification of the soil surface will be necessary prior to seeding.

Fertilizer or lime are not typically used for temporary seedings.

IF: Spring or summer or early fall, then seed the area with ryegrass (annual or perennial) at 30 lbs. per acre (Approximately 0.7 lb./1000 sq. ft. or use 1 lb./1000 sq. ft.).

IF: Late fall or early winter, then seed Certified 'Aroostook' winter rye (cereal rye) at 100 lbs. per acre (2.5 lbs./1000 sq. ft.).

Any seeding method may be used that will provide uniform application of seed to the area and result in relatively good soil to seed contact.

Mulch the area with hay or straw at 2 tons/acre (approx. 90 lbs./1000 sq. ft. or 2 bales). Quality of hay or straw mulch allowable will be determined based on long term use and visual concerns. Mulch anchoring will be required where wind or areas of concentrated water are of concern. Wood fiber hydromulch or other sprayable products approved for erosion control (nylon web or mesh) may be used if applied according to manufacturers' specification. Caution is advised when using nylon or other synthetic products. They may be difficult to remove prior to final seeding and can be a hazard to young wildlife species.

STANDARD AND SPECIFICATIONS FOR TOPSOILING

Definition & Scope

Spreading a specified quality and quantity of topsoil materials on graded or constructed subsoil areas to provide acceptable plant cover growing conditions, thereby reducing erosion; to reduce irrigation water needs; and to reduce the need for nitrogen fertilizer application.

Conditions Where Practice Applies

Topsoil is applied to subsoils that are droughty (low available moisture for plants), stony, slowly permeable, salty or extremely acid. It is also used to backfill around shrub and tree transplants. This standard does not apply to wetland soils.

Design Criteria

1. Preserve existing topsoil in place where possible, thereby reducing the need for added topsoil.

2. Conserve by stockpiling topsoil and friable fine textured subsoils that must be stripped from the excavated site and applied after final grading where vegetation will be established. Topsoil stockpiles must be stabilized. Stockpile surfaces can be stabilized by vegetation, geotextile or plastic covers. This can be aided by orientating the stockpile lengthwise into prevailing winds.

3. Refer to USDA Natural Resource Conservation Service soil surveys or soil interpretation record sheets for further soil texture information for selecting appropriate design topsoil depths.

Site Preparation

1. As needed, install erosion and sediment control practices such as diversions, channels, sediment traps, and stabilizing measures, or maintain if already installed.

2. Complete rough grading and final grade, allowing for depth of topsoil to be added.

3. Scarify all compact, slowly permeable, medium and fine textured subsoil areas. Scarify at approximately right angles to the slope direction in soil areas that are steeper than 5 percent. Areas that have been overly compacted shall be decompacted in accordance with the Soil Restoration Standard.

4. Remove refuse, woody plant parts, stones over 3 inches in diameter, and other litter.

Topsoil Materials

1. Topsoil shall have at least 6 percent by weight of fine textured stable organic material, and no greater than 20 percent. Muck soil shall not be considered topsoil.

2. Topsoil shall have not less than 20 percent fine textured material (passing the NO. 200 sieve) and not more than 15 percent clay.

3. Topsoil treated with soil sterilants or herbicides shall be so identified to the purchaser.

4. Topsoil shall be relatively free of stones over 1 1/2 inches in diameter, trash, noxious weeds such as nut sedge and quackgrass, and will have less than 10 percent gravel.

5. Topsoil containing soluble salts greater than 500 parts per million shall not be used.

6. Topsoil may be manufactured as a mixture of a mineral component and organic material such as compost.

Application and Grading

1. Topsoil shall be distributed to a uniform depth over the area. It shall not be placed when it is partly frozen, muddy, or on frozen slopes or over ice, snow, or standing water puddles.

2. Topsoil placed and graded on slopes steeper than 5 percent shall be promptly fertilized, seeded, mulched, and stabilized by “tracking” with suitable equipment.

3. Apply topsoil in the amounts shown in Table 4.7 below:

Table 4.7 - Topsoil Application Depth		
Site Conditions	**Intended Use**	**Minimum Topsoil Depth**
1. Deep sand or loamy sand	Mowed lawn	6 in.
	Tall legumes, unmowed	2 in.
	Tall grass, unmowed	1 in.
2. Deep sandy loam	Mowed lawn	5 in.
	Tall legumes, unmowed	2 in.
	Tall grass, unmowed	none
3. Six inches or more: silt loam, clay loam, loam, or silt	Mowed lawn	4 in.
	Tall legumes, unmowed	1 in.
	Tall grass, unmowed	1 in.

STANDARD AND SPECIFICATIONS FOR TREES, SHRUBS, AND VINES

Definition & Scope

Establishing trees, shrubs, and vines or selectively reducing stand density and trimming woody plants to protect the soil and plant resources, improve an area for recreation and increase the attractiveness and usefulness of areas.

Conditions Where Practice Applies

On any area planned for recreation or landscape use such as yard areas, leisure areas, picnic areas, and park lands providing outdoor recreational opportunities.

Criteria and Specifications

1. Planting nursery stock

   A. Select species to serve the intended purpose. See Appendix G, Table G.1**,** "Trees Suitable for Landscape and Conservation Plantings in New York." Where planting of trees is to be done in recreation areas, use those species resistant to compaction listed in Table G.2, "Susceptibility of Tree Species to Compaction" whenever possible.

   B. Plant Materials

      1) Plants shall conform to the species, variety, size, number, and conditions as stated in a conservation plan or on a plant list shown on landscape drawings. "American Standard for Nursery Stock," by American Association of Nurserymen, shall be used to develop the plant list for landscape drawings and to check quality of plant materials.

      2) Durable, legible labels with the scientific and common name and cultivar shall be securely attached to plants, bundles of seedlings, containers, and/or flats.

   C. Plant Protection

      Prior to delivery, the trunk, branches, and foliage of the plants shall be sprayed with non-toxic antidesiccant, applied according to the manufacturer's recommendations. This does not apply to state nursery seedlings.

   D. Planting Time

      Deciduous trees and shrubs: April 1 to June 1 and October 15 to December 15. Evergreen trees and shrubs: April 1 to June 1 and September 1 to November 15.

   E. Spacing

      Plant all trees and shrubs well back from buildings to allow for mature crown size. The following are guides for planning:

Large Trees	50-60 feet apart
Small Trees	20-30 feet apart
Columnar Species	6-8 feet apart
Hedges	1-4 feet apart
Shrubs	For clumps, plan spacing so mature shrubs will be touching or overlapping by only 1 or 2 feet

   F. Site Preparation

      1) Individual sites for planting seedlings can be prepared by scalping the sod away from a four foot square area where the seedling is to be planted.

      2) All planting beds shall be cultivated to a depth of 8 inches, or chemically treated for weed control. Remove objectionable objects that will interfere with maintenance of site.

   G. Planting

      1) Plants shall be located as shown on plans and/or drawings and, where necessary, located on the site by stakes, flags or other means.

      2) Prior to planting, remove galvanized wire basket securing root ball, untie and roll down burlap covering from around the stem.

3) The plants shall be set upright in holes as illustrated in Figure G.1 in Appendix G.

4) All plants shall be thoroughly watered on the same day of planting. Plants that have settled shall be reset to grade.

H. Wrapping

Immediately after planting, wrap deciduous tree trunks from the bottom to the first limb with a 4 inch wide bituminous impregnated, insect resistant tape or paper manufactured for that purpose. Tie with jute (bag strings) at top and bottom. The wrap should be removed per nursery recommendations.

I. Mulching

Mulch the disturbed area around individual trees and shrubs with a 2-3" layer of wood chips. Pull wood chips 1 inch away from the base of shrubs to avoid fungus development.

J. Pruning

After planting, prune to remove injured twigs and branches. The natural shape of the plant should not be changed.

K. Cleanup and Maintenance

1) After all work is complete, all excess soil, peat moss, debris, etc., shall be removed from the site.

2) Water plants two weeks after planting. For two years, water plants every two weeks during dry periods, which exceed three weeks without a good soaking rain, or water as needed in accordance with local conditions. Shrubs may require 5 to 10 gallons and trees, 20 to 30 gallons for each watering.

3) Remove trunk wrap per nursery recommendation.

2. Transplanting "Wild" Stock

Successful transplanting of wild stock will require heavy equipment and considerable labor as a large weight of soil must be moved with the roots.

A. Select trees and shrubs with good form and full crowns.

B. Transplant only when plants are dormant and soil is moist. Wrap soil ball with burlap to prevent soil from separating from roots.

C. Table 4.8 shows minimum diameter and approximate weight of soil ball that must be moved with each size plant.

D. Plant and maintain as described above for nursery stock.

PRUNING AND THINNING

Use	Cleared Width Each Side of Trail Tread (ft.)	Cleared Height (ft.)
TRAILS		
Hiking	1	8
Bicycle	2	10
Motorbike	2	10
Horse	2	12
X-Country Ski	Total: 3-12	12[1]
Snowmobile	Total: 6-12	12[1]
PICNIC & CAMPING AREAS		
Campfire/Grill	10 ft. diam.	15

[1] Includes allowance for snow depth and snow load on branches

1. Pruning

A. Remove trees, limbs, and limb stubs to the above widths and heights specified for the intended use.

B. Remove dead, diseased, or dying limbs that may fall.

C. Do not remove more than one-third of the live crown of a tree in a year.

D. Cut limbs flush to the branch bark ridge.

E. Use the 3 or 4 cut pruning method on all branches over 2 inches in diameter: First cut about one-third the way through the underside of the limb (about 6-12 inches from the tree trunk). Then (approximately an inch further out) make a second cut through the limb from the upper side. When the branch is removed, there is no splintering of the main tree trunk. Remove the stub. If the branch is larger than 5-6 inches in diameter, use the four cut system. Cuts 1 and 2 remain the same and cut 3 should be from the underside of the limb, on the outside of the branch collar. Cut 4 should be from the top and in alignment with the 3rd cut. Cut 3 should be 1/4 to 1/3 the way through the limb. This will prevent the bark from peeling down the trunk. Do not paint the cut surface.

2. Thinning

   A. Remove dead, diseased, dying, poorly anchored, or ice damaged trees that pose a hazard to recreationists or that interfere with intended use.

   B. To maintain grass cover in a wooded area, thin according to formula Dx3 (average diameter of the trunk of overstory trees, in inches, times three—the answer is the spacing between trees to be left, in feet). For example, for trees with average diameter of 6 inches, spacing after thinning should leave trees 18 feet apart on average. Crown cover after thinning should be about 50 percent.

   C. Selectively thin as needed to favor those trees that are most "resistant" to compaction around their roots. See Table G.2**,** "Susceptibility of Tree Species to Compaction" in Appendix G. If the soil on the site is naturally well drained, those species in the "intermediate" group may also be favored.

Table 4.8
Size and Weight of Earth Ball Required to Transplant Wild Stock

Shade Trees (Maple, Ash, Oak, Birch, etc.)			Small Trees & Shrubs (Crabapple, Thornapple, Viburnum, Dogwood, etc.)		
Caliper[1] (Inches)	Minimum Diameter Ball (Inches)	Weight of Ball (lbs.)	Up to 6 ft. Height — 6 ft. and Caliper[1]	Minimum Diameter Ball (Inches)	Weight of Ball (lbs.)
1/2	14	88	2	12	55
3/4	16	130	3	14	88
1	18	186	4	16	130
1-1/4	20	227	5	18	186
1-1/2	22	302	3/4	18	186
1-3/4	24	390	1	20	227
2	28	621	1-1/2	22	302
3	32	836	1-3/4	24	390
3-1/2	38	1,400	2	28	621
4	42	1,887	2-1/2	32	836
			3	38	1,400

[1]Caliper is a diameter measurement of trees at a height of 6 inches above the ground.

STANDARD AND SPECIFICATIONS FOR VEGETATED ROCK GABIONS

Definition & Scope

A combination of vegetation with rock filled gabions used for slope stabilization by providing a retaining wall with plant canopy to reduce runoff, temperature, and provide a vegetated cover to hardened surfaces.

Conditions Where Practice Applies

On steep sloping areas such as road cuts, slumped areas, gully cuts, low fill areas, or areas that are subject to erosion, seepage and weathering and have a low to medium hazard potential should slope failure occur.

Design Criteria

Materials - shall be a native or nursery grown cultivars capable of performing intended function. The live branch cutting shall be 1/2" to 1" in diameter and long enough for each gabion row to extend the tops a minimum of 1 foot beyond the next upper gabion row and be in contact with the undisturbed soil behind the gabion wall.

Spacing - The plant cuttings shall be placed tightly side by side with stem contact with each other on top of each gabion row on a 1" layer of raked backfill.

Note: These can be complex systems that should be designed by a licensed professional engineer.

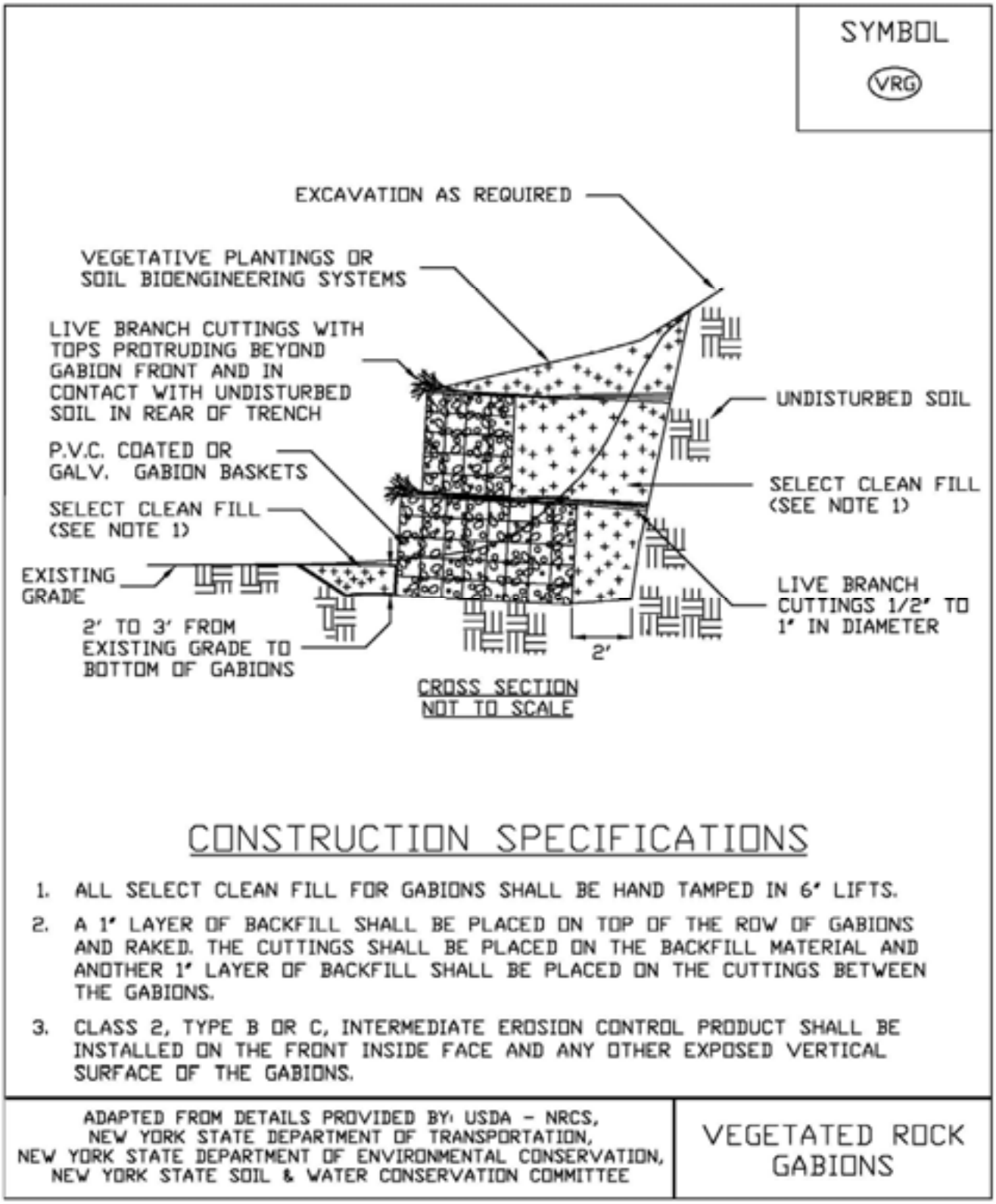
Construction Specifications

1. Prepare the foundation for the gabions by excavating to the lines and grades shown on the drawings.
2. Subgrade will be compacted and leveled to receive the first layer of gabions. The first row will be keyed into the existing grade at the toe, a minimum of 1.5 feet.
3. Gabions will be placed according to the design and filled with stone or crushed rock from 4-8 inches in diameter. A geotextile should be draped over the basket prior to placement of backfill or plant bedding.
4. Backfill behind with select clean fill and compact by hand tamping, or light mechanical tampers, in 6" lifts.
5. On top of each row of gabions place 1" of select backfill as a plant bedding prior to placement of plant cuttings.
6. Place plant cuttings in a tight configuration with stem to stem contact so plants extend beyond the next gabion facing by 1 foot and beyond the back of the wall in contact with native soil.
7. Grade above the final row of plant cuttings with select clean fill to a slope no steeper than 2 horizontal to 1 vertical.

Maintenance

Regular inspection and maintenance of this system should be conducted especially during the first year of establishment. Repairs should be made to gabions as necessary and all settled areas should be brought back to grade.

Figure 4.20
Vegetated Rock Gabions



STANDARD AND SPECIFICATIONS FOR COMPOST FILTER SOCK

Definition & Scope

A **temporary** sediment control practice composed of a degradable geotextile mesh tube filled with compost filter media to filter sediment and other pollutants associated with construction activity to prevent their migration offsite.

Condition Where Practice Applies

Compost filter socks can be used in many construction site applications where erosion will occur in the form of sheet erosion and there is no concentration of water flowing to the sock. In areas with steep slopes and/or rocky terrain, soil conditions must be such that good continuous contact between the sock and the soil is maintained throughout its length. For use on impervious surfaces such as road pavement or parking areas, proper anchorage must be provided to prevent shifting of the sock or separation of the contact between the sock and the pavement. Compost filter socks are utilized both at the site perimeter as well as within the construction areas. These socks may be filled after placement by blowing compost into the tube pneumatically, or filled at a staging location and moved into its designed location.

Design Criteria

1. Compost filter socks will be placed on the contour with both terminal ends of the sock extended 8 feet upslope at a 45 degree angle to prevent bypass flow.

2. Diameters designed for use shall be 12" – 32" except that 8" diameter socks may be used for residential lots to control areas less than 0.25 acres.

3. The flat dimension of the sock shall be at least 1.5 times the nominal diameter.

4. The **Maximum Slope Length** (in feet) above a compost filter sock shall not exceed the following limits:

Dia. (in.)	Slope %						
	2	**5**	**10**	**20**	**25**	**33**	**50**
8	225*	200	100	50	20	—	—
12	250	225	125	65	50	40	25
18	275	250	150	70	55	45	30
24	350	275	200	130	100	60	35
32	450	325	275	150	120	75	50
* Length in feet							

5. The compost infill shall be well decomposed (matured at least 3 months), weed-free, organic matter. It shall be aerobically composted, possess no objectionable odors, and contain less than 1%, by dry weight, of man-made foreign matter. The physical parameters of the compost shall meet the standards listed in Table 5.2 - Compost Standards Table. **Note: All biosolids compost produced in New York State (or approved for importation) must meet NYS DEC's 6 NYCRR Part 360 (Solid Waste Management Facilities) requirements. The Part 360 requirements are equal to or more stringent than 40 CFR Part 503 which ensure safe standards for pathogen reduction and heavy metals content. When using compost filter socks adjacent to surface water, the compost should have a low nutrient value.**

6. The compost filter sock fabric material shall meet the

7. Compost filter socks shall be anchored in earth with 2" x 2" wooden stakes driven 12" into the soil on 10 foot centers on the centerline of the sock. On uneven terrain, effective ground contact can be enhanced by the placement of a fillet of filter media on the disturbed area side of the compost sock.

8. All specific construction details and material specifications shall appear on the erosion and sediment control constructions drawings when compost filter socks are included in the plan.

Maintenance

1. Traffic shall not be permitted to cross filter socks.

2. Accumulated sediment shall be removed when it reaches half the above ground height of the sock and disposed of in accordance with the plan.

3. Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired in the manner required by the manufacturer or replaced within 24 hours of inspection notification.

4. Biodegradable filter socks shall be replaced after 6 months; photodegradable filter socks after 1 year. Polypropylene socks shall be replaced according to the manufacturer's recommendations.

5. Upon stabilization of the area contributory to the sock, stakes shall be removed. The sock may be left in place and vegetated or removed in accordance with the stabilization plan. For removal the mesh can be cut and the compost spread as an additional mulch to act as a soil supplement.

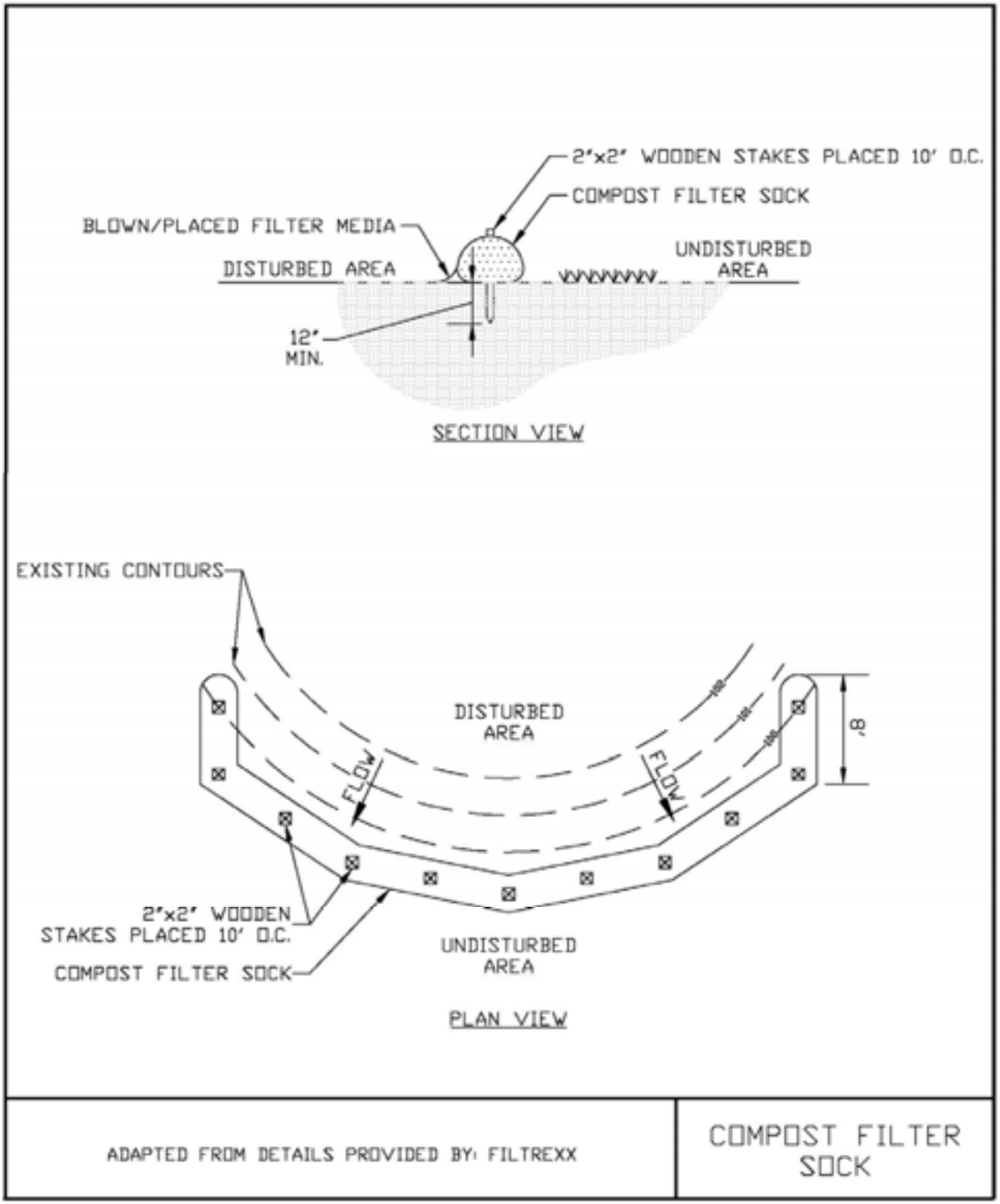
Table 5.1 - Compost Sock Fabric Minimum Specifications Table

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photodegradable	Photodegradable	Biodegradable	Photodegradable	Photodegradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years

Table 5.2 - Compost Standards Table

Organic matter content	25% - 100% (dry weight)
Organic portion	Fibrous and elongated
pH	6.0 – 8.0
Moisture content	30% - 60%
Particle size	100% passing a 1" screen and 10 - 50% passing a 3/8" screen
Soluble salt concentration	5.0 dS/m (mmhos/cm) maximum

Figure 5.2
Compost Filter Sock



STANDARD AND SPECIFICATIONS FOR SILT FENCE

Definition & Scope

A **temporary** barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil by temporarily ponding the sediment laden runoff allowing settling to occur. The maximum period of use is limited by the ultraviolet stability of the fabric (approximately one year).

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope length and fence length will not exceed the limits shown in the Design Criteria for the specific type of silt fence used ; and
2. Maximum ponding depth of 1.5 feet behind the fence; and
3. Erosion would occur in the form of sheet erosion; and
4. There is no concentration of water flowing to the barrier; and
5. Soil conditions allow for proper keying of fabric, or other anchorage, to prevent blowouts.

Design Criteria

1. Design computations are not required for installations of 1 month or less. Longer installation periods should be designed for expected runoff.
2. All silt fences shall be placed as close to the disturbed area as possible, but at least 10 feet from the toe of a slope steeper than 3H:1V, to allow for maintenance and roll down. The area beyond the fence must be undisturbed or stabilized.
3. The type of silt fence specified for each location on the plan shall not exceed the maximum slope length and maximum fence length requirements shown in the following table:

		Slope Length/Fence Length (ft.)		
Slope	Steepness	Standard	Reinforced	Super
<2%	< 50:1	300/1500	N/A	N/A
2-10%	50:1 to 10:1	125/1000	250/2000	300/2500
10-20%	10:1 to 5:1	100/750	150/1000	200/1000
20-33%	5:1 to 3:1	60/500	80/750	100/1000
33-50%	3:1 to 2:1	40/250	70/350	100/500
>50%	> 2:1	20/125	30/175	50/250

Standard Silt Fence (SF) is fabric rolls stapled to wooden stakes driven 16 inches in the ground.
Reinforced Silt Fence (RSF) is fabric placed against welded wire fabric with anchored steel posts driven 16 inches in the ground.
Super Silt Fence (SSF) is fabric placed against chain link fence as support backing with posts driven 3 feet in the ground.

4. Silt fence shall be removed as soon as the disturbed area has achieved final stabilization.

The silt fence shall be installed in accordance with the appropriate details. Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. Butt joints are not acceptable. A detail of the silt fence shall be shown on the plan. See Figure 5.30 on page 5.56 for Reinforced Silt Fence as an example of details to be provided.

Criteria for Silt Fence Materials

1. Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance.

Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	110	ASTM D 4632
Elongation at Failure (%)	20	ASTM D 4632
Mullen Burst Strength (PSI)	300	ASTM D 3786
Puncture Strength (lbs)	60	ASTM D 4833
Minimum Trapezoidal Tear Strength (lbs)	50	ASTM D 4533
Flow Through Rate (gal/ min/sf)	25	ASTM D 4491
Equivalent Opening Size	40-80	US Std Sieve ASTM D 4751
Minimum UV Residual (%)	70	ASTM D 4355

2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.5 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot. Posts for super silt fence shall be standard chain link fence posts.

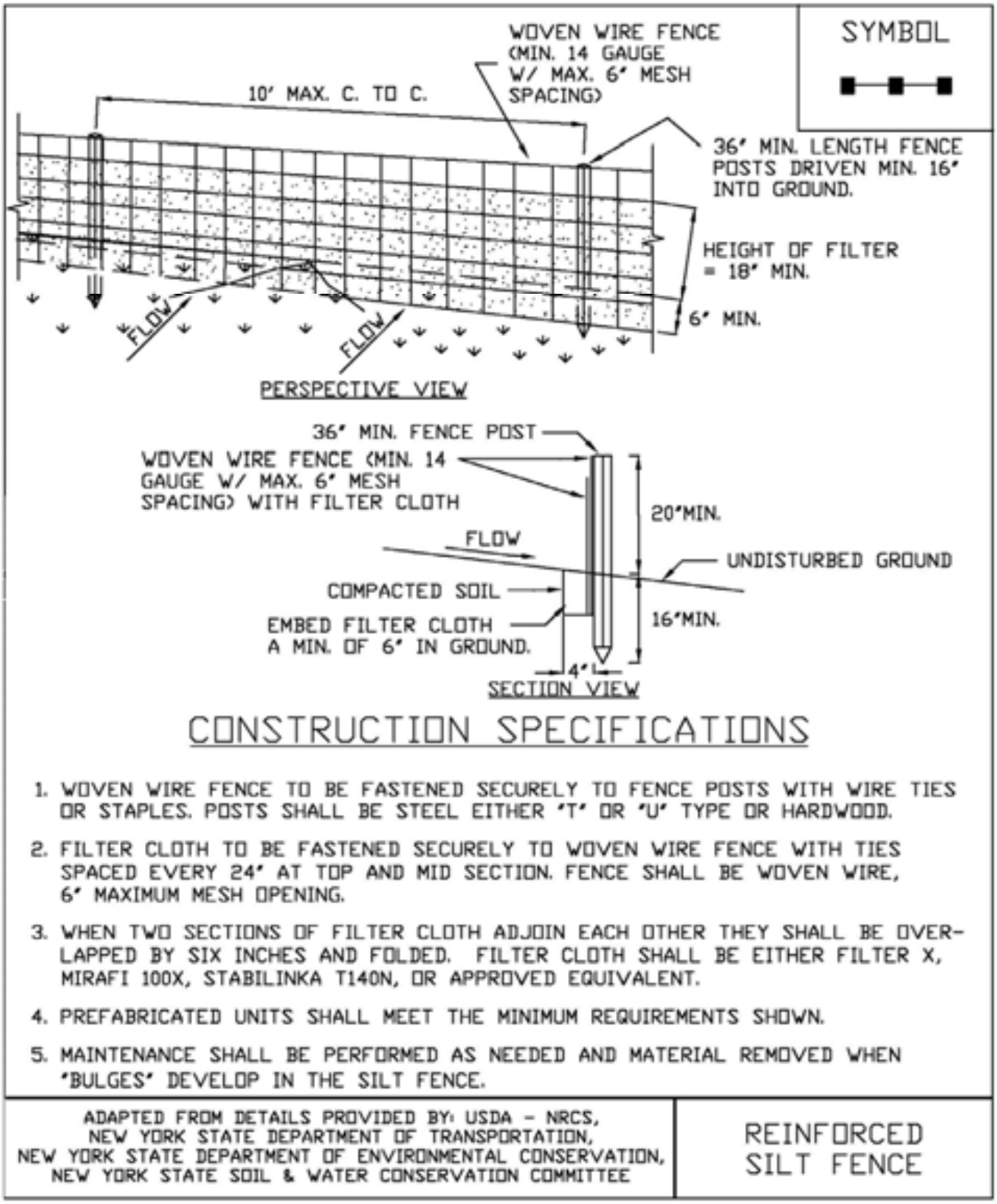
3. Wire Fence for reinforced silt fence: Wire fencing shall be a minimum 14 gage with a maximum 6 in. mesh opening, or as approved.

4. Prefabricated silt fence is acceptable as long as all material specifications are met.

Super Silt Fence

Reinforced Silt Fence

Figure 5.30
Reinforced Silt Fence



STANDARD AND SPECIFICATIONS FOR STORM DRAIN INLET PROTECTION

Definition & Scope

A **temporary** barrier with low permeability, installed around inlets in the form of a fence, berm or excavation around an opening, detaining water and thereby reducing the sediment content of sediment laden water by settling thus preventing heavily sediment laden water from entering a storm drain system.

Conditions Where Practice Applies

This practice shall be used where the drainage area to an inlet is disturbed, it is not possible to temporarily divert the storm drain outfall into a trapping device, and watertight blocking of inlets is not advisable. **It is not to be used in place of sediment trapping devices.** This practice shall be used with an upstream buffer strip if placed at a storm drain inlet on a paved surface. It may be used in conjunction with storm drain diversion to help prevent siltation of pipes installed with low slope angle.

Types of Storm Drain Inlet Practices

There are five (5) specific types of storm drain inlet protection practices that vary according to their function, location, drainage area, and availability of materials:

I. Excavated Drop Inlet Protection
II. Fabric Drop Inlet Protection
III. Stone & Block Drop Inlet Protection
IV. Paved Surface Inlet Protection
V. Manufactured Insert Inlet Protection

Design Criteria

Drainage Area – The drainage area for storm drain inlets shall not exceed one acre. Erosion control/temporary stabilization measures must be implemented on the disturbed drainage area tributary to the inlet. The crest elevations of these practices shall provide storage and minimize bypass flow.

Type I – Excavated Drop Inlet Protection

This practice is generally used during initial overlot grading after the storm drain trunk line is installed.

Limit the drainage area to the inlet device to 1 acre. Excavated side slopes shall be no steeper than 2:1. The minimum depth shall be 1 foot and the maximum depth 2 feet as measured from the crest of the inlet structure. Shape the excavated basin to fit conditions with the longest dimension oriented toward the longest inflow area to provide maximum trap efficiency. The capacity of the excavated basin should be established to contain 900 cubic feet per acre of disturbed area. Weep holes, protected by fabric and stone, should be provided for draining the temporary pool.

Inspect and clean the excavated basin after every storm. Sediment should be removed when 50 percent of the storage volume is achieved This material should be incorporated into the site in a stabilized manner.

Type II – Fabric Drop Inlet Protection

This practice is generally used during final elevation grading phases after the storm drain system is completed.

Limit the drainage area to 1 acre per inlet device. Land area slope immediately surrounding this device should not exceed 1 percent. The maximum height of the fabric above the inlet crest shall not exceed 1.5 feet unless reinforced.

The top of the barrier should be maintained to allow overflow to drop into the drop inlet and not bypass the inlet to

unprotected lower areas. Support stakes for fabric shall be a minimum of 3 feet long, spaced a maximum 3 feet apart. They should be driven close to the inlet so any overflow drops into the inlet and not on the unprotected soil. Improved performance and sediment storage volume can be obtained by excavating the area.

Inspect the fabric barrier after each rain event and make repairs as needed. Remove sediment from the pool area as necessary with care not to undercut or damage the filter fabric. Upon stabilization of the drainage area, remove all materials and unstable sediment and dispose of properly. Bring the adjacent area of the drop inlet to grade, smooth and compact and stabilize in the appropriate manner to the site.

Type III – Stone and Block Drop Inlet Protection

This practice is generally used during the initial and intermediate overlot grading of a construction site.

Limit the drainage area to 1 acre at the drop inlet. The stone barrier should have a minimum height of 1 foot and a maximum height of 2 feet. Do not use mortar. The height should be limited to prevent excess ponding and bypass flow.

Recess the first course of blocks at least 2 inches below the crest opening of the storm drain for lateral support. Subsequent courses can be supported laterally if needed by placing a 2x4 inch wood stud through the block openings perpendicular to the course. The bottom row should have a few blocks oriented so flow can drain through the block to dewater the basin area.

The stone should be placed just below the top of the blocks on slopes of 2:1 or flatter. Place hardware cloth of wire mesh with ½ inch openings over all block openings to hold stone in place.

As an optional design, the concrete blocks may be omitted and the entire structure constructed of stone, ringing the outlet ("doughnut"). The stone should be kept at a 3:1 slope toward the inlet to keep it from being washed into the inlet. A level area 1 foot wide and four inches below the crest will further prevent wash. Stone on the slope toward the inlet should be at least 3 inches in size for stability and 1 inch or smaller away from the inlet to control flow rate. The elevation of the top of the stone crest must be maintained 6 inches lower than the ground elevation down slope from the inlet to ensure that all storm flows pass over the stone into the storm drain and not past the structure. Temporary diking should be used as necessary to prevent bypass flow.

The barrier should be inspected after each rain event and repairs made where needed. Remove sediment as necessary to provide for accurate storage volume for subsequent rains. Upon stabilization of contributing drainage area, remove all materials and any unstable soil and dispose of properly.

Bring the disturbed area to proper grade, smooth, compact and stabilize in a manner appropriate to the site.

Type IV – Paved Surface Inlet Protection

This practice is generally used after pavement construction has been done while final grading and soil stabilization is occurring. These practices should be used with upstream buffer strips in linear construction applications, and with temporary surface stabilization for overlot areas, to reduce the sediment load at the practice. This practice includes sand bags, compost filter socks, geo-tubes filled with ballast, and manufactured surface barriers. Pea gravel can also be used in conjunction with these practices to improve performance. When the inlet is not at a low point, and is offset from the pavement or gutter line, protection should be selected and installed so that flows are not diverted around the inlet.

The drainage area should be limited to 1 acre at the drain inlet. All practices will be placed at the inlet perimeter or beyond to maximize the flow capacity of the inlet. Practices shall be weighted, braced, tied, or otherwise anchored to prevent movement or shifting of location on paved surfaces. Traffic safety shall be integrated with the use of this practice. All practices should be marked with traffic safety cones as appropriate. Structure height shall not cause flooding or by-pass flow that would cause additional erosion.

The structure should be inspected after every storm event. Any sediment should be removed and disposed of on the site. Any broken or damaged components should be replaced. Check all materials for proper anchorage and secure as necessary.

Type V - Manufactured Insert Inlet Protection

The drainage area shall be limited to 1 acre at the drain inlet. All inserts will be installed and anchored in accordance with the manufacturers recommendations and design details. The fabric portion of the structure will equal or exceed the performance standard for the silt fence fabric. The inserts will be installed to preserve a minimum of 50 percent of the open, unobstructed design flow area of the storm drain inlet opening to maintain capacity for storm events.

Figure 5.31
Excavated Drop Inlet Protection

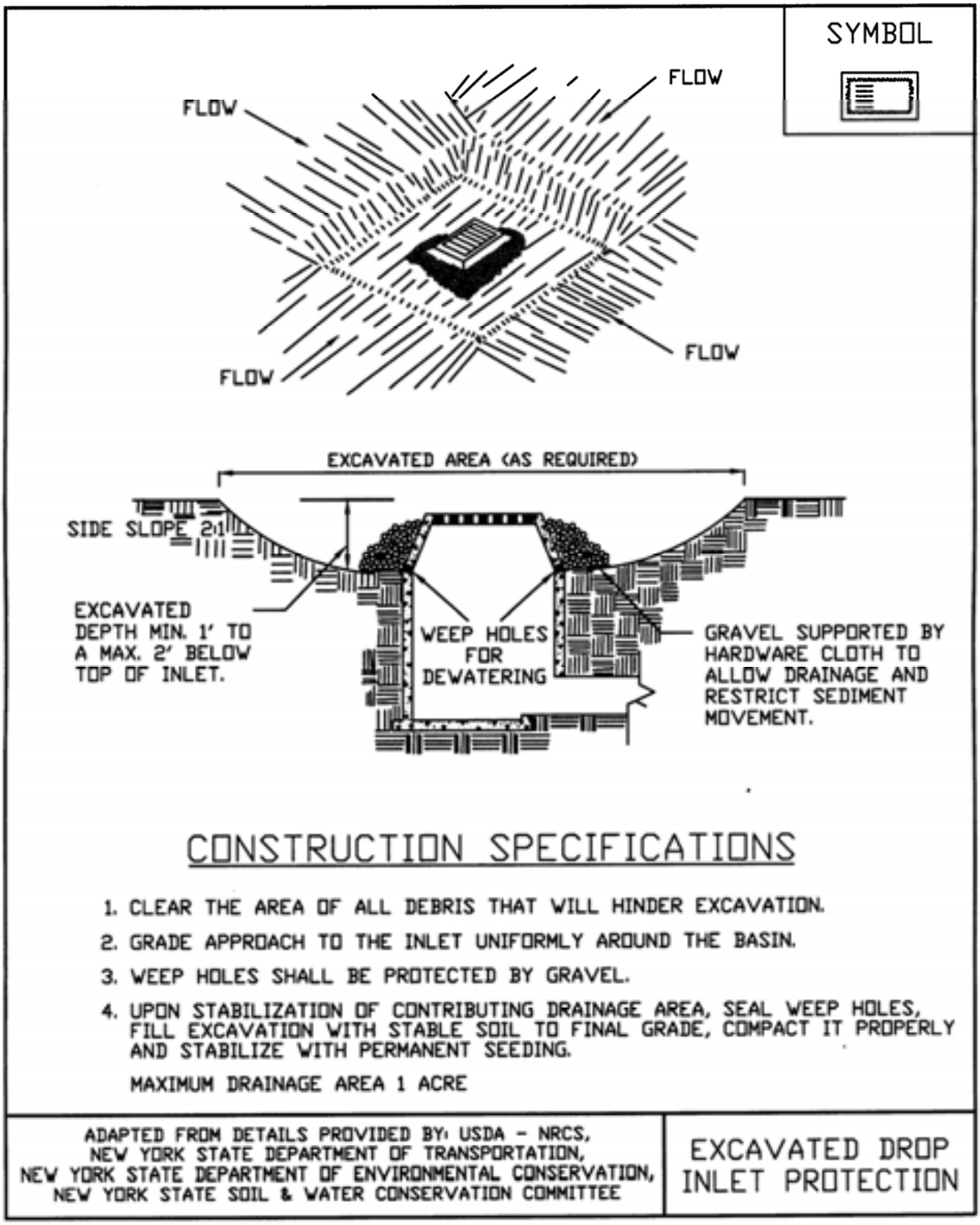


Figure 5.32
Fabric Drop Inlet Protection

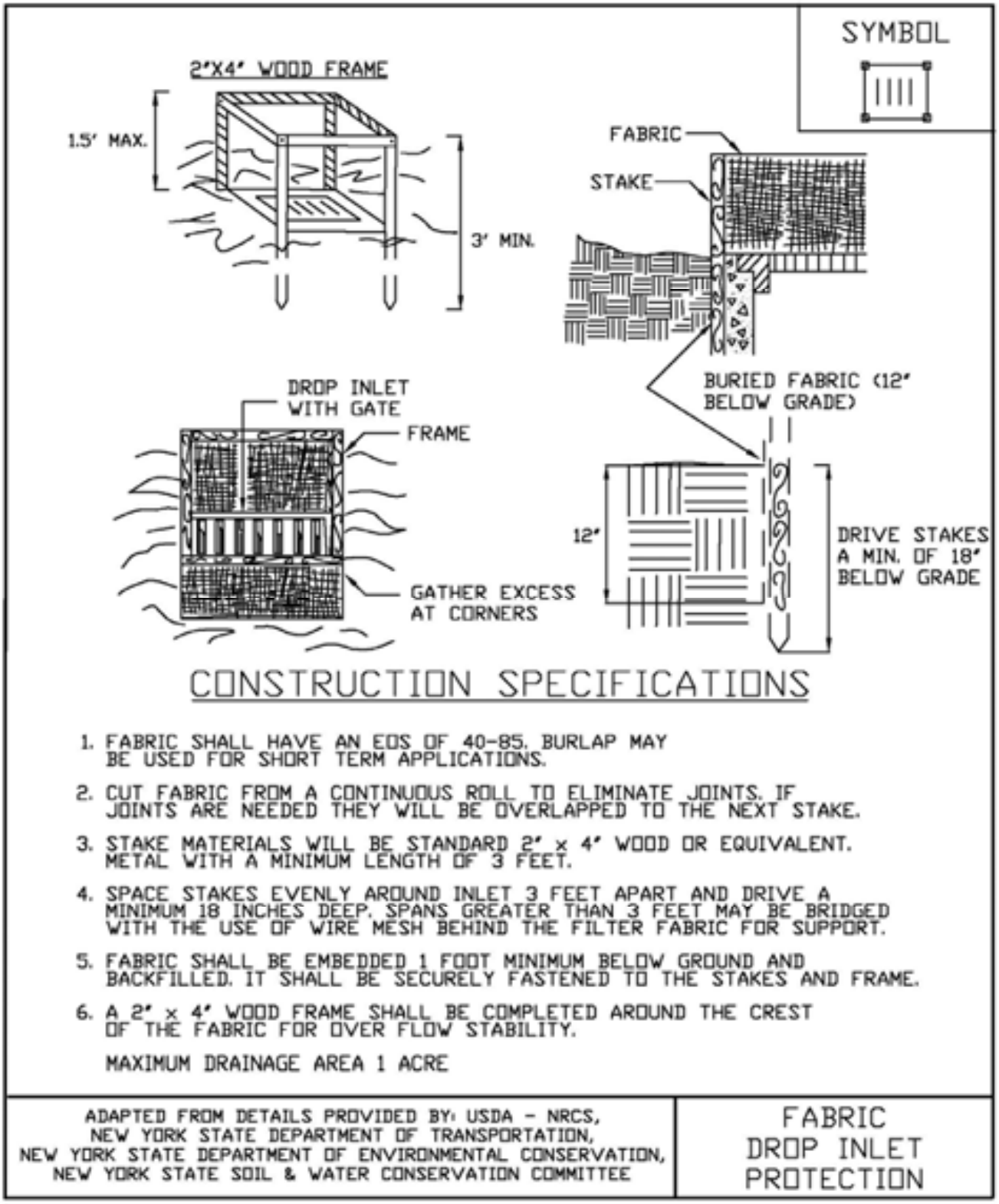
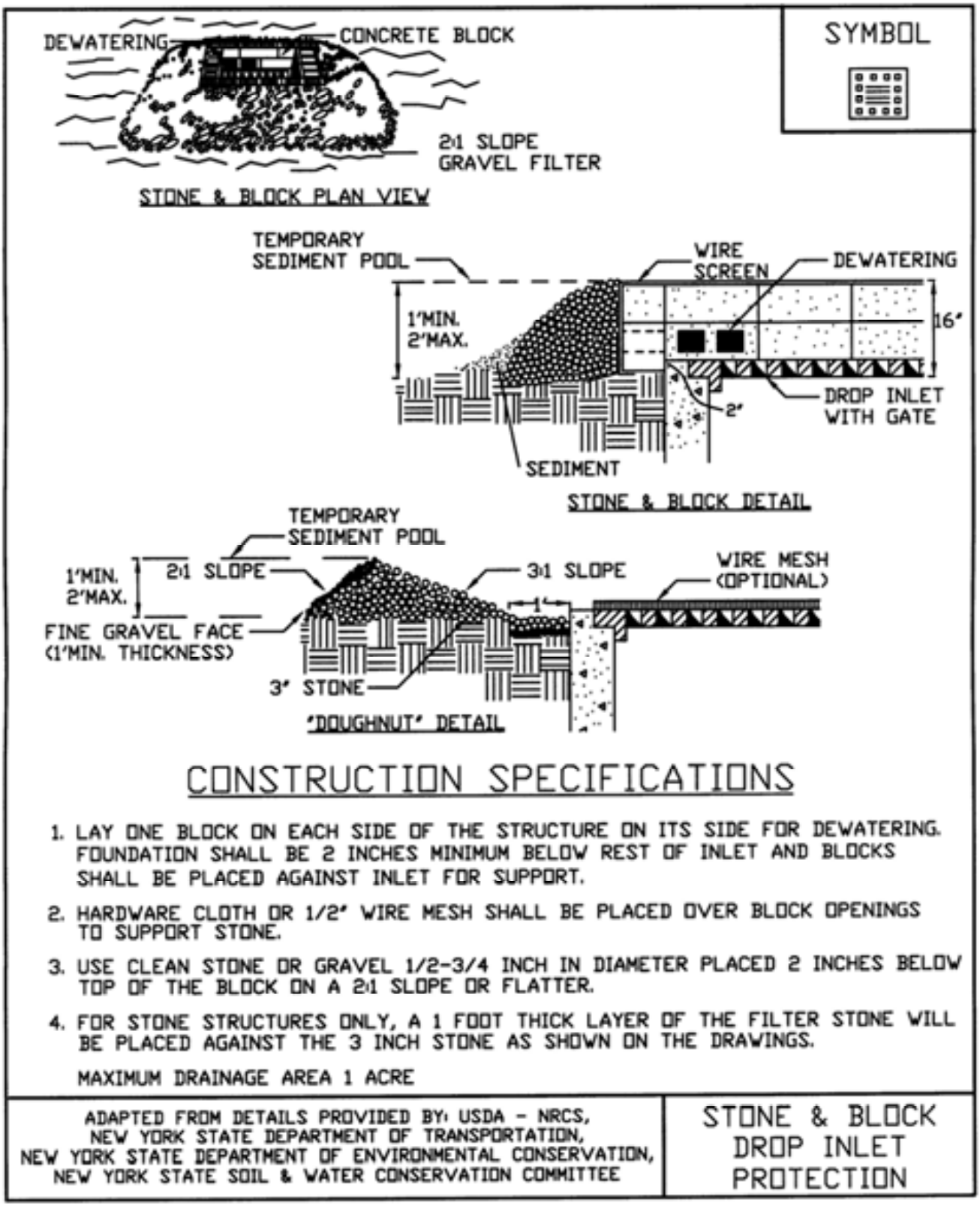


Figure 5.33
Stone & Block Drop Inlet Protection



CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

STONE & BLOCK DROP INLET PROTECTION

Appendix H

Deep Ripping and Decompaction
Soil Restoration

New York State
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water

Deep-Ripping and Decompaction

April 2008

New York State
Department of Environmental Conservation

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Alternative Stormwater Management
Deep-Ripping and Decompaction

Description

The two-phase practice of 1) “Deep Ripping;” and 2) “Decompaction” (deep subsoiling), of the soil material as a step in the cleanup and restoration/landscaping of a construction site, helps mitigate the physically induced impacts of soil compression; i.e.: soil compaction or the substantial increase in the bulk density of the soil material.

Deep Ripping and Decompaction are key factors which help in restoring soil pore space and permeability for water infiltration. Conversely, the physical actions of cut-and-fill work, land grading, the ongoing movement of construction equipment and the transport of building materials throughout a site alter the architecture and structure of the soil, resulting in: the mixing of layers (horizons) of soil materials, compression of those materials and diminished soil porosity which, if left unchecked, severely impairs the soil’s water holding capacity and vertical drainage (rainfall infiltration), from the surface downward.

In a humid climate region, compaction damage on a site is virtually guaranteed over the duration of a project. Soil in very moist to wet condition when compacted, will have severely reduced permeability. Figure 1 displays the early stage of the deep-ripping phase (Note that all topsoil was stripped prior to construction access, and it remains stockpiled until the next phase – decompaction – is complete). A heavy-duty tractor is pulling a three-shank ripper on the first of several series of incrementally deepening passes through the construction access corridor's densely compressed subsoil material. Figure 2 illustrates the approximate volumetric composition of a loam surface soil when conditions are good for plant growth, with adequate natural pore space for fluctuating moisture conditions.

Fig. 1. A typical deep ripping phase of this practice, during the first in a series of progressively deeper “rips” through severely compressed subsoil.

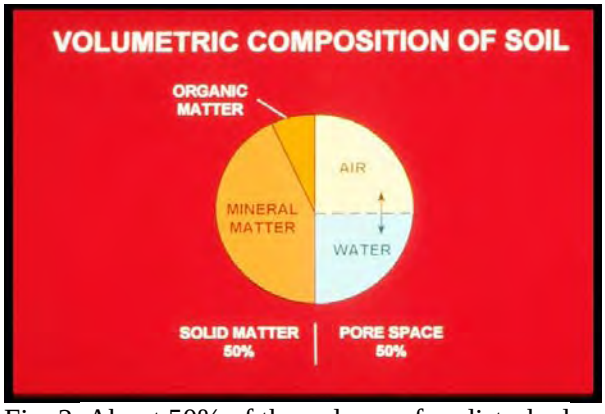


Fig. 2. About 50% of the volume of undisturbed loam surface soil is pore space, when soil is in good condition for plant growth. Brady, 2002.

Recommended Application of Practice

The objective of Deep Ripping and Decompaction is to effectively fracture (vertically and laterallly) through the thickness of the physically compressed subsoil material (see Figure 3), restoring soil porosity and permeability and aiding infiltration to help reduce runoff. Together with topsoil stripping, the "two-phase" practice of Deep Ripping and Decompaction first became established as a "best management practice" through ongoing success on commercial farmlands affected by heavy utility construction right-of-way projects (transmission pipelines and large power lines).

Fig. 3. Construction site with significant compaction of the deep basal till subsoil extends 24 inches below this exposed cut-and-fill work surface.

Soil permeability, soil drainage and cropland productivity were restored. For broader construction application, the two-phase practice of Deep Ripping and Decompaction is best adapted to areas impacted with significant soil compaction, on contiguous open portions of large construction sites and inside long, open construction corridors used as temporary access over the duration of construction. Each mitigation area should have minimal above-and-below-ground obstructions for the easy avoidance and maneuvering of a large tractor and ripping/decompacting implements. Conversely, the complete two-phase practice is not recommended in congested or obstructed areas due to the limitations on tractor and implement movement.

Benefits

Aggressive "deep ripping" through the compressed thickness of exposed subsoil before the replacement/respreading of the topsoil layer, followed by "decompaction," i.e.: "sub-soiling," through the restored topsoil layer down into the subsoil, offers the following benefits:

- Increases the project (larger size) area's direct surface infiltration of rainfall by providing the open site's mitigated soil condition and lowers the demand on concentrated runoff control structures

- Enhances direct groundwater recharge through greater dispersion across and through a broader surface than afforded by some runoff-control structural measures

- Decreases runoff volume generated and provides hydrologic source control

- May be planned for application in feasible open locations either alone or in

conjunction with plans for structural practices (e.g., subsurface drain line or infiltration basin) serving the same or contiguous areas

- Promotes successful long-term revegetation by restoring soil permeability, drainage and water holding capacity for healthy (rather than restricted) root-system development of trees, shrubs and deep rooted ground cover, minimizing plant drowning during wet periods and burnout during dry periods.

Feasibility / Limitations

The effectiveness of Deep Ripping and Decompaction is governed mostly by site factors such as: the original (undisturbed) soil's hydrologic characteristics; the general slope; local weather/timing (soil moisture) for implementation; the space-related freedom of equipment/implement maneuverability (noted above in **Recommended Application of Practice**), and by the proper selection and operation of tractor and implements (explained below in **Design Guidance**). The more notable site-related factors include:

Soil

In the undisturbed condition, each identified soil type comprising a site is grouped into one of four categories of soil hydrology, Hydrologic Soil Group A, B, C or D, determined primarily by a range of characteristics including soil texture, drainage capability when thoroughly wet, and depth to water table. The natural rates of infiltration and transmission of soil-water through the undisturbed soil layers for Group A is "high" with a low runoff potential while soils in Group B are moderate in infiltration and the transmission of soil-water with a moderate runoff potential, depending somewhat on slope. Soils in Group C have slow rates of infiltration and transmission of soil-water and a moderately high runoff potential influenced by soil texture and slope; while soils in Group D have exceptionally slow rates of infiltration and transmission of soil-water, and high runoff potential.

In Figure 4, the profile displays the undisturbed horizons of a soil in Hydrologic Soil Group C and the naturally slow rate of infiltration through the subsoil. The slow rate of infiltration begins immediately below the topsoil horizon (30 cm), due to the limited amount of macro pores, e.g.: natural subsoil fractures, worm holes and root channels. Infiltration after the construction-induced mixing and compression of such subsoil material is virtually absent; but can be restored back to this natural level with the two-phase practice of deep ripping and decompaction, followed by the permanent establishment of an appropriate, deep taproot

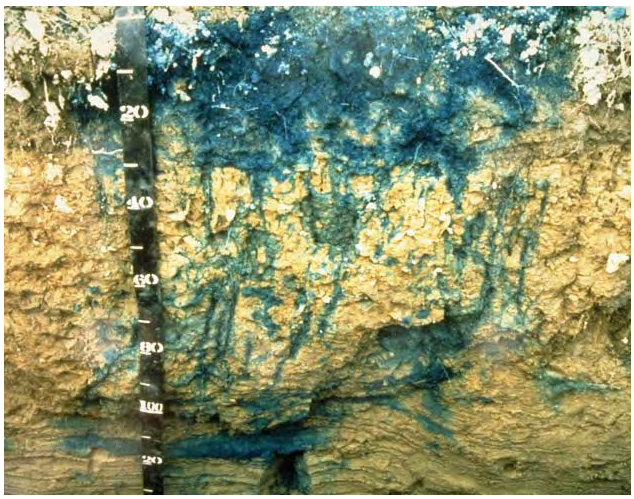


Fig. 4. Profile (in centimeters) displaying the infiltration test result of the natural undisturbed horizons of a soil in Hydrologic Soil Group C.

lawn/ground cover to help maintain the restored subsoil structure. Infiltration after construction-induced mixing and compression of such subsoil material can be notably rehabilitated with the Deep Ripping and Decompaction practice, which prepares the site for the appropriate long-term lawn/ground cover mix including deep taproot plants such as clover, fescue or trefoil, etc. needed for all rehabilitated soils.

Generally, soils in Hydrologic Soil Groups A and B, which respectively may include deep, well-drained, sandy-gravelly materials or deep, moderately well-drained basal till materials, are among the easier ones to restore permeability and infiltration, by deep ripping and decompaction. Among the many different soils in Hydrologic Soil Group C are those unique glacial tills having a natural fragipan zone, beginning about 12 to 18 inches (30 – 45cm), below surface. Although soils in Hydrologic Soil Group C do require a somewhat more carefully applied level of the Deep Ripping and Decompaction practice, it can greatly benefit such affected areas by reducing the runoff and fostering infiltration to a level equal to that of pre-disturbance.

Soils in Hydrologic Soil Group D typically have a permanent high water table close to the surface, influenced by a clay or other highly impervious layer of material. In many locations with clay subsoil material, the bulk density is so naturally high that heavy trafficking has little or no added impact on infiltration; and structural runoff control practices rather than Deep Ripping and Decompaction should be considered.

The information about Hydrologic Soil Groups is merely a general guideline. Site-specific data such as limited depths of cut-and-fill grading with minimal removal or translocation of the inherent subsoil materials (as analyzed in the county soil survey) or, conversely, the excavation and translocation of deeper, unconsolidated substratum or consolidated bedrock materials (unlike the analyzed subsoil horizons' materials referred to in the county soil survey) should always be taken into account.

Sites made up with significant quantities of large rocks, or having a very shallow depth to bedrock, are not conducive to deep ripping and decompation (subsoiling); and other measures may be more practical.

Slope

The two-phase application of 1) deep ripping and 2) decompaction (deep subsoiling), is most practical on flat, gentle and moderate slopes. In some situations, such as but not limited to temporary construction access corridors, inclusion areas that are moderately steep along a project's otherwise gentle or moderate slope may also be deep ripped and decompacted. For limited instances of moderate steepness on other projects, however, the post-construction land use and the relative alignment of the potential ripping and decompaction work in relation to the lay of the slope should be reviewed for safety and practicality. In broad construction areas predominated by moderately steep or steep slopes, the practice is generally not used.

Local Weather/Timing/Soil Moisture

Effective fracturing of compressed subsoil material from the exposed work surface, laterally and vertically down through the affected zone is achieved only when the soil material is moderately dry to moderately moist. Neither one of the two-phases, deep ripping nor decompaction (deep

subsoiling), can be effectively conducted when the soil material (subsoil or replaced topsoil) is in either a “plastic” or “liquid” state of soil consistency. Pulling the respective implements legs through the soil when it is overly moist only results in the “slicing and smearing” of the material or added “squeezing and compression” instead of the necessary fracturing. Ample drying time is needed for a “rippable” soil condition not merely in the material close to the surface, but throughout the material located down to the bottom of the physically compressed zone of the subsoil.

The “poor man’s Atterberg field test” for soil plasticity is a simple “hand-roll” method used for quick, on-site determination of whether or not the moisture level of the affected soil material is low enough for: effective deep ripping of subsoil; respreading of topsoil in a friable state; and final decompaction (deep subsoiling). Using a sample of soil material obtained from the planned bottom depth of ripping, e.g.: 20 - 24 inches below exposed subsoil surface, the sample is hand rolled between the palms down to a 1/8-inch diameter thread. (Use the same test for stored topsoil material before respreading on the site.) If the respective soil sample crumbles apart in segments no greater than 3/8 of an inch long, by the time it is rolled down to 1/8 inch diameter, it is low enough in moisture for deep ripping (or topsoil replacement), and decompaction. Conversely, as shown in Figure 5, if the rolled sample stretches out in increments greater than 3/8 of an inch long before crumbling, it is in a “plastic” state of soil consistency and is too wet for subsoil ripping (as well as topsoil replacement) and final decompaction.

Fig. 5. Augered from a depth of 19 inches below the surface of the replaced topsoil, this subsoil sample was hand rolled to a 1/8-inch diameter. The test shows the soil at this site stretches out too far without crumbling; it indicates the material is in a plastic state of consistence, too wet for final decompaction (deep subsoiling) at this time.

Design Guidance

Beyond the above-noted site factors, a vital requirement for the effective Deep Ripping and Decompaction (deep subsoiling), is implementing the practice in its distinct, two-phase process:

1) Deep rip the affected thickness of exposed subsoil material (see Figure 10 and 11), aggressively fracturing it before the protected topsoil is reapplied on the site (see Figure 12); and

2) Decompact (deep subsoil), simultaneously through the restored topsoil layer and the upper half of the affected subsoil (Figure 13). The second phase, “decompaction,” mitigates the partial recompaction which occurs during the heavy process of topsoil spreading/grading. Prior to deep ripping and decompacting the site, all construction activity, including construction equipment and material storage, site cleanup and trafficking (Figure 14), should be finished; and the site closed off to further disturbance. Likewise, once the practice is underway and the area’s soil permeability and

rainfall infiltration are being restored, a policy limiting all further traffic to permanent travel lanes is maintained.

The other critical elements, outlined below, are: using the proper implements (deep, heavy-duty rippers and subsoilers), and ample pulling-power equipment (tractors); and conducting the practice at the appropriate speed, depth and pattern(s) of movement.

Note that an appropriate plan for the separate practice of establishing a healthy perennial ground cover, with deep rooting to help maintain the restored soil structure, should be developed in advance. This may require the assistance of an agronomist or landscape horticulturist.

Implements

Avoid the use of all undersize implements. The small-to-medium, light-duty tool will, at best, only "scarify" the uppermost surface portion of the mass of compacted subsoil material. The term "chisel plow" is commonly but incorrectly applied to a broad range of implements. While a few may be adapted for the moderate subsoiling of non-impacted soils, the majority are less durable and used for only lighter land-fitting (see Figure 6).

Fig. 6. A light duty chisel implement, not adequate for either the deep ripping or decompaction (deep subsoiling) phase.

Fig. 7. One of several variations of an agricultural ripper. This unit has long, rugged shanks mounted on a steel V-frame for deep, aggressive fracturing through Phase 1.

Use a "heavy duty" agricultural-grade, deep ripper (see Figures 7,9,10 and 11) for the first phase: the lateral and vertical fracturing of the mass of exposed and compressed subsoil, down and through, to the bottom of impact, prior to the replacement of the topsoil layer. (Any oversize rocks which are uplifted to the subsoil surface during the deep ripping phase are picked and removed.) Like the heavy-duty class of implement for the first phase, the decompaction (deep subsoiling) of Phase 2 is conducted with the heavy-duty version of the deep subsoiler. More preferable is the angled-leg variety of deep subsoiler (shown in Figures 8 and 13). It minimizes the inversion of the subsoil and topsoil layers while laterally and vertically fracturing the upper half of the previously ripped subsoil layer and all of the topsoil layer by delivering a momentary, wave-like "lifting and shattering" action up through the soil layers as it is pulled.

Pulling-Power of Equipment

Use the following rule of thumb for tractor horsepower (hp) whenever deep ripping and decompacting a significantly impacted site: For both types of implement, have at least 40 hp of tractor pull available for each mounted shank/ leg.

Using the examples of a 3-shank and a 5-shank implement, the respective tractors should have 120 and 200 hp available for fracturing down to the final depth of 20-to-24 inches per phase. Final depth for the deep ripping in Phase 1 is achieved incrementally by a progressive series of passes (see Depth and Patterns of Movement, below); while for Phase 2, the full operating depth of the deep subsoiler is applied from the beginning.

The operating speed for pulling both types of implement should not exceed 2 to 3 mph. At this slow and managed rate of operating speed, maximum functional performance is sustained by the tractor and the implement performing the soil fracturing. Referring to Figure 8, the implement is the 6-leg version of the deep angled-leg subsoiler. Its two outside legs are "chained up" so that only four legs will be engaged (at the maximum depth), requiring no less than 160 hp, (rather than 240 hp) of pull. The 4-wheel drive, articulated-frame tractor in Figure 8 is 174 hp. It will be decompacting this unobstructed, former construction access area simultaneously through 11 inches of replaced topsoil and the upper 12 inches of the previously deep-ripped subsoil. In constricted areas of Phase 1) Deep Ripping, a medium-size tractor with adequate hp, such as the one in Figure 9 pulling a 3-shank deep ripper, may be more maneuverable.

Fig. 8. A deep, angled-leg subsoiler, ideal for Phase 2 decompaction of after the topsoil layer is graded on top of the ripped subsoil.

Fig. 9. This medium tractor is pulling a 3-shank deep ripper. The severely compacted construction access corridor is narrow, and the 120 hp tractor is more maneuverable for Phase 1 deep ripping (subsoil fracturing), here.

Some industrial-grade variations of ripping implements are attached to power graders and bulldozers. Although highly durable, they are generally not recommended. Typically, the shanks or "teeth" of these rippers are too short and stout; and they are mounted too far apart to achieve the well-distributed type of lateral and vertical fracturing of the soil materials necessary to restore soil permeability and infiltration. In addition, the power graders and bulldozers, as pullers, are far less maneuverable for turns and patterns than the tractor.

Depth and Patterns of Movement

As previously noted both Phase 1 Deep Ripping through significantly compressed, exposed subsoil and Phase 2 Decompaction (deep subsoiling) through the replaced topsoil and upper subsoil need to be performed at maximum capable depth of each implement. With an implement's guide wheels attached, some have a "normal" maximum operating depth of 18 inches, while others may go deeper. In many situations, however, the tractor/implement operator must first remove the guide wheels and other non essential elements from the implement. This adapts the ripper or the deep subsoiler for skillful pulling with its frame only a few inches above surface, while the shanks or legs, fracture the soil material 20-to-24 inches deep.

There may be construction sites where the depth of the exposed subsoil's compression is moderate, e.g.: 12 inches, rather than deep. This can be verified by using a ¾ inch cone penetrometer and a shovel to test the subsoil for its level of compaction, incrementally, every three inches of increasing depth. Once the full thickness of the subsoil's compacted zone is finally "pieced" and there is a significant drop in the psi measurements of the soil penetrometer, the depth/thickness of compaction is determined. This is repeated at several representative locations of the construction site. If the thickness of the site's subsoil compaction is verified as, for example, ten inches, then the Phase 1 Deep Ripping can be correspondingly reduced to the implement's minimum operable depth of 12 inches. However, the Phase 2 simultaneous Decompation (subsoiling) of an 11 inch thick layer of replaced topsoil and the upper subsoil should run at the subsoiling implements full operating depth.

Fig. 10. An early pass with a 3-shank deep ripper penetrating only 8 inches into this worksite's severely compressed subsoil.

Fig. 11. A repeat run of the 3-shank ripper along the same patterned pass area as Fig. 9; here, incrementally reaching 18 of the needed 22 inches of subsoil fracture.

Typically, three separate series (patterns) are used for both the Phase 1 Deep Ripping and the Phase 2 Decompaction on significantly compacted sites. For Phase 1, each series begins with a moderate depth of rip and, by repeat-pass, continues until full depth is reached. Phase 2 applies the full depth of Decompation (subsoiling), from the beginning.

Every separate series (pattern) consists of parallel, forward-and-return runs, with each progressive

pass of the implement's legs or shanks evenly staggered between those from the previous pass. This compensates for the shank or leg-spacing on the implement, e.g., with 24-to-30 inches between each shank or leg. The staggered return pass ensures lateral and vertical fracturing actuated every 12 to 15 inches across the densely compressed soil mass.

Large, Unobstructed Areas

For larger easy areas, use the standard patterns of movement:

- The first series (pattern) of passes is applied lengthwise, parallel with the longest spread of the site; gradually progressing across the site's width, with each successive pass.

- The second series runs obliquely, crossing the first series at an angle of about 45 degrees.

- The third series runs at right angle (or 90 degrees), to the first series to complete the fracturing and shattering on severely compacted sites, and avoid leaving large unbroken blocks of compressed soil material. (In certain instances, the third series may be optional, depending on how thoroughly the first two series loosen the material and eliminate large chunks/blocks of material as verified by tests with a ¾-inch cone penetrometer.)

Fig. 12. Moderately dry topsoil is being replaced on the affected site now that Phase 1 deep ripping of the compressed subsoil is complete.

Fig. 13. The same deep, angled-leg subsoiler shown in Fig. 7 is engaged at maximum depth for Phase 2, decompaction (deep soiling), of the replaced topsoil and the upper subsoil materials.

Corridors

In long corridors of limited width and less maneuverability than larger sites, e.g.: along compacted areas used as temporary construction access, a modified series of pattern passes are used.

- First, apply the same initial lengthwise, parallel series of passes described above.

● A second series of passes makes a broad “S” shaped pattern of rips, continually and gradually alternating the “S” curves between opposite edges inside the compacted corridor.

● The third and final series again uses the broad, alternating S pattern, but it is “flip-flopped” to continually cross the previous S pattern along the corridor’s centerline. This final series of the S pattern curves back along the edge areas skipped by the second series.

Maintenance and Cost

Once the two-phase practice of Deep Ripping and Decompation is completed, two items are essential for maintaining a site’s soil porosity and permeability for infiltration. They are: planting and maintaining the appropriate ground cover with deep roots to maintain the soil structure (see Figure 15); and keeping the site free of traffic or other weight loads.

Note that site-specific choice of an appropriate vegetative ground-cover seed mix, including the proper seeding ratio of one or more perennial species with a deep taproot system and the proper amount of lime and soil nutrients (fertilizer mix) adapted to the soil-needs, are basic to the final practice of landscaping, i.e: surface tillage, seeding/planting/fertilizing and culti-packing or mulching is applied. The "maintenance" of an effectively deep-ripped and decompacted area is generally limited to the successful perennial (long-term) landscape ground cover; as long as no weight-bearing force of soil compaction is applied.

Fig. 14. The severely compacted soil of a temporary construction yard used daily by heavy equipment for four months; shown before deep ripping, topsoil replacement, and decompaction.

Fig. 15. The same site as Fig. 14 after deep ripping of the exposed subsoil, topsoil replacement, decompaction through the topsoil and upper subsoil and final surface tillage and revegetation to maintain soil permeability and infiltration.

The Deep Ripping and Decompaction practice is, by necessity, more extensive than periodic subsoiling of farmland.The cost of deep ripping and decompacting (deep subsoiling), will vary according to the depth and severity of soil-material compression and the relative amount of tractor and implement time that is required. In some instances, depending on open maneuverability, two-to-three acres of compacted project area may be deep-ripped in one day. In other situations of more severe compaction and - or less maneuverability, as little as one acre may be fully ripped in a day. Generally, if the Phase 1) Deep Ripping is fully effective, the Phase 2) Decompaction should be completed in 2/3 to 3/4 of the time required for Phase 1.

Using the example of two acres of Phase 1) Deep Ripping in one day, at $1800 per day, the net cost is $900 per acre. If the Phase 2) Decompacting or deep subsoiling takes 3/4 the time as Phase 1, it costs $675 per acre for a combined total of $1575 per acre to complete the practice (these figures do not include the cost of the separate practice of topsoil stripping and replacement). Due to the many variables, it must be recognized that cost will be determined by the specific conditions or constraints of the site and the availability of proper equipment.

Resources

Publications:

- American Society of Agricultural Engineers. 1971. *Compaction of Agricultural Soils.* ASAE.

- Brady, N.C., and R.R. Weil. 2002. *The Nature and Properties of Soils. 13th ed.* Pearson Education, Inc.

- Baver, L.D. 1948. *Soil Physics.* John Wiley & Sons.

- Carpachi, N. 1987 (1995 fifth printing). *Excavation and Grading Handbook, Revised. 2nd ed.* Craftsman Book Company
- Ellis, B. (Editor). 1997. Safe & Easy Lawn Care: The Complete Guide to Organic Low Maintenance Lawn. Houghton Mifflin.

- Harpstead, M.I., T.J. Sauer, and W.F. Bennett. 2001. *Soil Science Simplified. 4th ed.* Iowa State University Press.

- Magdoff, F., and H. van Es. 2000. *Building Soils for Better Crops. 2nd ed.* Sustainable Agricultural Networks

- McCarthy, D.F. 1993. *Essentials of Soil Mechanics and Foundations, Basic Geotechnics 4th ed.* Regents/Prentice Hall.

- Plaster, E.J. 1992. *Soil Science & Management. 3rd ed.* Delmar Publishers.

- Union Gas Limited, Ontario, Canada. 1984. *Rehabilitation of Agricultural Lands, Dawn-Kerwood Loop Pipeline; Technical Report*. Ecological Services for Planning, Ltd.; Robinson, Merritt & Devries, Ltd. and Smith, Hoffman Associates, Ltd.

- US Department of Agriculture in cooperation with Cornell University Agricultural Experiment Station. Various years. *Soil Survey of (various names) County, New York.* USDA.

Internet Access:

- Examples of implements:

V-Rippers. Access by internet search of *John Deere Ag -New Equipment for 915* (larger-frame model) *V-Rippe*; and, *for 913* (smaller-frame model) *V-Ripper*. Deep, angled-leg subsoiler. Access by internet search of: B*igham Brothers Shear Bolt Paratill-Subsoiler.* http://salesmanual.deere.com/sales/salesmanual/en_NA/primary_tillage/2008/feature/rippers/915v_pattern_frame.html?sbu=ag&link=prodcat Last visited March 08.

- Soils data of USDA Natural Resources Conservation Service. *NRCS Web Soil Survey.* http://websoilsurvey.nrcs.usda.gov/app/ and *USDA-NRCS Official Soil Series Descriptions; View by Name.* http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi . *Last visited Jan. 08.*

- Soil penetrometer information. Access by internet searches of: *Diagnosing Soil Compaction using a Penetrometer (soil compaction tester), PSU Extension;* as well as *Dickey-john Soil Compaction Tester*. http://www.dickey-johnproducts.com/pdf/SoilCompactionTest.pdf and http://cropsoil.psu.edu/Extension/Facts/uc178pdf Last visited Sept. 07

STANDARD AND SPECIFICATIONS FOR SOIL RESTORATION

Definition & Scope

The decompaction of areas of a development site or construction project where soils have been disturbed to recover the original properties and porosity of the soil; thus providing a sustainable growth medium for vegetation, reduction of runoff and filtering of pollutants from stormwater runoff.

Conditions Where Practice Applies

Soil restoration is to be applied to areas whose heavy construction traffic is done and final stabilization is to begin. This is generally applied in the cleanup, site restoration, and landscaping phase of construction followed by the permanent establishment of an appropriate ground cover to maintain the soil structure. Soil restoration measures should be applied over and adjacent to any runoff reduction practices to achieve design performance.

Design Criteria

1. Soil restoration areas will be designated on the plan views of areas to be disturbed.
2. Soil restoration will be completed in accordance with Table 4.6 on page 4.53.

Specification for Full Soil Restoration

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following Soil Restoration steps applied:

1. Apply 3 inches of compost over subsoil. The compost shall be well decomposed (matured at least 3 months), weed-free, organic matter. It shall be aerobically composted, possess no objectionable odors, and contain less than 1%, by dry weight, of man-made foreign matter. The physical parameters of the compost shall meet the standards listed in Table 5.2 - Compost Standards Table. **Note: All biosolids compost produced in New York State (or approved for importation) must meet NYS DEC's 6 NYCRR Part 360 (Solid Waste Management Facilities) requirements. The Part 360 requirements are equal to or more stringent than 40 CFR Part 503 which ensure safe standards for pathogen reduction and heavy metals content.**

2. Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor mounted disc, or tiller, to mix and circulate air and compost into the subsoil.
3. Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site.
4. Apply topsoil to a depth of 6 inches.
5. Vegetate as required by the seeding plan. Use appropriate ground cover with deep roots to maintain the soil structure.
6. Topsoil may be manufactured as a mixture or a mineral component and organic material such as compost.

At the end of the project an inspector should be able to push a 3/8" metal bar 12 inches into the soil just with body weight. This should not be performed within the drip line of any existing trees or over utility installations that are within 24 inches of the surface.

Maintenance

Keep the site free of vehicular and foot traffic or other weight loads. Consider pedestrian footpaths.

Table 4.6
Soil Restoration Requirements

Type of Soil Disturbance	Soil Restoration Requirement		Comments/Examples
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only - no change in grade	HSG A&B	HSG C&D	Protect area from any ongoing construction activities.
	Apply 6 inches of topsoil	Aerate* and apply 6 inches of topsoil	
Areas of cut or fill	HSG A&B	HSG C&D	
	Aerate* and apply 6 inches of topsoil	Apply full Soil Restoration**	
Heavy traffic areas on site (especially in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)	Apply full Soil Restoration (decompaction and compost enhancement)		
Areas where Runoff Reduction and/or Infiltration practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.		Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area
Redevelopment projects	Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.		

* Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.
** Per "Deep Ripping and De-compaction, DEC 2008".

Appendix I

SPDES Construction Log Book

APPENDIX F
CONSTRUCTION SITE INSPECTION AND MAINTENANCE LOG BOOK

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES

SAMPLE CONSTRUCTION SITE LOG BOOK

Table of Contents

I. Pre-Construction Meeting Documents
   a. Preamble to Site Assessment and Inspections
   b. Pre-Construction Site Assessment Checklist

II. Construction Duration Inspections
   a. Directions
   b. Modification to the SWPPP

I. **PRE-CONSTRUCTION MEETING DOCUMENTS**

Project Name _____

Permit No. _____ **Date of Authorization** _____

Name of Operator _____

Prime Contractor _____

a. **Preamble to Site Assessment and Inspections**

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified inspector[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements. A preconstruction meeting should be held to review all of the SWPPP requirements with construction personnel.

When construction starts, site inspections shall be conducted by the qualified inspector at least every 7 calendar days. The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified inspector perform a final site inspection. The qualified inspector shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 Refer to "Qualified Inspector" inspection requirements in the current SPDES General Permit for Stormwater Discharges from Construction Activity for complete list of inspection requirements.
2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.
3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Pre-construction Site Assessment Checklist
(NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?
[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.
[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.
[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Access

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.
[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals
[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.
[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
[ ] [ ] [ ] The plan is contained in the SWPPP on page _____
[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:

Inspection Forms will be filled out during the entire construction phase of the project.

Required Elements:

1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

SITE PLAN/SKETCH

_____ _____

Inspector (print name) **Date of Inspection**

_____ _____

Qualified Inspector (print name) **Qualified Inspector Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes No NA

[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions at the outfalls?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease at the outfalls?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA

[ ] [ ] [ ] Is construction site litter, debris and spoils appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA

[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

3. Stabilized Construction Access

Yes No NA

[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

Runoff Control Practices

1. Excavation Dewatering

Yes No NA

[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

Runoff Control Practices (continued)

2. Flow Spreader

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

4. Stone Check Dam

Yes No NA

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Silt Fence and Linear Barriers

Yes No NA

[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation is ___% of design capacity.

Sediment Control Practices (continued)

2. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated; Filter Sock or Manufactured practices)

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
[ ] [ ] [ ] Manufactured insert fabric is free of tears and punctures.
[ ] [ ] [ ] Filter Sock is not torn or flattened and fill material is contained within the mesh sock.

Sediment accumulation ___% of design capacity.

3. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.
[ ] [ ] [ ] Sediment trap slopes and disturbed areas are stabilized.

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
[ ] [ ] [ ] Sediment basin dewatering pool is dewatering at appropriate rate.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design. All practices shall be maintained in accordance with their respective standards.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
   a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
   b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

Contractor Certification Statement

Construction Site	NYR NYSDEC Permit Number	Municipality (MS4)

I hereby certify under penalty of lay that I understand and agree to comply with the terms and conditions of the Storwater Pollution Prevention Plan (SWPPP) and agree to implement any corrective actions identified by the Qualified Inspector during a routine site inspection. I also understand that the Owner or Operator must comply with the terms and conditions of the most current version of the New York State, State Pollutant Discharge Elimination System ("SPDES") General Permit for Stormwater Discharges from construction actives and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations.

Contractors Name _____ Title _____

Signature _____ Date _____

Company Name & Address _____ Phone _____ Fax _____

Project Site Address _____

Provisions Responsible For: _____

Trained Certified Contractor Responsible for SWPPP Implementation

Name of Trained Individual	Title	NYSDEC SWT#(Card Number)

Appendix F
Vegetation and Fauna

Legend

- Property Boundary Line
- Freshwater Pond
- Rare Freshwater Mussels
- Endangered or Threatened Animals

Maxar

FAGAN ENGINEERS
& LAND SURVEYORS PC

450 WEST WATER STREET PROPERTY
VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

NYSDEC LAYOUT
with AERIAL IMAGERY (2024)

0 1,000 2,000 Feet

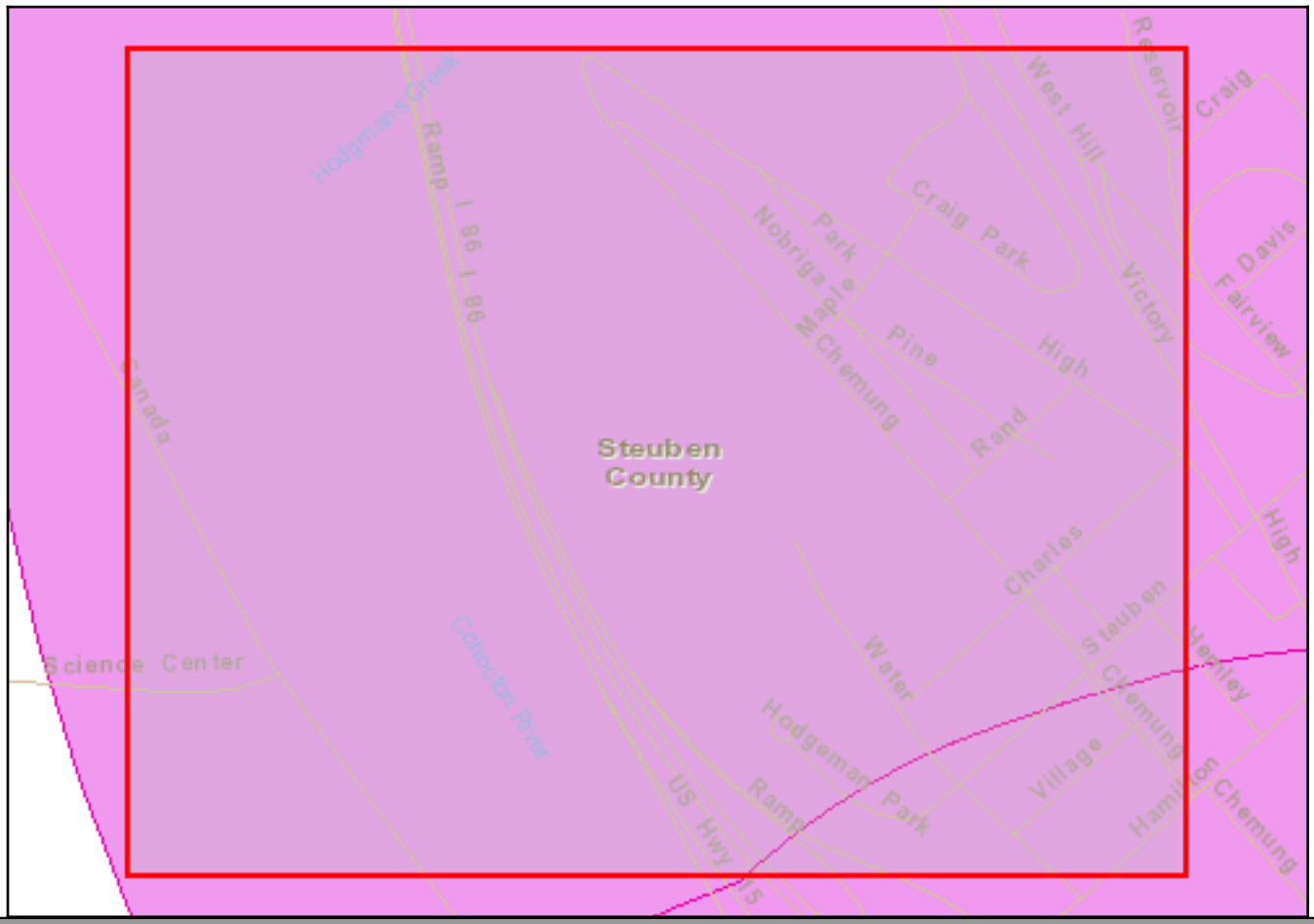
N
W E
S

SCALE: 1:4,500
(PRINTED 11" x 17")

PROJECT #: 2020-045.001
DECEMBER, 2024

New York Nature Explorer
User Defined Results Report

Criteria: Selected Map Area



Common Name	Subgroup	Distribution Status	Year Last Documente	Protection Status		Conservation Rank	
				State	Federal	State	Global
Animal: Mussels and Clams							
Yellow Lampmussel *Lampsilis cariosa*	Freshwater Mussels	Recently Confirmed	2017			S2S3	G3G4
Plant: Flowering Plants							
Wild Hydrangea *Hydrangea arborescens*	Other Flowering Plants	Recently Confirmed	2003	Threatened		S2	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documente	Protection Status		Conservation Rank	
				State	Federal	State	Global

Note: Restricted plants and animals may also have also been documented in one or more of the Towns or Cities in which your user-defined area is located, but are not listed in these results. This application does not provide information at the level of Town or City on state-listed animals and on other sensitive animals and plants. A list of the restricted animals and plants documented at the corresponding county level can be obtained via the County link(s) on the original User Defined Search Results page. Any individual plant or animal on this county's restricted list may or may not occur in this particular user-defined area.

This list only includes records of rare species and significant natural communities from the databases of the NY Natural Heritage Program. This list is not a definitive statement about the presence or absence of all plants and animals, including rare or state-listed species, or of all significant natural communities. For most areas, comprehensive field surveys have not been conducted, and this list should not be considered a substitute for on-site surveys.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To: 05/14/2024 12:27:53 UTC
Project code: 2024-0089995
Project Name: 450 W Water St DGEIS

Federal Nexus: no
Federal Action Agency (if applicable): County of Steuben

Subject: Technical assistance for '450 W Water St DGEIS'

Dear Michelle Babak:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on May 14, 2024, for '450 W Water St DGEIS' (here forward, Project). This project has been assigned Project Code 2024-0089995 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project. **Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter.**

Determination for the Northern Long-Eared Bat

Based on your IPaC submission, your proposed action will affect an area where northern long-eared bats occur. Depending on the specifics of the action, it could result in the incidental take of one or more northern long-eared bats. The presence of the species in the affected area, however, does not necessarily mean that incidental take is likely and we only recommend seeking an incidental take permit when such take is reasonably certain to occur. That is, when a project is reasonably certain to harm or kill one or more northern long-eared bats. See Next Steps below for further technical assistance.

Next Steps

The Service has developed interim voluntary guidance for non-federal[1] actions involving forest habitat modification that may affect the northern long-eared bat. Review the guidance posted here for more information https://www.fws.gov/library/collections/interim-habitat-modification-guidance.

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[1]Federal actions include all activities or programs authorized, funded, carried out, or permitted --in whole or in part --by federal agencies in the United States or on the high seas.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Green Floater *Lasmigona subviridis* Proposed Threatened
- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

Critical Habitats:

- Green Floater Lasmigona subviridis Proposed Threatened

You may coordinate with our Office to determine whether the Action may cause prohibited take of the species listed above.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

450 W Water St DGEIS

2. Description

The following description was provided for the project '450 W Water St DGEIS':

> Environmental impact assessment of old foundry site for future development.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.1614469,-77.09928879690759,14z

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   Yes

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   No

5. Have you contacted the appropriate agency to determine if your action is near any known northern long-eared bat hibernacula?

   Note: A document with links to Natural Heritage Inventory databases and other state-specific sources of information on the locations of northern long-eared bat hibernacula is available here. Location information for northern long-eared bat hibernacula is generally kept in state natural heritage inventory databases – the availability of this data varies by state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited.

   No

6. Will the proposed action result in the cutting or other means of knocking down, bringing down, or trimming of any trees suitable for northern long-eared bat roosting?

   Note: Suitable northern long-eared bat roost trees are live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities.

   No

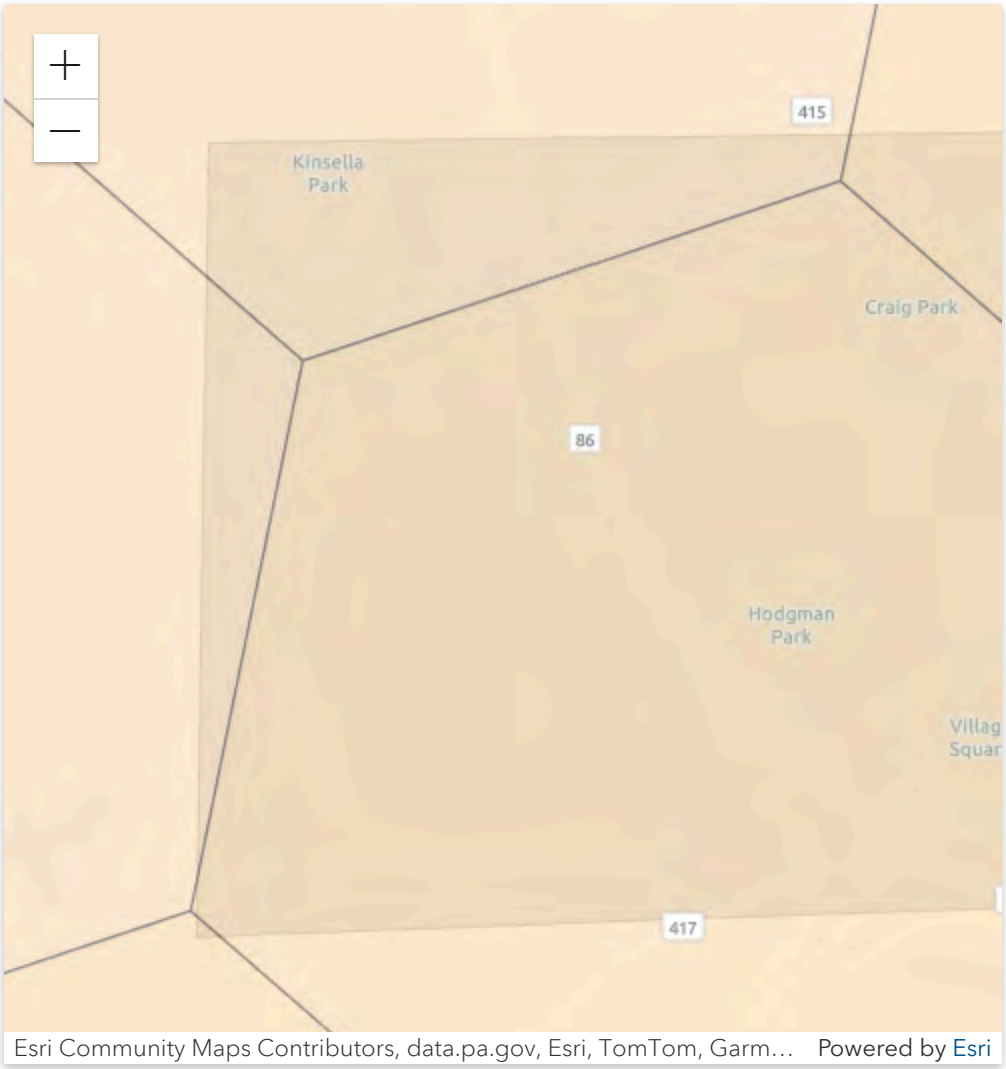
PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: County of Steuben
Name: Michelle Babak
Address: 113 E Chemung Pl
City: Elmira
State: NY
Zip: 14904
Email michelle.babak@faganengineers.com
Phone: 6074833616

NATURESERVE EXPLORER PRO

Biodiversity Report for Selected Area



LEGEND

NatureServe Documented Species (NatureServe, 2024)

Species Count

> 125

62.5

< 5

Hexagons Searched

343 mi² | 888 km²
hexagon

Selected Area

Current Search Criteria

Data Source: NatureServe Network Data

Area: Drawn Area

Counts of public data within the hexagons intersecting the searched area:

Species: 14

Observations: 0

Element occurrences: 59

Please refer to NatureServe Explorer map details for important metadata about how the precision level of distribution data can affect search results.

This report does not satisfy or replace regulatory review requirements. More information may be available from these NatureServe Network programs:

- New York Natural Heritage Program (https://www.nynhp.org)
- Pennsylvania Natural Heritage Program (https://conservationexplorer.dcnr.pa.gov/)

Counts of public data within the hexagons intersecting the searched area:

Species: 14

Observations: 0

Element occurrences: 59

Rows per page: 25 1-14 of 14

Documented Species	Informal Taxonomy	Rounded NatureServe Global Status	Legal Status	Element Occurrence Count	Observation Count
Myotis septentrionalis Northern Myotis	Mammals	G2: Imperiled	COSEWIC: 'E' SARA: 'Endangered/En voie de disparition' USESA: 'E'	3	0
Lasmigona subviridis Green Floater	Freshwater Mussels	G2: Imperiled	USESA: 'PT'	1	0
Lampsilis cariosa Yellow Lampmussel	Freshwater Mussels	G3: Vulnerable	COSEWIC: 'SC' SARA: 'Special Concern/Préoccupante'	1	0
Alasmidonta varicosa Brook Floater	Freshwater Mussels	G3: Vulnerable	COSEWIC: 'SC' SARA: 'Special Concern/Préoccupante'	1	0
Scirpus ancistrochaetus Northeastern Bulrush	Monocots	G3: Vulnerable	USESA: 'E'	1	0
Crotalus horridus Timber Rattlesnake	Reptiles	G4: Apparently Secure	COSEWIC: 'XT' SARA: 'Extirpated/Disparue du pays'	11	0
Veronicastrum virginicum Culver's-root	Dicots	G4: Apparently Secure		1	0
Ardea herodias Great Blue Heron	Birds	G5: Secure		2	0
Lithobates pipiens Northern Leopard Frog	Amphibians	G5: Secure		1	0
Notropis procne Swallowtail Shiner	Fishes - Freshwater and Anadromous Bony,	G5: Secure		1	0

	Cartilaginous; Lampreys				
Haliaeetus leucocephalus Bald Eagle	Birds	G5: Secure	COSEWIC: 'NAR' USESA: 'DL'	9	0
Pandion haliaetus Osprey	Birds	G5: Secure		19	0
Pyganodon cataracta Eastern Floater	Freshwater Mussels	G5: Secure		1	0
Hydrangea arborescens Wild Hydrangea	Dicots	G5: Secure		7	0

Rows per page: 25 1-14 of 14

Sources

NatureServe Network Programs:

- New York Natural Heritage Program (https://www.nynhp.org)
- Pennsylvania Natural Heritage Program (https://conservationexplorer.dcnr.pa.gov/)

NEW YORK STATE | Department of Environmental Conservation

KATHY HOCHUL
Governor

AMANDA LEFTON
Acting Commissioner

March 27, 2025 Sent via email

Liv Lovejoy
Southern Tier Central Regional Planning & Development Board
8 Denison Pkwy East, Ste 310
Corning, NY 14830

Re: **SEQR Lead Agency Response & Jurisdictional Review**
West Water St Industrial Site Predevelopment – ETS (GID-003551)
450 W Water Street, Painted Post (T), Steuben (C)

Liv Lovejoy:

The New York State Department of Environmental Conservation (the Department) has reviewed the information provided for the development of an industrial facility at 450 West Water Street in Painted Post, NY. Please find the following comments for the approximated project location (see *Area Map – Attachment A*).

SEQR Coordination & Establishment of Lead Agency

The NYS Department of Environmental Conservation has no objection to the Village of Painted Post Planning Board being established as SEQR lead agency for the environmental review of this action.

Biotic Communities/Endangered and Threatened Species of Flora and Fauna

We have reviewed the available information in the New York State Natural Heritage Program databases for known occurrences of federally-listed or proposed endangered or threatened species; state-listed endangered, threatened or rare animal and plant species; significant natural communities; and other significant habitats. Based on the review, a Part 182 Incidental Take permit may be required from the DEC for the take and/or incidental take of an endangered or threatened species or its habitat. In particular, threatened timber rattlesnakes (*Crotalus horridus*) were found in the vicinity of the project site and precautions will be needed to avoid a Part 182 Incidental Take permit. The Department will advise that all construction activities should be completed between November 1st and March 31st to avoid periods when timber rattlesnakes are the most active. Additionally, a Timber Rattlesnake Response Plan should be completed using the enclosed template (see *Attachment B*) and distributed to each member of the construction crew prior to project implementation. The Response Plan must be made available at the construction site for the duration of a project. Please reach out to the Division of Environmental Permits office regarding the review and approval of plans that avoid impacts to timber rattlesnakes.

Although no occurrences of northern long-eared bat (*Myotis septentrionalis*) were found in the vicinity of the project site, the Department recommends that all tree cutting activity occurs between November 1st – March 31st to minimize disturbance of federally and/or state-listed bat species

during inactive periods. Further, mapped occurrences of endangered and/or proposed endangered species indicated on the United States Fish and Wildlife Service's (USWFS) Information for Planning and Consultation (IPaC) tool (https://ipac.ecosphere.fws.gov/, see *IPaC Results – Attachment C*) may require clearance from the USFWS prior to project implementation, as well as time-of-year tree cutting restrictions which supersede the Departments' recommendations. Contact the USFWS Ecological Services Field Office located 3817 Luker Rd, Cortland NY 13045 at (607) 753-9334 or fw5es_nyfo@fws.gov for more information.

Article 15 Protection of Waters

The stream in the project area has a NYS Stream Classification of Class C and is therefore not considered a NYS protected water body. Further, a determination has been made that the stream would not be considered navigable as defined in the Article 15 Protection of Water Regulations (6NYCRR Part 608). As this section of stream is not navigable or protected, disturbance of the stream's channels and banks will not require a permit from the DEC. However, your project may be subject to Federal regulations. You should contact the United States Army Corps of Engineers' staff at the Buffalo District Office, 478 Main St., Buffalo NY 14202. They can also be reached by phone at (716) 879-4330. Regardless of whether a permit is required, standard sedimentation and erosion controls should be employed to avoid contravention of water quality standards.

Regardless of whether an Article 15 Protection of Waters permit is required, the Hodgmans Creek tributary that extends northeast under the Southern Tier Expressway is in very close proximity to listed mussel occurrences within the Cohocton River (see *Area Map – Attachment A*). As such, a mussel survey may be needed before any construction that will divert stormwater runoff into this stream can be done.

Article 24 NYS Freshwater Wetlands

Portions of New York State regulated freshwater wetlands and their adjacent areas may be located in the project area. Although some limited activities are exempt from permitting, most activities that involve disturbance within a wetland or its 100-foot adjacent area require an Environmental Conservation Law (ECL) Article 24, Freshwater Wetlands permit from the DEC. Information on regulated activities within freshwater wetlands and adjacent areas is available on DEC's website (see: https://dec.ny.gov/regulatory/permits-licenses/waterways-coastlines-wetlands/freshwater-wetlands#Determine), which contains examples of regulated activities and those exempt from wetland permits.

DEC's amended Article 24, Freshwater Wetlands Jurisdiction and Classification regulations (6 NYCRR Part 664) went into effect on January 1, 2025. To determine whether the property contains regulated freshwater wetlands the project sponsor must submit a request for a Parcel Jurisdictional Determination (Parcel JD). A Parcel JD is a determination made by DEC whether a property contains regulated freshwater wetlands or adjacent areas within the parcel boundary. Please use the following link to request a Parcel JD for the project site: https://dec.ny.gov/nature/waterbodies/wetlands/freshwater-wetlands-program/freshwater-wetland-jurisdictional-determination. If you have any problems submitting the Parcel JD request, please email fwwjurisdiction@dec.ny.gov.

If the property contains regulated freshwater wetlands or adjacent areas, further delineation of the wetland boundaries and a Project Jurisdictional Determination (Project JD) may be required. A Project JD is a determination made by DEC whether a proposed activity within a parcel

containing regulated freshwater wetlands or adjacent areas requires an Article 24 Freshwater Wetlands permit. If necessary, a Project JD may also be requested using the link provided above.

If regulated freshwater wetlands or adjacent areas are present, all efforts must be made to first avoid disturbing the wetland and adjacent area. If disturbance to the wetland and/or adjacent area cannot be avoided, the project sponsor must submit a Freshwater Wetland permit application and obtain a permit to conduct a regulated activity. In accordance with DEC's Freshwater Wetlands Permit Requirements Regulations (6 NYCRR Part 663), the applicant would need to justify the disturbance, discuss alternatives, and minimize impacts as part of the Freshwater Wetlands permit application. More information on application procedures and permit issuance standards is available on DEC's website at: https://dec.ny.gov/regulatory/permits-licenses/waterways-coastlines-wetlands/freshwater-wetlands#Determine.

Federal Wetlands

While the Department asserts jurisdiction over NYS regulated freshwater wetlands, the U. S. Army Corps of Engineers regulates federally protected wetlands. For questions regarding federal wetlands, and the federal permitting process, contact the U. S. Army Corps of Engineers at: Chief, Regulatory Branch, U. S. Army Corps of Engineers, Buffalo District, 478 Main St., Buffalo NY 14202 or (716) 879-4330.

Section 401 Water Quality Certification (WQC)

Work in certain waters and wetlands of the United States may require a permit from the U. S. Army Corps of Engineers (Corps). If a Corps permit is required, the Corps may request that the DEC make a determination (Water Quality Certification, pursuant to Section 401 of the Federal Clean Water Act) that discharges from the proposed activities, for which an applicant is seeking a Corps permit approval, will comply with the applicable effluent limitations, water quality standards, and any other applicable conditions of the State Law.

Documentation in support of a 401 Water Quality Certification would include demonstration of compliance with either the Department's State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (GP-0-20-001) or the MS4 (Municipal Separate Storm Sewer Systems). This documentation would include submission of a completed Notice of Intent and, in an MS4 area, a copy of the local municipality's approved MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form as part of a complete application. The actual SWPPP could also be required depending on the project.

Floodplain

The site may be located within the floodway boundaries (see *FEMA Flood Map – Attachment D*). Structural designs should take these criteria into account and, if located within the floodway, allow passage of the flood waters flowing through the floodway. This project must be completed in compliance with Town flood control ordinances. As required by Floodplain Management Regulations, if any state monies are used, this project must also be in compliance with 6 NYCRR Part 502 Floodplain Management Criteria for State Projects.

Stormwater General Permit – Construction

This project may need to be compliant with the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (GP-0-20-001). Construction activities that involve one acre or more of land disturbance must obtain SPDES stormwater permit coverage through either an individual permit or GP-0-20-001. To obtain authorization under GP-0-20-001 a Stormwater Pollution Prevention Plan (SWPPP) must be prepared in accordance with all applicable requirements of GP-0-20-001 and a completed Notice of Intent (NOI) form must be submitted to the Department.

An owner or operator of a construction activity that is subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of GP-0-20-001 and then have its SWPPP reviewed and accepted by the regulated, traditional land use control MS4 prior to submitting the NOI to the Department. The owner or operator must then submit the signed "MS4 SWPPP Acceptance" form along with a completed NOI to the Department. For additional information on the Department's stormwater program please visit the following webpage: http://www.dec.ny.gov/chemical/8468.html.

Air

Depending on the type of user that utilizes the proposed facilities, this project may require an Air permit for air contamination source construction and operation. Please provide additional details about any proposed emissions sources, including the processes operating at the facility, the raw materials being used, the height and location of stacks or vents, the requirements that apply to the facility, and the controls being applied. Air permitting requirements are found in 6 NYCRR Part 201 and on our website at https://www.dec.ny.gov/chemical/8569.html.

As part of our review for air permits, the Climate Leadership and Community Protection Act (CLCPA), which became effective January 1, 2020, directs state agencies to determine if the decisions they make are consistent with the statewide greenhouse gas (GHG) emissions limits established in Environmental Conservation Law (ECL) Article 75. In the case of the DEC, this includes determining if permits issued are consistent with or would interfere with the attainment of the established statewide GHG emissions limits.

Historic, Architectural, Archeological, and Cultural Resources

GIS review indicates that the project site is located within an archaeologically sensitive area. It is suggested that recommendations be sought from NYS OPRHP regarding the potential impacts on historic and archeological resources from the development of this area. Additional information can be found on NYS OPRHP's website at http://nysparks.com/shpo/online-tools/ or by calling (518) 237-8643. Potential impacts to these resources must be considered in the State Environmental Quality Review (SEQR) documentation. For example, previous disturbance should be described to indicate whether future project components will have the potential to further affect archeological resources.

Environmental Justice

The project location is adjacent to an area that is subject to the Commissioners Policy regarding Environmental Justice and Permitting (CP- 29). Permitting for certain Major projects (any action requiring a permit identified in section 621.2 of title 6 of the Official Compilation of Codes, Rules

and Regulations of the State of New York (6 NYCRR Part 621.2)), is required to be in compliance with the CP-29 policy and may require additional outreach to impacted communities.

Remediation Sites

Your site is located in proximity to a remediation site (see *Remediation Site Records – Attachment E*). Potential impacts to sediment quality should be considered prior to the reuse or placement of excavated soils from the surrounding area as upland fill, and a beneficial reuse determination may be required from the NYSDEC Division of Materials Management. For information regarding the remedial requirements, please contact the NYSDEC Division of Environmental Remediation at (585) 226-5356.

Invasive Species Recommendations

To minimize the spread of invasive species during construction, consider the following best management practices (BMPs):

- Clean all construction equipment of mud, seeds, vegetation, and other debris as you move from one area to another.
- Excavate topsoil separately from subsoil for appropriate backfilling.
- Return all ground disturbance to pre-construction conditions and stabilize disturbed areas with seeding and mulch as soon as possible.

Stream Protection Recommendation Notes

A portion of a stream is located on the subject property. Streamsides, sometimes called riparian zones or stream corridors, are the link between land and water, and the health of streams depends in large part on the condition of the streamside. Over the past two decades, research has shown that naturally vegetated corridors along streams perform numerous services essential for human health and welfare. Healthy stream corridors can reduce floods; trap sediment; remove dissolved contaminants; provide shade; contribute leaf matter (important for insect food and fish habitat); provide wildlife habitat; offer recreational opportunities; and increase aesthetic value and desirability of a property.

In order to protect the stream corridor, consider the following:

- Maintain a healthy, vegetated streamside buffer by preserving trees and shrubs along the stream edge and limiting logging to removing large branches that fall into the stream and divert streamflow and cause erosion.
- Control water flow through the streamside buffer to filter contaminants and reduce erosion by managing stormwater runoff from dwellings to prevent channelized flow; minimizing impervious areas near the streamside by using stone or brick instead of pavement for driveways and walkways; and excluding vehicles, livestock, or excessive pedestrian traffic.
- Prevent contaminants from entering the stream corridor by minimizing or eliminating buffer area exposure to fertilizer, herbicides, pesticide, animal waste, household and automotive chemicals, trash, debris, and piles of leaf litter and by maintaining septic systems.

Please be advised that the project is still subject to any other necessary local approvals. In the case that the project scope or location changes, please contact us so that we may reevaluate this determination. State regulations applicable to the location subject to this determination are occasionally revised and you should verify the need for permits if the project is delayed or

postponed. This determination regarding the need for permits will remain effective for one year unless you are otherwise notified.

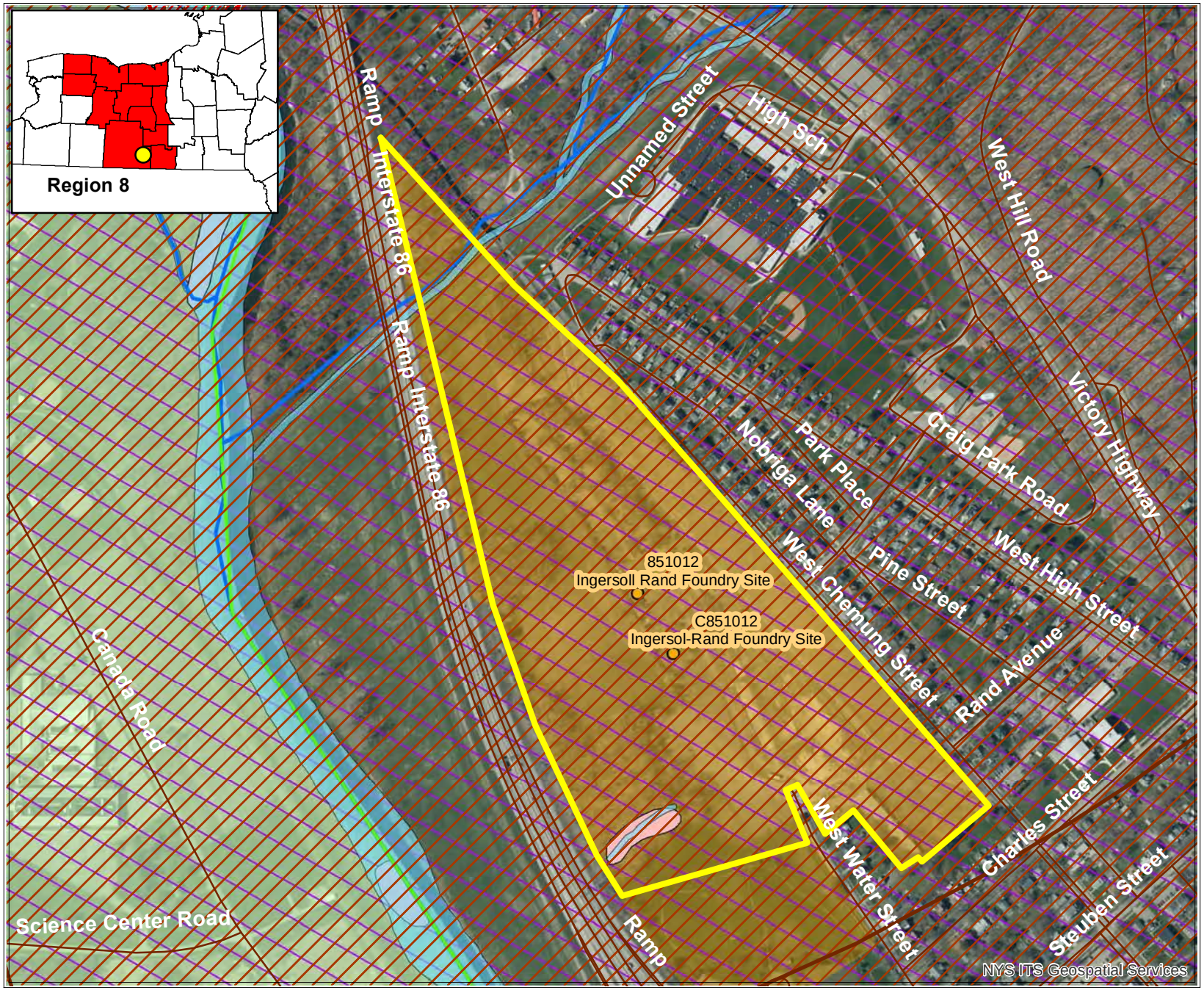
If you have any questions, feel free to contact me at 585-226-5466 or by email at felicia.paradise@dec.ny.gov.

Thank you,

Felicia Paradise
Environmental Analyst

Ecc.

Attachments: *Area Map – Attachment A*
Timber Rattlesnake Response Plan – Attachment B
IPaC Report – Attachment C
FEMA Flood Map – Attachment D
Remediation Site Records – Attachment E



PROJECT LOCATION MAP

Attachment A

Liv Lovejoy
Southern Tier Central-Regional Planning & Development Board
West Water St Industrial Site Predevelopment
GID-003551
Painted Post (T), Steuben (C)

Legend

- Project Area
- Potential Environmental Justice Area
- Archeological Sites of Sensitivity
- Remediation Sites
- Mammals
- Birds
- Reptiles and Amphibians
- Insects and Snails
- Federal Wetlands
- Informational Freshwater Wetland Mapping

Streams

- Unprotected
- Protected

Disclaimer: This map was prepared by the NYSDEC Division of Environmental Permits using the most current data available. It is deemed accurate but is not guaranteed. NYSDEC is not responsible for any inaccuracies in the data and does not necessarily endorse any interpretations or products derived from the data.

NEW YORK STATE | Department of Environmental Conservation

Timber Rattlesnake Response Plan

Project Location:

- Street, Town, County
- Decimal Degrees Latitude, Longitude

Project Schedule:

- Dates

Project Summary:

- A state-listed *threatened* species of snake, the Timber Rattlesnake, is known to occur in the vicinity of the project area.
- **It is illegal to take (kill), import, transport, possess, or sell an animal listed as *threatened* without a license.**
- Can work be completed between November 1 and March 31 when timber rattlesnakes are confined to den sites?
- Project description:

Conditions:

Avoidance

- Avoid walking in tall grass and brushy areas, always watch where you step.
- Do not reach into rock piles, log piles, or into ledges without first looking the area over to confirm that snakes are not present.
- Rattlesnakes may be attracted to areas around, under, or on equipment, so caution must be exercised when entering or working near machinery.

Encounters

- If a rattlesnake is encountered at the work site during the project, crew members will immediately contact NYSDEC Bureau of Wildlife staff, based at the NYSDEC Region 8 Bath Sub-Office (or another licensed monitor). Construction at the site will be shut down and the movement of the rattlesnake will be monitored until NYSDEC staff or licensed monitor arrives. Construction will not resume until the rattlesnake has been removed from the site, the site has been searched by NYSDEC staff for licensed monitor or additional rattlesnakes.

Essential Contact Information:

NYSDEC Wildlife Staff

Name: Madeline Wlasniewski, NYSDEC Fish and Wildlife Tech 2

- Phone Number: 607-622-8273

Alternate Contact: DEC Wildlife Staff on-duty in Bath

- Phone Number: 607-776-2165

Nearest Hospital with Antivenom

Hospital Name: Guthrie Corning Hospital

Phone Number: 607-937-7283

Copies of this plan should be given to each member of the construction crew prior to the project and should be made available at the construction site for the duration of the project.

IPaC U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Steuben County, New York

Local office

New York Ecological Services Field Office

(607) 753-9334
(607) 753-9699
fw5es_nyfo@fws.gov

3817 Luker Road
Cortland, NY 13045-9385

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

NOT FOR CONSULTATION

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat Perimyotis subflavus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Clams

NAME	STATUS
Green Floater Lasmigona subviridis Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7541	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

NOT FOR CONSULTATION

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete

NOT FOR CONSULTATION

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Aug 31

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability

of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

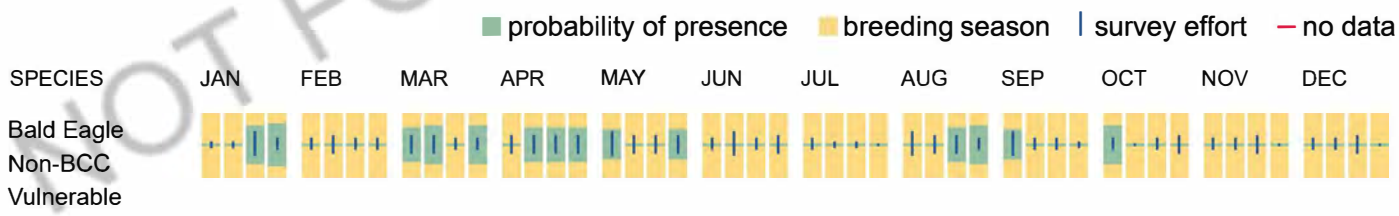
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



NOT FOR CONSULTATION

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

NOT FOR CONSULTATION

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

NOT FOR CONSULTATION

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Aug 31
Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Black-capped Chickadee Poecile atricapillus practicus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 10 to Jul 31
Bobolink Dolichonyx oryzivorus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Kentucky Warbler Geothlypis formosa This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler Setophaga discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31

NOT FOR CONSULTATION

Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
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3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

NOT FOR CONSULTATION

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

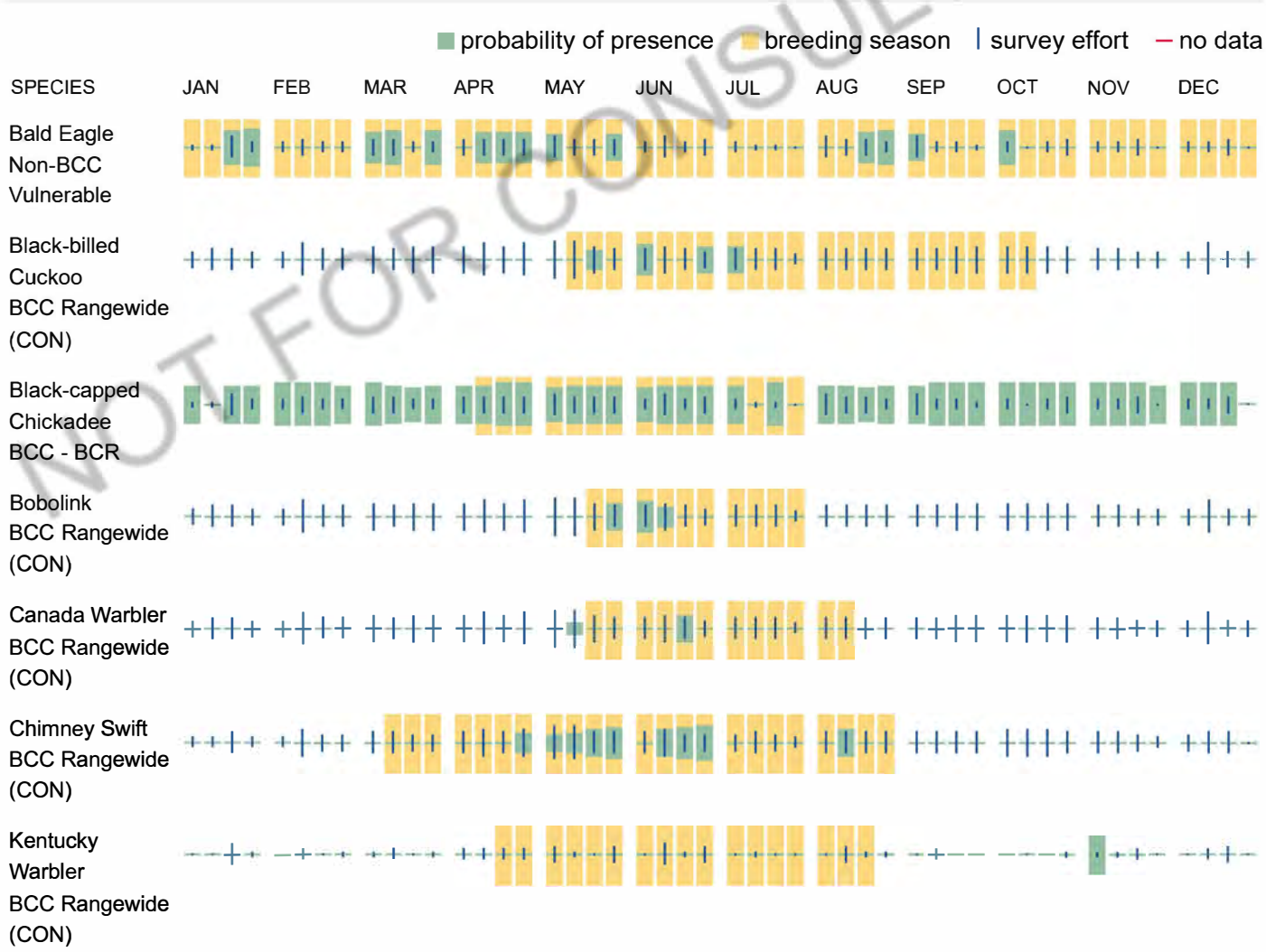
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

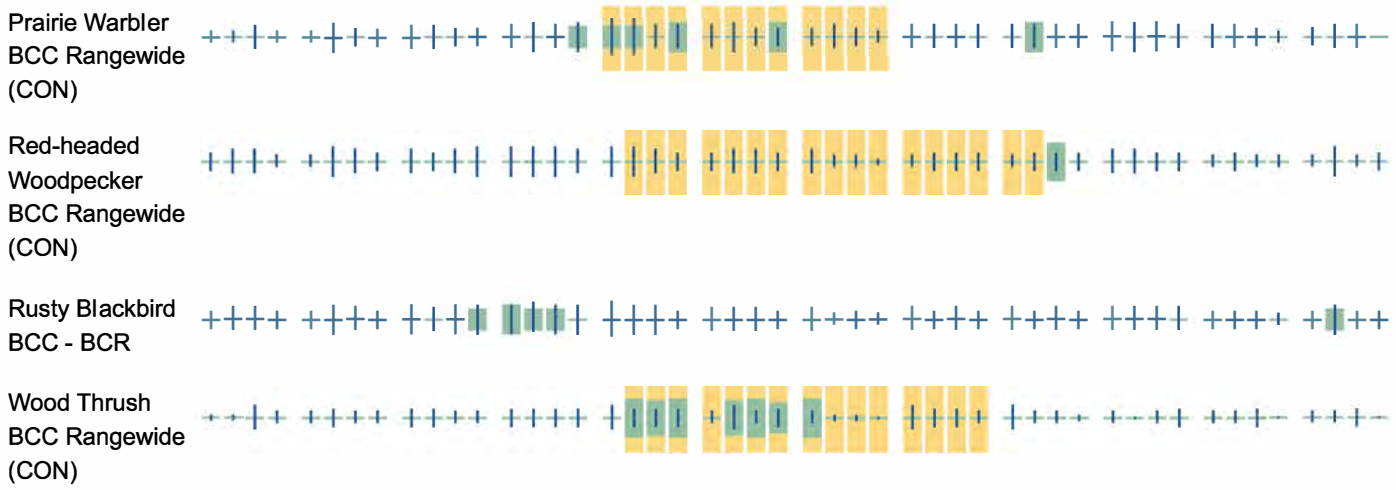
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



NOT FOR CONSULTATION



Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

NOT FOR CONSULTATION

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ “Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds”.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project

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review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

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Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Facilities

Wildlife refuges and fish hatcheries

Refuge and fish hatchery information is not available at this time

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER POND
PUBF

RIVERINE
R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

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The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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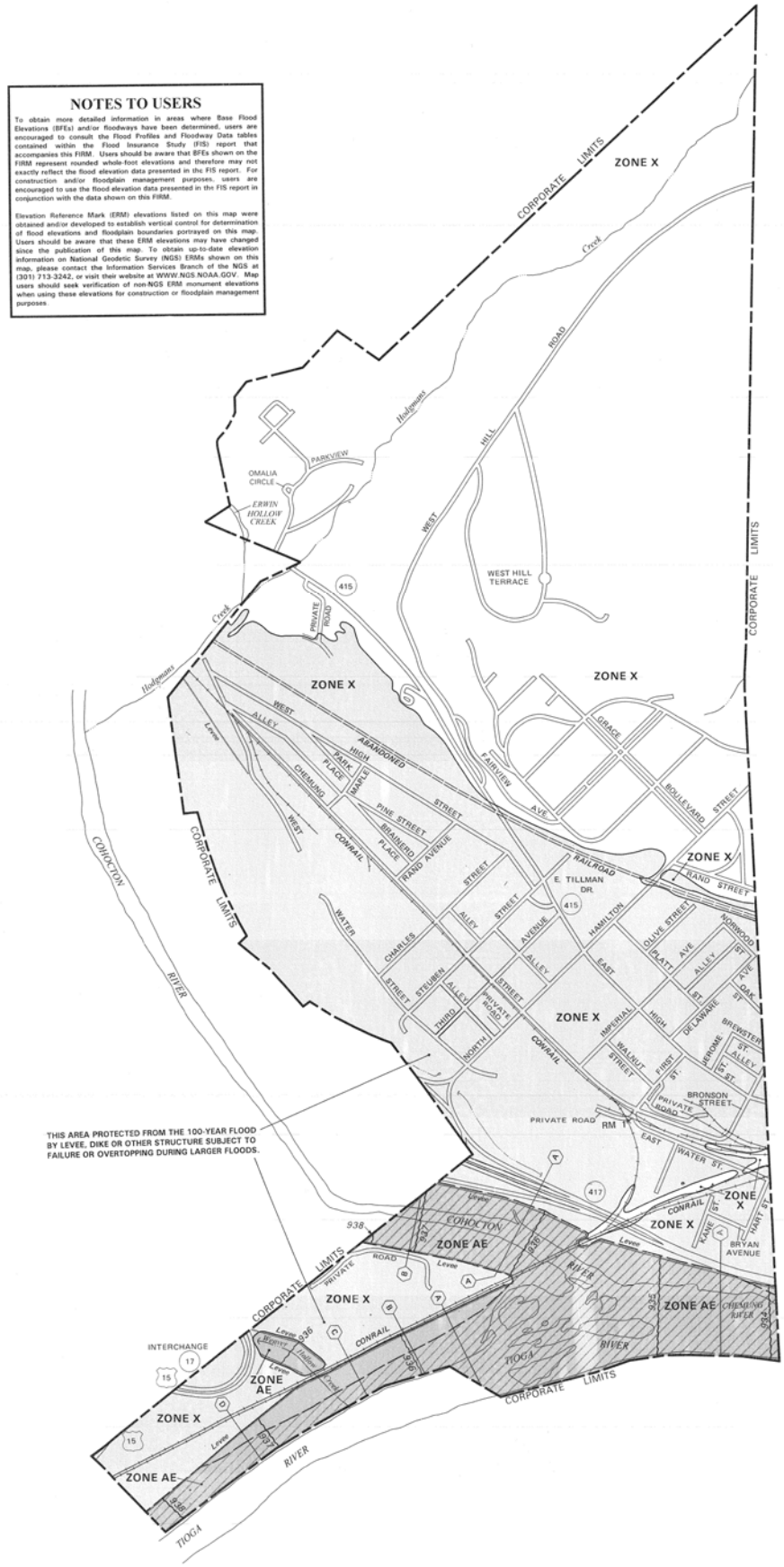
Attachment D



ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION IN FT. (NGVD 1929)[1]	DESCRIPTION OF LOCATION
RM 1	935.73	Standard disc in south head wall of culvert under CONRAIL railroad spur at private road southwest from intersection of East Water Street, First Street, Bronson Street, and Chemung Street.

[1]National Geodetic Vertical Datum of 1929.

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- **ZONE A** No base flood elevations determined.
- **ZONE AE** Base flood elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE A99** To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.
- **ZONE V** Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- **ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** Areas determined to be ouside 500-year floodplain.
- **ZONE D** Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS†

Identified 1983 | Identified 1990 or Later | Otherwise Protected Areas Identified 1991 or Later

†Coastal barrier areas are normally located within or adjacent to special flood hazard areas.

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 Base Flood Elevation Line; Elevation in Feet*
- (D)—(D) Cross Section Line
- (EL 987) Base Flood Elevation in Feet Where Uniform Within Zone*
- RM 7x Elevation Reference Mark
- •M1.5 River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for possible updated flood hazard information prior to use of this map for property purchase or construction purposes.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of special flood hazard (100-year flood) include Zones A, AE, AH, AO, A99, V, and VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

MAP REPOSITORY:
Painted Post Village Hall, Corner of Steuben and West High Streets, Painted Post, New York 14870 (Maps available for reference only, not for distribution.)

INITIAL IDENTIFICATION:
SEPTEMBER 7, 1973

FLOOD HAZARD BOUNDARY MAP REVISIONS:
NOVEMBER 16, 1973
APRIL 23, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE:
SEPTEMBER 30, 1977

FLOOD INSURANCE RATE MAP REVISIONS:
FEBRUARY 2, 1979
May 18, 2000 – to decrease base flood elevations, to change zone designations, and to update map format.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE
600 0 600 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

VILLAGE OF
PAINTED POST, NEW YORK
STEUBEN COUNTY

ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
360779 0001 E

MAP REVISED:
MAY 18, 2000

Federal Emergency Management Agency

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Remediation Databases Details

Site Record

Document Repository

Site-related documents are available for review through the DECInfo Locator on line at DECInfoLocator

Administrative Information

Site Name: Ingersoll Rand Foundry Site
Site Code: 851012
Program: State Superfund Program
Classification: C
EPA ID Number:

Location

DEC Region: 8
Address: 450 Water Street
City: Painted Post Zip: 14870
County: Steuben
Latitude: 42.16187877
Longitude: -77.09598817
Site Type: DUMP STRUCTURE
Estimated Size: 15 Acres

Site Owner(s) and Operator(s)

Current Owner Name: Ingersoll-Rand Corporation
Current Owner(s) Address: 200 Chestnut Ridge Road / PO Box 8738
Woodcliff Lake,NJ, 07675
Current Owner Name: INGERSOLL-RAND, INC.
Current Owner(s) Address: PO BOX 8738, 200 CHESTNUT RIDGE RD.
WOODCLIFF LAKE,NJ, 07675
Owner(s) during disposal: INGERSOLL-RAND, INC.
Current On-Site Operator: Ingersoll-Rand Corporation
Stated Operator(s) Address: 101 CHEMUNG STREET
PAINTED POST,NY 14870

Hazardous Waste Disposal Period

From: 1940s **To:** 1985

Site Description

The Ingersoll Rand Foundry site is located in a suburban portion of Steuben County, NY. The main site features included a main building and several small buildings associated with foundry operations. The site also included a parking area and roadways. About one quarter of the site area is wooded. The Cohocton River is located approximately 1,200 feet south of the site. The site is currently inactive but until 1985, it was a gray iron foundry that produced iron castings. The surrounding parcels are used mainly for residential and transportation purposes. Due to known and unknown spills of PCB oils and other chemicals that might have occurred during past operations, Ingersoll Rand did an environmental audit of the facility in early 1986. The results indicated elevated levels of PCBs at several places in and around the buildings. An Interim Remedial Measure (IRM) was performed which consisted of soil removal, demolition and removal of contaminated walls and concrete floor and the removal of other contaminated structural metal components. Also investigated was an alleged drum disposal area, but no hazardous waste disposal was found. Groundwater is not impacted by the site. The foundry was not identified as the source of low level 1,1,1-trichloroethane groundwater contamination (close to NYS groundwater standard of 5 ppb) that exists in the area. A Record of Decision (ROD) was signed on March 30, 1994 which called for a limited groundwater monitoring program, deed restrictions on a 1.62-acre PAH contaminated soil area, and maintenance of existing site security and fencing. The limited groundwater monitoring program results revealed contaminant levels are below the applicable Part 703 groundwater standards. The property deed restrictions called for in the ROD was implemented by the Ingersoll Rand Company in January 2001. The contamination identified at the site has been properly remediated. Site delisted 9/25/03.

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type
OTHER CHEMICAL SPILLS
PCB OILS FROM TRANSFORMERS, CAPACITORS

Site Environmental Assessment

The primary contaminants of concern at the site included PCBs and PAHs. PCB-contaminated soil and structures have been remediated. Deed restriction has been placed in the area identified as contaminated with PAHs. A groundwater assessment done for this site did not detect PCBs. Groundwater assessment also concluded that the foundry is not the source of the known low level TCA contamination (close to NYS groundwater standard of 5ppb) in this area. No environmental problems associated with the disposal of hazardous waste remain at this site.

Site Health Assessment

An on-site cleanup of contaminated surface soil and waste areas reduced the potential for on-site exposure. A concern exists since 1,1,1-trichloroethane was found in one of the Village of Painted

Post's municipal water supply wells at levels close to the NYS drinking water standard. This well is located 500 feet northeast of the site. NYSDOH resampled the municipal wells and contaminant levels were below the drinking water standard. Since no obvious source of the 1,1,1-trichloroethane contamination was found, a long-term groundwater monitoring program has been implemented. All homes in the vicinity of the site are served by public water.

For more Information: E-mail Us

Refine Current Search

Wetland Delineation Report

Tyoga Container Company, Inc.
Painted Post Distribution Center
Town of Erwin, Steuben County, New York

Prepared for:

TYOGA CONTAINER CO.
9 Fish Street
PO Box 517
Tioga, PA 16946

Prepared by:

LARSON DESIGN GROUP
1000 Commerce Park Drive, Suite 201
Williamsport, PA 17701

LDG Project No. 7838-015

June 2020

Larson Design Group

Tyoga Container Company, Inc. – Painted Post Distribution Center

Town of Erwin ■ Steuben County ■ New York

LDG Project No. 7838-015

June 9, 2020

Larson Design Group (LDG) completed a wetland investigation for the Painted Post Distribution Center in the Town of Erwin, Steuben County, New York to determine if the proposed project will encroach upon any wetlands.

This project location consists of forested areas and open fields within a previously impacted and disturbed site. This area has had soil disturbance and portions of the vegetation are often maintained and mowed, thereby limiting the density and diversity within sections of the project area. The proposed project is within a previously impacted site that is bordered by Highway Route 86, a levee system, old parking lot and a train yard. The project area can be accessed off West High Street or Water Street. The proposed activities consist of the construction of a new distribution center for Tyoga Container Company, Inc.

The investigative area includes one workspace of approximately 25 acres that contains previously disturbed areas, cut and fill soils and portions that are maintained and mowed throughout the year. At the time of the investigation, portions of this project workspace were mowed. The proposed project does not contain an existing access road but can be accessed off of West High Street or Water Street. A project location map for this project, as well as a photo log showing the observed habitats and existing site conditions at the time of the investigation, are attached following the report findings.

Joshua E. Glace of Larson Design Group, Inc. conducted the wetland investigation on June 3, 2020. This investigation was conducted in accordance with the criteria set forth in the *1987 U.S. Corps of Engineers Wetland Delineation Manual, Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast.* As directed in these documents, the project area was examined for evidence of hydrophytic vegetation, hydric soils and signs of wetland hydrology, as these three parameters are required under normal field conditions for an area to be classified as a wetland.

According to the National Wetlands Inventory (NWI), there is one (1) wetland present within the immediate investigative area and is mapped as a freshwater pond. During the investigation, one wetland was identified within the project area that met the criteria required to be designated as a wetland through the combined presence of hydrophytic vegetation, hydric soils and hydrology. No streams were identified during the investigation.

Wetland 1 is a depressional and concave wetland which encompasses the previously determined NWI freshwater pond system, although that area no longer functions as an open water body. Wetland 1 is comprised of forested and emergent wetland habitats and is located within a forested portion of the proposed project area. This wetland retains most of its hydrology as it is a depressional and concave system. Vegetation within this wetland consisted of Virginia Creeper (*Parthenocissus quinquefolia*), Bladder Sedge (*Carex intumescens),* Jewelweed (*Impatiens capensis*), American Sycamore (*Platanus occidentalis*), Green Ash (*Fraxinus pennsylvanica*), Silver Maple (*Acer saccharinum*), Canada Goldenrod (*Solidago canadensis*), Multiflora Rose (*Rosa multiflora*), Skunk Cabbage (*Symplocarpus foetidus*), Sensitive Fern (*Onoclea sensibilis*) and Ostrich Fern (*Matteuccia struthiopteris*). Soils within the wetland presented Munsell colors of 5Y-2.5/1, 10YR-4/2 with mottling (10YR-4/6) at 2%, and 10YR-5/1 with mottling (7.5YR-4/6) at 3%. At the time of the investigation, these soils had silt clay loam, silt loam textures, and hydric soil determination was based on a Depleted Matrix (F3) hydric soil indicator. Wetland hydrology indicators observed at the time of investigation consisted of Water-Stained Leaves (B9) and Drainage Patterns (B10).

Based on NRCS mapping, there were two (2) soil types identified within the project area. Neither of those soil series meets the hydric soil criteria developed by the National Technical Committee for Hydric Soils, although one soil series does have the ability to contain hydric components. The majority of the project area contains previously impacted and disturbed soils. Please see the attached Soils Report for additional information.

This report represents an unverified jurisdictional wetland determination and the author's scientific opinion of this site. All work was done in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, applicable Regional Supplement. Please be advised that the New York Department of Environmental Conservation and the United States Army Corps of Engineers have regulatory authority over all wetlands. Authorization must be obtained from these agencies prior to any disturbance.

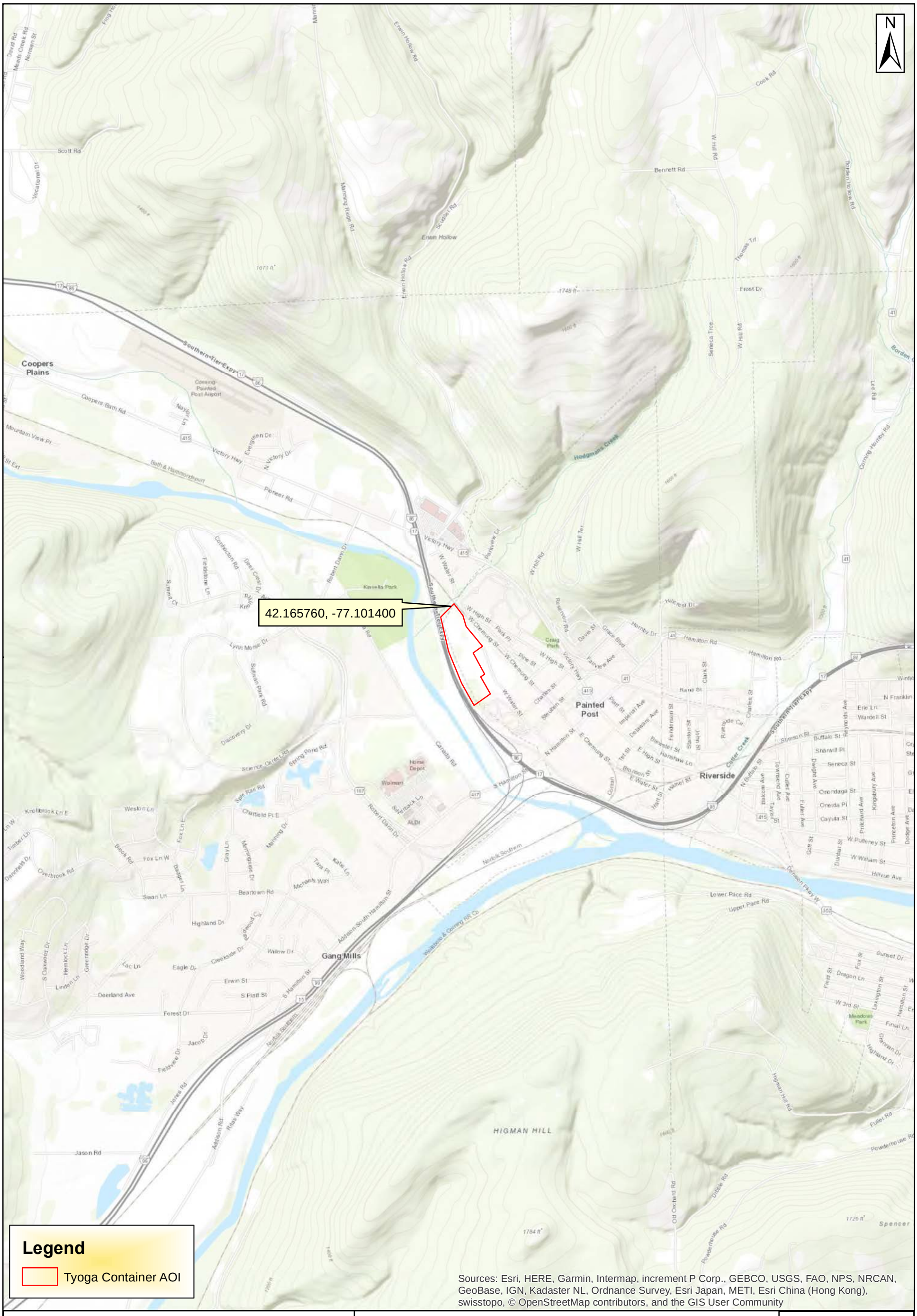
If you should have any questions concerning the site investigation or need additional information, please feel free to contact me at LDG's Selinsgrove, PA office at 570-374-5700 ext. 4011 or via email at jglace@larsondesigngroup.com.

Respectfully submitted,
Larson Design Group

Joshua E. Glace

Joshua E. Glace, PWS, CPESC, SEO
Senior Environmental Specialist

Attachments: Project Location Map
Wetland Delineation Map
NWI Map
Data Sheets
Photo Log
Soils Report



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FAX: 570.323.9902
www.larsondesigngroup.com
Larson Design Group®

Tyoga Container Company, Inc.- Painted Post Distribution Center Location Mapping

Town of Erwin, Steuben County, NY

Date	6/9/2020
Designer	TEG
Project No.	7838-015
Scale	1 inch = 2,000 feet

Path: P:\7838\7838-015 Foor - Tyoga Container Warehouse\Wetlands\Mapping\Location Map Tyoga Container.mxd

Larson Design Group

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Tyoga Container Company, Inc.- Painted Post Distribution Center Delineation Mapping

Town of Erwin, Steuben County, NY

Date	6/9/2020
Designer	TEG
Project No.	7838-015
Scale	1 inch = 185 feet

Path: P:\7838\7838-015 Foor - Tyoga Container Warehouse\Wetlands\Mapping\Delineation Map Tyoga Container.mxd

U.S. Fish and Wildlife Service
National Wetlands Inventory

Tyoga Container

June 4, 2020

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP1

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Wetland Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.160788 Long: -77.100075 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: PUBF

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	If yes, optional Wetland Site ID: Wetland 1

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet refers to a sample point taken within Wetland 1 in the proposed project area. This wetland includes an NWI mapped Freshwater Pond habitat, that has converted to a wetland system. Wetland 1 is emergent and forested, and is concave and depressional in nature.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators present at this sample location consisted of Water-Stained Leaves (B9), and Drainage Patterns (B10).

VEGETATION – Use scientific names of plants.

Sampling Point: SP1

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus occidentalis	15%	YES	FACW
2. Fraxinus pennsylvanica	10%	YES	FACW
3. Acer saccharinum	15%	YES	FACW
4.			
5.			
6.			
7.			
	40%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. Rosa multflora	10%	YES	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10%	= Total Cover	

Herb Stratum (Plot size: 5 Feet)			
1. Carex intumescens	20%	YES	FACW
2. Impatiens capensis	10%	YES	FACW
3. Solidago canadensis	20%	YES	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50%	= Total Cover	

Woody Vine Stratum (Plot size: 30 Feet)			
1. Parthenocissus quinquefolia	10%	YES	FACU
2.			
3.			
4.			
	10%	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 63% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was determined to be hydrophytic based on the results of the Dominance Test Worksheet.

SOIL

Sampling Point: SP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	5Y-2.5/1	100%	N/A	N/A	N/A	N/A	See remarks	Silt clay loam
12-16"	10YR-5/1	97%	7.5YR-4/6	3%	C	M, PL	Silt clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Soils at this sample location were determined to be hydric as they met the requirements for a Depleted Matrix (F3) hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP2

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 2-4%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.160827 Long: -77.100190 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	If yes, optional Wetland Site ID: N/A
Wetland Hydrology Present?	Yes _____	No X	

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet refers to a sample point taken within an upland area adjacent to Wetland 1. This area is convex in nature and is forested.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

There were no wetland hydrology indicators present at this sample location during the time of investigation.

VEGETATION – Use scientific names of plants.

Sampling Point: SP2

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus occidentalis	15%	YES	FACW
2. Fraxinus pennsylvanica	10%	YES	FACW
3. Acer saccharinum	15%	YES	FACW
4.			
5.			
6.			
7.			
	40%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 Feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Herb Stratum (Plot size: 5 Feet)			
1. Impatiens capensis	15%	YES	FACW
2. Galium mollugo	10%	NO	FACU
3. Alliaria petiolata	10%	NO	FACU
4. Solidago canadensis	20%	YES	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55%	= Total Cover	

Woody Vine Stratum (Plot size: 30 Feet)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	0	x 3 =	0
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	95 (A)		270 (B)

Prevalence Index = B/A = 2.84

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was determined to be hydrophytic based on the results of the Prevalence Index Worksheet.

SOIL

Sampling Point: SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	5Y-2.5/1	100%	N/A	N/A	N/A	N/A	Silt loam	
8-12"	2.5Y-6/4	100%	N/A	N/A	N/A	N/A	Sand	
12-16"	10YR-3/1	50%	N/A	N/A	N/A	N/A	Silt loam	
	10YR-3/2	50%	N/A	N/A	N/A	N/A	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Soils at this sample location were not determined to be hydric as they did not meet the requirements for a hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP3

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Wetland Local relief (concave, convex, none): Concave Slope (%): 1-3%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.161056 Long: -77.100289 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	If yes, optional Wetland Site ID: Wetland 1

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet refers to a sample point taken within Wetland 1, which is an emergent and forested system that is concave and depressional in nature.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	X Water-Stained Leaves (B9)	Secondary Indicators (minimum of two required)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Surface Soil Cracks (B6)
___ Saturation (A3)	___ Marl Deposits (B15)	X Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	___ Geomorphic Position (D2)
___ Sparsely Vegetated Concave Surface (B8)		___ Shallow Aquitard (D3)
		___ Microtopographic Relief (D4)
		___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators present at this sample location consisted of Water-Stained Leaves (B9), and Drainage Patterns (B10).

VEGETATION – Use scientific names of plants.

Sampling Point: SP3

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharinum	15%	YES	FACW
2. Fraxinus pennsylvanica	5%	NO	FACW
3. Platanus occidentalis	10%	YES	FACW
4.			
5.			
6.			
7.			
	30%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. Rosa multiflora	10%	YES	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10%	= Total Cover	

Herb Stratum (Plot size: 5 Feet)			
1. Symplocarpus foetidus	20%	YES	OBL
2. Onoclea sensibilis	10%	NO	FACW
3. Matteuccia struthiopteris	45%	YES	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75%	= Total Cover	

Woody Vine Stratum (Plot size: 30 Feet)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was determined to be hydrophytic based on the results of the Dominance Test Worksheet.

SOIL

Sampling Point: SP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR-4/2	98%	10YR-4/6	2%	C	M	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils at this sample location were determined to be hydric as they met the requirements for a Depleted Matrix (F3) hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP4

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 1-2%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.161715 Long: -77.100917 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: N/A

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet refers to a sample point taken within an upland forested and emergent area of the proposed project area, located to the North of Wetland 1.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

There were no wetland hydrology indicators present at this sample location during the time of investigation.

VEGETATION – Use scientific names of plants.

Sampling Point: SP4

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	10%	YES	FACU
2. Populus grandidentata	15%	YES	FACU
3.			
4.			
5.			
6.			
7.			
	25% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 5 Feet)			
1. Alliaria petiolata	10%	NO	FACU
2. Galium asprellum	15%	YES	OBL
3. Tussilago farfara	5%	NO	FACU
4. Hesperis matronalis	15%	YES	FACU
5. Solidago canadensis	10%	NO	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55% = Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)			
1. Parthenocissus quinquefolia	20%	YES	FACU
2.			
3.			
4.			
	20% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was not determined to be hydrophytic based on the results of the Dominance Test Worksheet.

SOIL

Sampling Point: SP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR-3/2	100%	N/A	N/A	N/A	N/A	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Soils at this sample location were not determined to be hydric as they did not meet the requirements for a hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP5

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.162523 Long: -77.100763 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: N/A

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet was taken within an upland area located in an open field that was previously impacted.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

There were no wetland hydrology indicators present at this sample location during the time of investigation.

VEGETATION – Use scientific names of plants.

Sampling Point: SP5

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 5 Feet)			
1. Grass species	25%	YES	N/A
2. Galium mollugo	10%	NO	FACU
3. Centaurea stoebe	20%	YES	UPL
4. Lotus corniculatus	5%	NO	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60% = Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was not determined to be hydrophytic based on the results of the Dominance Test Worksheet.

SOIL

Sampling Point: SP5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4"	5Y-2.5/1	100%	N/A	N/A	N/A	N/A	Silt loam	
4-16"	10YR-2.5/1	100%	N/A	N/A	N/A	N/A	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Soils at this sample location were not determined to be hydric as they did not meet the requirements for a hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP6

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 2-3%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.163247 Long: -77.101601 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: N/A

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet refers to a sample point taken within an upland forested area of the proposed project area.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

There were no wetland hydrology indicators present at this sample location during the time of investigation.

VEGETATION – Use scientific names of plants.

Sampling Point: SP6

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus species	10%	YES	N/A
2. Acer saccharinum	15%	YES	FACW
3.			
4.			
5.			
6.			
7.			
	25% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. Lonicera japonica	10%	YES	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10% = Total Cover		
Herb Stratum (Plot size: 5 Feet)			
1. Hesperis matronalis	15%	YES	FACU
2. Alliaria petiolata	30%	YES	FACU
3. Viola species	10%	NO	N/A
4. Solidago canadensis	10%	NO	FACU
5. Galium asprellum	5%	NO	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70% = Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)			
1. Parthenocissus quinquefolia	10%	YES	FACU
2.			
3.			
4.			
	10% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 17% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was not determined to be hydrophytic based on the results of the Dominance Test Worksheet.

SOIL

Sampling Point: SP6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12"	7.5YR-2.5/1	100%	N/A	N/A	N/A	N/A	Silt loam	
12-16"	10YR-3/2	100%	N/A	N/A	N/A	N/A	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Soils at this sample location were not determined to be hydric as they did not meet the requirements for a hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP7

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.164028 Long: -77.101886 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: N/A

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet refers to a sample point taken within an upland field within the proposed project area that was previously impacted.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

There were no wetland hydrology indicators present at this sample location during the time of investigation.

VEGETATION – Use scientific names of plants.

Sampling Point: SP7

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 5 Feet)			
1. Taraxacum officinale	10%	NO	FACU
2. Grass species	30%	YES	N/A
3. Stellaria media	25%	YES	FACU
4. Plantago lanceolata	10%	NO	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75% = Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was not determined to be hydrophytic based on the results of the Dominance Test Worksheet.

SOIL

Sampling Point: SP7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR-4/3	100%	N/A	N/A	N/A	N/A	Silt loam	
6-16"	10YR-5/4	100%	N/A	N/A	N/A	N/A	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Soils at this sample location were not determined to be hydric as they did not meet the requirements for a hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP8

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 1-2%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.165070 Long: -77.102520 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: N/A

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet refers to a sample point taken within an upland area located between a previously impacted field and fence line vegetation.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

There were no wetland hydrology indicators present at this sample location during the time of investigation.

VEGETATION – Use scientific names of plants.

Sampling Point: SP8

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. Rhus typhina	15%	YES	UPL
2.			
3.			
4.			
5.			
6.			
7.			
	15% = Total Cover		
Herb Stratum (Plot size: 5 Feet)			
1. Dipsacus fullonum	10%	NO	FACU
2. Hesperis matronalis	15%	YES	FACU
3. Alliaria petiolata	15%	YES	FACU
4. Lotus corniculatus	10%	NO	FACU
5. Grass species	10%	NO	N/A
6. Taraxacum officinale	5%	NO	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	65% = Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)			
1. Parthenocissus quinquefolia	20%	YES	FACU
2. Vitis labrusca	10%	YES	FACU
3.			
4.			
	30% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was not determined to be hydrophytic based on the results of the Dominance Test Worksheet.

SOIL

Sampling Point: SP8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR-3/2	100%	N/A	N/A	N/A	N/A	Silt loam	
6-16"	2.5Y-5/3	100%	N/A	N/A	N/A	N/A	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Soils at this sample location were not determined to be hydric as they did not meet the requirements for a hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP9

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.165158 Long: -77.101562 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: N/A

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet refers to a sample point taken within an upland area within a staghorn sumac stand.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

There were no wetland hydrology indicators present at this sample location during the time of investigation.

VEGETATION – Use scientific names of plants.

Sampling Point: SP9

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. Rhus typhina	35%	YES	UPL
2. Lonicera japonica	10%	YES	FACU
3.			
4.			
5.			
6.			
7.			
	45% = Total Cover		
Herb Stratum (Plot size: 5 Feet)			
1. Securigera varia	30%	YES	UPL
2. Panicum rigidulum	20%	YES	FACW
3. Elymus virginicus	10%	NO	FACW
4. Solidago canadensis	15%	YES	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75% = Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was not determined to be hydrophytic based on the results of the Dominance Test Worksheet.

SOIL

Sampling Point: SP9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3"	10YR-2/2	100%	N/A	N/A	N/A	N/A	See remarks	Sandy clay loam
3-4"	10YR-3/1	100%	N/A	N/A	N/A	N/A	See remarks	Sandy clay loam
4-12"	10YR-2/1	75%	N/A	N/A	N/A	N/A	Sandy loam	
	5YR-3/3	25%	N/A	N/A	N/A	N/A	Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Soils at this sample location were not determined to be hydric as they did not meet the requirements for a hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP10

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 2-4%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.165886 Long: -77.101650 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: N/A

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet refers to a sample point taken within an upland area adjacent to train tracks and down slope of a levee system.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

There were no wetland hydrology indicators present at this sample location during the time of investigation.

VEGETATION – Use scientific names of plants.

Sampling Point: SP10

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	15%	YES	FACU
2. Fraxinus species	15%	YES	N/A
3.			
4.			
5.			
6.			
7.			
	30% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. Rosa multiflora	10%	YES	FACU
2. Rubus species	10%	YES	N/A
3. Lonicera japonica	10%	YES	FACU
4.			
5.			
6.			
7.			
	30% = Total Cover		
Herb Stratum (Plot size: 5 Feet)			
1. Hesperis matronalis	20%	YES	FACU
2. Alliaria petiolata	10%	YES	FACU
3. Verbena urticifolia	10%	YES	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40% = Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)			
1. Parthenocissus quinquefolia	20%	YES	FACU
2.			
3.			
4.			
	20% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 11% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was not determined to be hydrophytic based on the results of the Dominance Test Worksheet.

SOIL

Sampling Point: SP10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16"	2.5Y-4/3	100%	N/A	N/A	N/A	N/A	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Soils at this sample location were not determined to be hydric as they did not meet the requirements for a hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP11

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.164194 Long: -77.100665 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: N/A

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet refers to a sample point taken within an upland area located within a previously disturbed and cleared area, lined with forested vegetation.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

There were no wetland hydrology indicators present at this sample location during the time of investigation.

VEGETATION – Use scientific names of plants.

Sampling Point: SP11

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus tremuloides	10%	YES	FACU
2. Quercus velutina	5%	YES	UPL
3.			
4.			
5.			
6.			
7.			
	15% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. Lonicera japonica	25%	YES	FACU
2. Rubus species	5%	NO	N/A
3.			
4.			
5.			
6.			
7.			
	30% = Total Cover		
Herb Stratum (Plot size: 5 Feet)			
1. Securigera varia	10%	NO	UPL
2. Solidago canadensis	15%	YES	FACU
3. Grass species	20%	YES	N/A
4. Plantago lanceolata	10%	NO	FACU
5. Trifolium repens	10%	NO	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65% = Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was not determined to be hydrophytic based on the results of the Dominance Test Worksheet.

SOIL

Sampling Point: SP11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4"	5Y-2.5/1	100%	N/A	N/A	N/A	N/A	Sand	
4-16"	10YR-6/4	100%	N/A	N/A	N/A	N/A	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Soils at this sample location were not determined to be hydric as they did not meet the requirements for a hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Painted Post Distribution Center City/County: Steuben County Sampling Date: 6/3/2020

Applicant/Owner: Tyoga Container Company, Inc. State: NY Sampling Point: SP12

Investigator(s): Joshua E. Glace, Teah E. Gray Section, Township, Range: Town of Erwin

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR or MLRA): LRR R, MLRA 140 Lat: 42.163748 Long: -77.100005 Datum: NAD83

Soil Map Unit Name: Cut and Fill Land, CF NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: N/A

Remarks: (Explain alternative procedures here or in a separate report.)

This data sheet refers to a sample point taken within a previously disturbed and cleared area lined with forested vegetation.

** The field reconnaissance showed previously disturbed areas within the project boundary. Evidence of fill material was identified within portions of the proposed project area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): N/A
Water Table Present?	Yes _____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

There were no wetland hydrology indicators present at this sample location during the time of investigation.

VEGETATION – Use scientific names of plants.

Sampling Point: SP12

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus tremuloides	20%	YES	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. Lonicera japonica	45%	YES	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	45% = Total Cover		
Herb Stratum (Plot size: 5 Feet)			
1. Securigera varia	45%	YES	UPL
2. Galium mollugo	20%	YES	FACU
3. Solidago canadensis	15%	NO	FACU
4. Grass species	10%	NO	N/A
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90% = Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at this sample location was not determined to be hydrophytic based on the results of the Dominance Test Worksheet.

SOIL

Sampling Point: SP12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR-3/2	100%	N/A	N/A	N/A	N/A	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Soils at this sample location were not determined to be hydric as they did not meet the requirements for a hydric soil indicator as outlined in the Northcentral and Northeast Regional Supplement.

Tyoga Container Company, Inc. – Painted Post Distribution Center

Town of Erwin ■ Steuben County ■ New York
LDG Project No. 7838-015

PHOTO #: 1 DATE: 6/3/2020 DIRECTION: Southwest PHOTO DESCRIPTION: Looking Southwest along Wetland 1 within the lower forested portion of the proposed project area.	

PHOTO #: 2 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast from Sample location 2, along an upland area adjacent to Wetland 1.	

PHOTO #: 3 DATE: 6/3/2020 DIRECTION: Southwest PHOTO DESCRIPTION: Looking Southwest along Wetland 1.	

PHOTO #: 4 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast across the upper portion of Wetland 1.	

PHOTO #: 5 DATE: 6/3/2020 DIRECTION: East PHOTO DESCRIPTION: Looking East at the top of Wetland 1.	

PHOTO #: 6 DATE: 6/3/2020 DIRECTION: Southwest PHOTO DESCRIPTION: Looking Southwest from Sample location 3 within Wetland 1.	

PHOTO #: 7 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast from Sample location 3 within Wetland 1.	

PHOTO #: 8 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking Southeast across an upland area above Wetland 1.	

PHOTO #: 9 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast across an upland area above Wetland 1.	

PHOTO #: 10 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking Southeast into the forested area from the adjacent open field edge.	

PHOTO #: 11 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast from Sample location 4 toward the adjacent open field.	

PHOTO #: 12 DATE: 6/3/2020 DIRECTION: Northwest PHOTO DESCRIPTION: Looking Northwest across the upland area between the open field and adjacent highway.	

PHOTO #: 13 DATE: 6/3/2020 DIRECTION: South PHOTO DESCRIPTION: Looking South across the forested upland area from Sample location 4.	

PHOTO #: 14 DATE: 6/3/2020 DIRECTION: Southwest PHOTO DESCRIPTION: Looking Southwest along the open field and forested edge.	

PHOTO #: 15 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking Southeast at the parking lot adjacent to the open field.	

PHOTO #: 16 DATE: 6/3/2020 DIRECTION: Northwest PHOTO DESCRIPTION: Looking Northwest across the open field toward the adjacent highway.	

PHOTO #: 17 DATE: 6/3/2020 DIRECTION: North PHOTO DESCRIPTION: Looking North from Sample location 5 within the open field.	

PHOTO #: 18 DATE: 6/3/2020 DIRECTION: West PHOTO DESCRIPTION: Looking West toward the highway from Sample location 5 within the open field.	

PHOTO #: 19 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking Southeast along the open field from Sample location 5.	

PHOTO #: 20 DATE: 6/3/2020 DIRECTION: East PHOTO DESCRIPTION: Looking East across the open field from Sample location 5.	

PHOTO #: 21 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking Southeast along the open field edge.	

PHOTO #: 22 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast at the open field edge and fence line.	

PHOTO #: 23 DATE: 6/3/2020 DIRECTION: Northwest PHOTO DESCRIPTION: Looking Northwest along the open field.	

PHOTO #: 24 DATE: 6/3/2020 DIRECTION: South PHOTO DESCRIPTION: Looking South from Sample location 6 within a forested pocket.	

PHOTO #: 25 DATE: 6/3/2020 DIRECTION: Northwest PHOTO DESCRIPTION: Looking Northwest from Sample location 6 within a forested pocket.	

PHOTO #: 26 DATE: 6/3/2020 DIRECTION: North PHOTO DESCRIPTION: Looking North from Sample location 6 within a forested pocket.	

PHOTO #: 27 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast from within a forested pocket, toward an adjacent open field.	

PHOTO #: 28 DATE: 6/3/2020 DIRECTION: Northwest PHOTO DESCRIPTION: Looking Northwest from within a forested pocket toward the proposed project boundary.	

PHOTO #: 29 DATE: 6/3/2020 DIRECTION: West PHOTO DESCRIPTION: Looking West across the proposed project boundary toward the adjacent highway and across the existing fence line.	

PHOTO #: 30 DATE: 6/3/2020 DIRECTION: North PHOTO DESCRIPTION: Looking North along the open field and fence line vegetation.	

PHOTO #: 31 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast across the open field area toward Sample location 7.	

PHOTO #: 32 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking South along the open field edge and forested pocket.	

PHOTO #: 33 DATE: 6/3/2020 DIRECTION: North PHOTO DESCRIPTION: Looking North along the upper field edge toward the levee, from Sample location 8.	

PHOTO #: 34 DATE: 6/3/2020 DIRECTION: East PHOTO DESCRIPTION: Looking East from Sample location 8, across the open field.	

PHOTO #: 35 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking Southeast from Sample location 8, along the field edge and fence line vegetation.	

PHOTO #: 36 DATE: 6/3/2020 DIRECTION: West PHOTO DESCRIPTION: Looking West from Sample location 8, across the fence line vegetation toward the adjacent highway.	

PHOTO #: 37 DATE: 6/3/2020 DIRECTION: Southwest PHOTO DESCRIPTION: Looking Southwest along the levee edge at the end of the proposed project area.	

PHOTO #: 38 DATE: 6/3/2020 DIRECTION: Northwest PHOTO DESCRIPTION: Looking Northwest across the levee at the end of the proposed project area.	

PHOTO #: 39 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast along the levee edge toward the train tracks, at the end of the proposed project area.	

PHOTO #: 40 DATE: 6/3/2020 DIRECTION: Northwest PHOTO DESCRIPTION: Looking Northwest through thick vegetation from Sample location 10.	

PHOTO #: 41 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast at the train tracks from Sample location 10.	

PHOTO #: 42 DATE: 6/3/2020 DIRECTION: South PHOTO DESCRIPTION: Looking South along the existing fence line.	

PHOTO #: 43 DATE: 6/3/2020 DIRECTION: East PHOTO DESCRIPTION: Looking East across the existing fence line.	

PHOTO #: 44 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast along the existing fence line.	

PHOTO #: 45 DATE: 6/3/2020 DIRECTION: West PHOTO DESCRIPTION: Looking West at the dense vegetation above the existing fence line.	

PHOTO #: 46 DATE: 6/3/2020 DIRECTION: Southwest PHOTO DESCRIPTION: Looking Southwest from Sample location 9, in a sumac stand.	

PHOTO #: 47 DATE: 6/3/2020 DIRECTION: Northwest PHOTO DESCRIPTION: Looking Northwest from sample location 9, within a sumac stand.	

PHOTO #: 48 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking Southeast toward the existing fence line from Sample location 9.	

PHOTO #: 49 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking Southeast along an open area with tree lines on either side.	

PHOTO #: 50 DATE: 6/3/2020 DIRECTION: West PHOTO DESCRIPTION: Looking West across a tree line between two open areas.	

PHOTO #: 51 DATE: 6/3/2020 DIRECTION: Northwest PHOTO DESCRIPTION: Looking Northwest at the vegetation above an open area.	

PHOTO #: 52 DATE: 6/3/2020 DIRECTION: East PHOTO DESCRIPTION: Looking East at the tree line vegetation along an open area.	

PHOTO #: 53 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking Southeast at the area below Sample location 11.	

PHOTO #: 54 DATE: 6/3/2020 DIRECTION: Northwest PHOTO DESCRIPTION: Looking Northwest along another strip of open field lined with trees on either side.	

PHOTO #: 55 DATE: 6/3/2020 DIRECTION: West PHOTO DESCRIPTION: Looking West at the tree line between an open field strip and the rest of the project area.	

PHOTO #: 56 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking Southeast along an open field strip.	

PHOTO #: 57 DATE: 6/3/2020 DIRECTION: Southwest PHOTO DESCRIPTION: Looking Southwest from Sample location 12 toward the edge of the proposed project area.	

PHOTO #: 58 DATE: 6/3/2020 DIRECTION: Southeast PHOTO DESCRIPTION: Looking Southeast from Sample location 12 toward the proposed project corner.	

PHOTO #: 59 DATE: 6/3/2020 DIRECTION: Northeast PHOTO DESCRIPTION: Looking Northeast at the vegetation between an open field strip and the proposed project boundary.	

PHOTO #: 60 DATE: 6/3/2020 DIRECTION: Northwest PHOTO DESCRIPTION: Looking Northwest from Sample location 12 at the vegetation along an open field strip.	

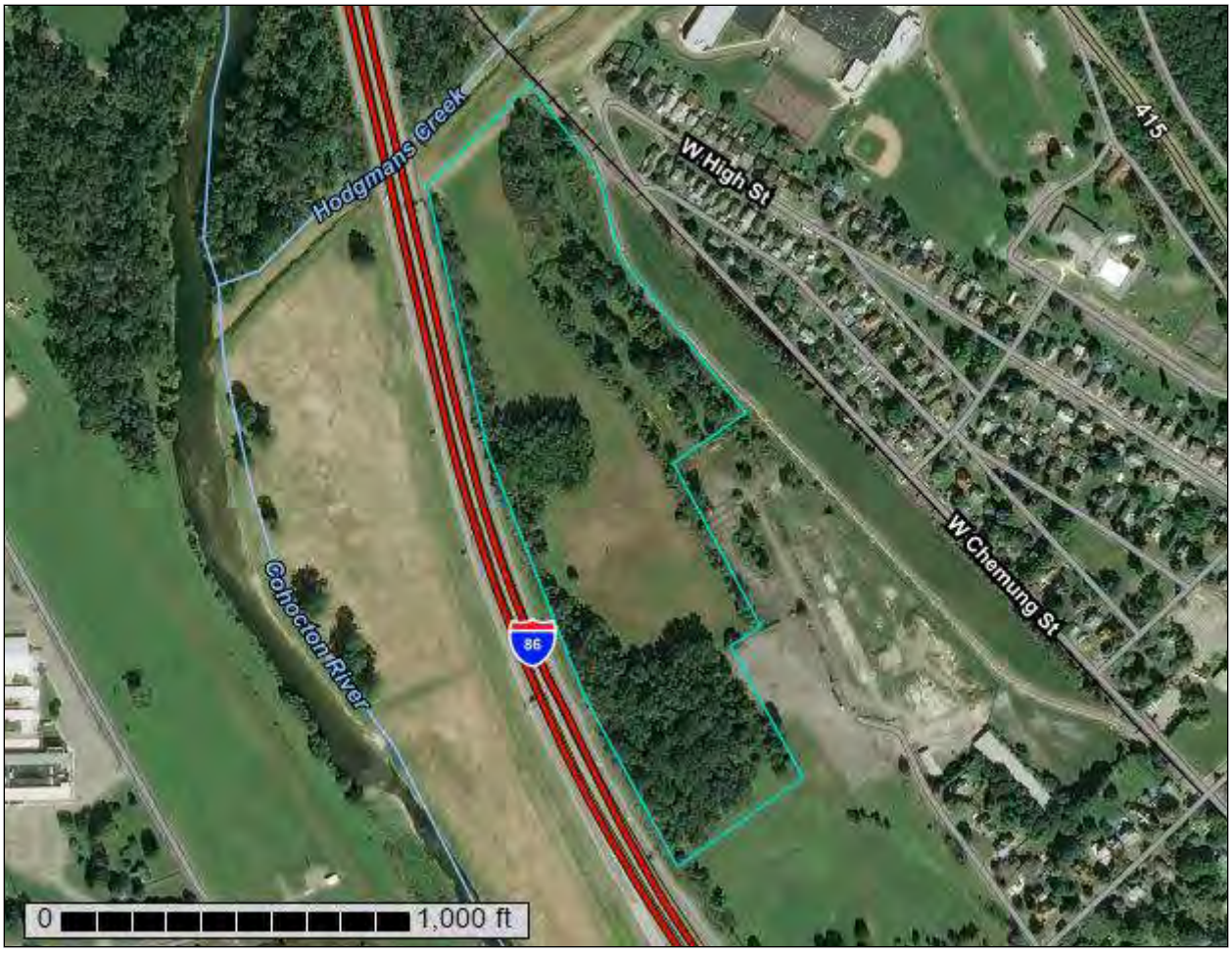
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Steuben County, New York



June 4, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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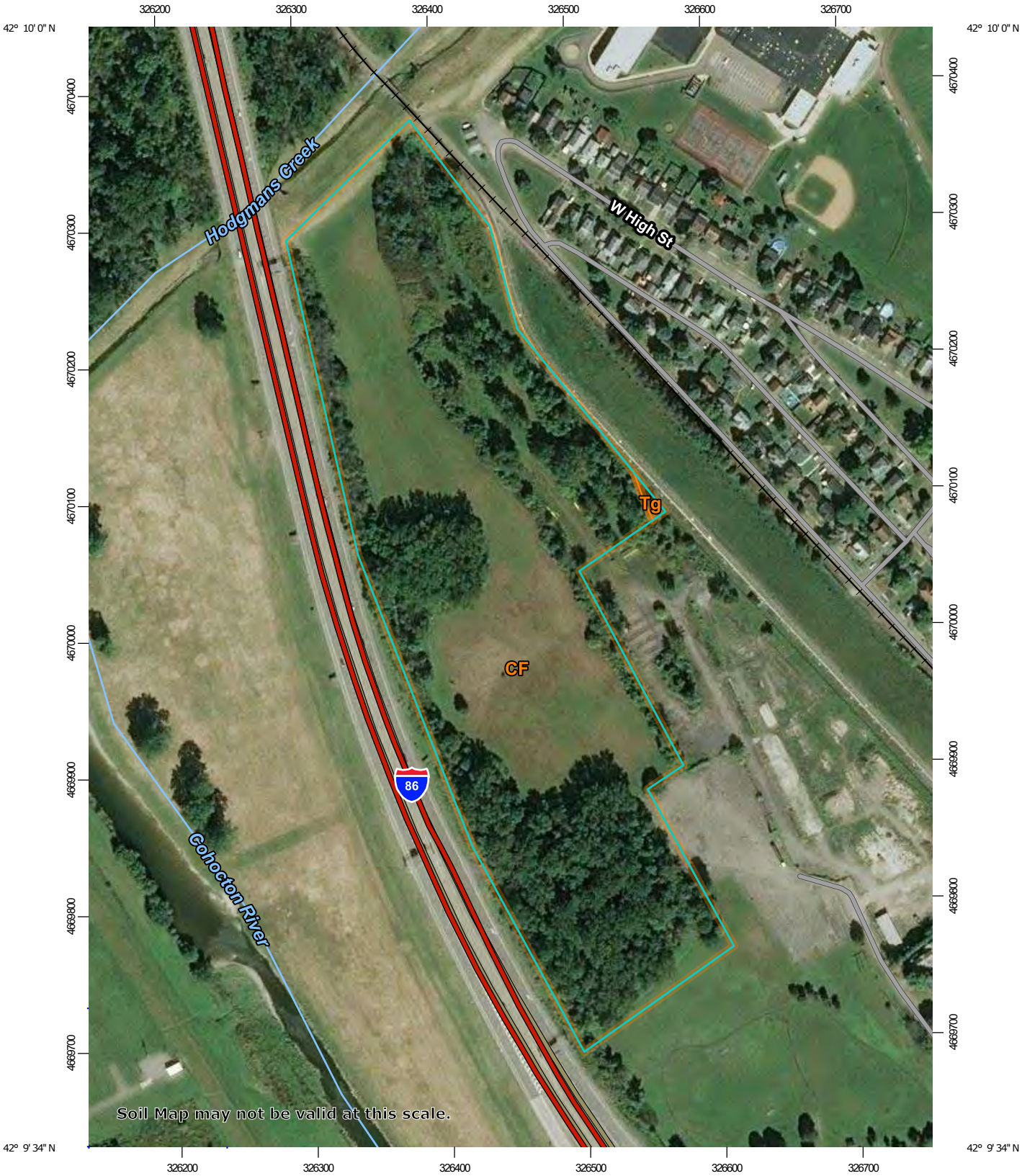
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,990 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Steuben County, New York
Survey Area Data: Version 16, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 21, 2019—Sep 22, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CF	Cut and fill land	25.1	99.8%
Tg	Tioga silt loam	0.1	0.2%
Totals for Area of Interest		**25.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Steuben County, New York

CF—Cut and fill land

Map Unit Setting

National map unit symbol: 9wrk
Mean annual precipitation: 31 to 39 inches
Mean annual air temperature: 43 to 48 degrees F
Frost-free period: 110 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

Cut and fill land and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cut And Fill Land

Typical profile

H1 - 0 to 8 inches: channery silt loam
H2 - 8 to 60 inches: channery silt loam

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Alden

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Lackawanna

Percent of map unit: 5 percent
Hydric soil rating: No

Scio

Percent of map unit: 5 percent
Hydric soil rating: No

Collamer

Percent of map unit: 5 percent

Hydric soil rating: No

Fremont

Percent of map unit: 5 percent
Hydric soil rating: No

Tg—Tioga silt loam

Map Unit Setting

National map unit symbol: 9wtd
Elevation: 600 to 1,800 feet
Mean annual precipitation: 31 to 39 inches
Mean annual air temperature: 43 to 48 degrees F
Frost-free period: 110 to 155 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Tioga and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tioga

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy alluvium

Typical profile

H1 - 0 to 17 inches: silt loam
H2 - 17 to 28 inches: silt loam
H3 - 28 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1

Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Alton
Percent of map unit: 5 percent
Hydric soil rating: No

Middlebury
Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed soils
Percent of map unit: 5 percent
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Map Scale: 1:3,990 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Steuben County, New York
Survey Area Data: Version 16, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 21, 2019—Sep 22, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CF	Cut and fill land	5	25.1	99.8%
Tg	Tioga silt loam	0	0.1	0.2%
Totals for Area of Interest			**25.1**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix G
Public Health and Environment

Department of Environmental Conservation

Division of Hazardous Waste Remediation

Ingersoll-Rand Foundry
Inactive Hazardous Waste Site

Site Number 8-51-012
Village of Painted Post
Steuben County, New York

Record of Decision

March 1994

New York State Department of Environmental Conservation
MARIO M. CUOMO, *Governor* LANGDON MARSH, *Acting Commissioner*

Ingersoll-Rand Foundry - Inactive Hazardous Waste Site
Village of Painted Post, Steuben County, New York
Site No. 8-51-012

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Ingersoll-Rand Foundry inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Ingersoll-Rand Foundry Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Removal action completed earlier at the site has been found adequate; the site no longer poses a significant threat to public health or the environment. Implementing the response action selected in this ROD will insure continued site management required at the site.

Description of Selected Remedy

Based upon the results of the Groundwater Quality Assessment and Focused Feasibility Study (GQA and FFS) for the Ingersoll-Rand Foundry and the criteria identified for evaluation of alternatives, the NYSDEC has selected groundwater monitoring and institutional control as the remedy. The site will also be reclassified. The components of the remedy are as follows:

- Three years (five rounds) of groundwater monitoring for volatile organic compounds to determine if concentrations of these compounds continue to remain below New York State drinking water standard of 5 ppb;

- Institutional Controls: 1) maintain existing site security and fencing and 2) place a deed restriction on that portion of the I-R Foundry within 300 ft. radius of

monitoring well 2B to indicate presence of contaminated soil and to minimize potential for future human exposure. This area has limited subsurface soil contamination with semi-volatile organic compounds; and

- Reclassify the I-R Foundry to a class 4 site. A class 4 site is defined as a site that is properly closed but requires continued management.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective.

As a part of the selected remedy, the site will be reclassified to class 4 in the New York State registry of inactive hazardous waste disposal sites, indicating that the site is properly closed but requires continued management. The results of groundwater monitoring will be evaluated to determine if additional reclassification or delisting the site from the registry is appropriate.

March 30 1991
Date

Ann Hill DeBarbieri
Deputy Commissioner

INACTIVE HAZARDOUS WASTE SITE
ROD - SUMMARY SHEET

Site No.: 8-51-012
Name of the Site: Ingersoll-Rand Foundry Site
Town/County: Village of Painted Post, Steuben County

Prepared by: Region 8 Office
Manmohan D. Mehta, P.E., Project Manager

Description of the problem:

The Ingersoll-Rand (I-R) idled their Painted Post foundry in 1985. An environmental evaluation by I-R in 1986 identified several areas contaminated, primarily with elevated levels of PCBs, in the foundry buildings and in soils immediately outside. The surficial PCB cleanup was completed by the company in 1989 under NYSDEC consent order. Post-removal groundwater quality assessment did not detect PCBs in groundwater; low levels of TCA were detected (up to 2 ppb on-site and 8 ppb off-site). As the Village of Painted Post has also been detecting TCA, generally below 5 ppb, in their water supply well # 4 located approximately 500 feet northeast of the I-R Foundry, I-R was asked to conduct additional quarterly groundwater monitoring. The additional sampling did not indicate the foundry as the source of groundwater contamination. Subsurface soil contamination at one monitoring well - 2B (MW-2B), with elevated levels of polynuclear aromatic hydrocarbons (PAHs), which are semi-volatile organic compounds, was investigated and defined.

Description of the remedy:

The groundwater quality assessment did not indicate I-R Foundry as the source of TCA groundwater contamination. However, since the groundwater at the site and at the Village of Painted Post Village water supply well # 4 continues to detect low levels of TCA, continued limited on-site and off-site groundwater monitoring for an additional 3 years is proposed as a part of the selected remedy. The selected remedy also includes continued maintenance of existing fencing and site security and placing a deed restriction (agreed by I-R) for in-place PAH contaminated soil within a 300 ft. radius of MW-2B to prevent future human exposure. The site will be reclassified to class 4, indicating that the site is properly closed but requires continued management.

Cost:

The estimated present worth of the proposed remedy is $ 65,900. The estimated cost of maintaining site security and preparing sampling and analysis plan is $ 22,000 and the average annual operation and maintenance cost for 3 years is $ 15,850.

Issues:

From 1920s until it closed in 1985, the I-R Foundry produced gray iron castings for their air compressor plant. A cleanup which primarily addressed PCB contamination in the building and the soils was completed at the foundry at an approximate cost of $ 1.3 million under a NYSDEC consent order.

The remaining issue is the detection of low levels of TCA in groundwater, including the Village of Painted Post well # 4, located 500 ft. northeast of I-R Foundry. The TCA levels are generally below the New York State drinking water standard of 5 ppb. The Village of Painted Post has been blending water from its uncontaminated well # 3, located 900 ft. east of well # 4, with well # 4 water; TCA has not been detected in finished water after chlorination and other treatment.

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Appendix

Appendix A: Responsiveness Summary
Appendix B: Administrative Record

RECORD OF DECISION

Ingersoll-Rand Foundry Site
Painted Post, Steuben County, New York
Site # 851012
March 1994

SECTION 1: SITE LOCATION AND DESCRIPTION

The former Ingersoll-Rand (I-R) Foundry site consists of 287,000 sq. ft. of building space on 43 acres of land located on West Water Street in the Village of Painted Post, Steuben County (figure 1). It was in operation from approximately 1920 through December 1985. The Cohocton River is located approximately 1,200 feet south of the property. Land use surrounding the foundry is diverse. The area north of the foundry consists of residential land; open public land lies to the southwest. The remainder of the land surrounding the foundry is used for industrial, commercial and transportation purposes.

After the foundry was idled in December 1985, two main environmental concerns were identified:
1) surficial PCB contamination and 2) possible groundwater contamination. The PCB cleanup was completed in 1989 as an Interim Remedial Measure (IRM) at an approximate cost of $ 1.3 million; a detailed description is given in Section 3.2 below. The impact of foundry operations on groundwater was studied under post-removal investigation which also included investigation for an alleged drum disposal area.

SECTION 2: SITE HISTORY

2.1: Operational and Disposal History:

The foundry produced gray iron castings principally for the I-R compressor plant, also located in Painted Post. The operations consisted of pattern construction, sand mold lines, melt furnaces, casting, shakeout, casting cleaning, and pattern and casting storage (figure 2).

In early 1986, an environmental evaluation and cleanup was performed by I-R as a part of their standard facility closure activity. Evidence of possible petroleum and polychlorinated biphenyl (PCB) contamination of soil and other surfaces inside the building which were a result of oil leakage and spills from transformers and capacitors was identified. In July 1986, I-R reported this to the New York State Department of Environmental Conservation (NYSDEC).

2.2: Remedial History

Under the facility closure activities, the above- and below-ground storage tanks were removed, machinery and equipment were cleaned and areas requiring further cleanup were evaluated. A report detailing this cleanup and identifying areas requiring further cleanup was submitted by the company in February 1987.

A work plan for further soil and building PCB cleanup, an IRM, was approved by the NYSDEC and a consent order was signed by NYSDEC and I-R in December 1987. The consent order also required I-R to perform post-removal investigation.

Under IRM, negotiated standards for PCB cleanup were established at 10 parts per million (ppm) for subsurface soil contamination and 50 microgram per square meter (ug/m^2) for surficial contamination of non-porous materials. The work plan required cleanup in 18 areas; twelve involved PCBs, while the remaining involved oils, grease, and general cleanup.

All work elements of the IRM work plan were successfully implemented in 1989. Documentation consisting of (1) a professional engineer's certification, (2) summary of on-site work activities, field observations, and verification sampling were submitted by I-R. The NYSDEC acknowledged completion of the activities performed under the work plan by letter dated January 11, 1990. During this cleanup, 490 gallons of liquid and 756 tons of solid hazardous waste was removed off-site to Model City, N.Y. and Chicago, Ill. for treatment and/or disposal. Cleanup costs of the IRM, funded by I-R, were approximately $ 1.3 million.

SECTION 3: CURRENT STATUS

Under post-removal investigation, I-R initially proposed a work plan for the groundwater quality assessment (GQA) beneath the foundry property. Since low levels (generally below 5 ppb) of 1,1,1-trichloroethane (TCA) were detected in the Village of Painted Post water supply well # 4, located approximately 500 feet northeast of the foundry, the scope of work was expanded to include off-site areas (figure 3). The revised work plan was designed to help determine the impact of the I-R Foundry operations on the quality of groundwater, in general, and the Village of Painted Post water supply well # 4, in particular. Field work for the GQA started in December 1991.

Based upon a complaint from a private citizen, a site investigation for alleged drum disposal at the site was initiated in May 1992.

3.1 Summary of the GQA

The purpose of the GQA was to define the nature and extent of any contamination resulting from previous activities at the I-R Foundry site.

The reports prepared to describe the GQA field activities and findings in detail for the I-R Foundry are: Interim Stratigraphy Report for Phase I - GQA dated January 1992; Phase II - GQA dated September 1992; Subsurface Investigation Report (alleged buried drum

investigation) dated February 9, 1993; Subsurface Evaluation of MW-2B - Additional GQA Investigation dated August 2, 1993; and Quarterly Monitoring Well Sampling Reports dated August 30, 1993, November 4, 1993, December 13, 1993, and February 1994. A summary of the GQA follows:

The GQA activities consisted of the following:

- *Phase I GQA to determine subsurface conditions and collect data to finalize monitoring well construction; and*
- *Phase II GQA - construction of soil borings and monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions.*

The analytical data obtained from the GQA was compared to NYS Applicable Standards, Criteria, and Guidance - SCGs (table 1) in determining remedial alternatives. Groundwater, drinking water and surface water SCGs identified for the I-R Foundry site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of the NYS Sanitary Code. For the evaluation and interpretation of soil analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals for soil.

In December 1991, field activities for the Phase I of the GQA were performed. The Interim Stratigraphy Report was submitted by I-R in January 1992. Specific monitoring well construction methods appropriate for the site were recommended by this report.

In March and April 1992, Phase II of the GQA was conducted. Thirteen monitoring wells were installed at seven locations (figure 3). Six deep monitoring wells (four on-site and two off-site) were installed to a depth of approximately 80 feet to match the well depth at the contaminated Village of Painted Post well # 4. The regional groundwater flow in the Painted Post area has been north-northwest to south-southeast. However, local groundwater flow direction near the site is influenced by the pumping activity of the Village of Painted Post water supply well # 4. No predominant vertical groundwater gradient was evident at the site.

The groundwater sampling did not detect PCBs, the main contaminant of concern at the foundry under the IRM. However, volatile organic compounds, primarily, TCA were detected in groundwater. The highest TCA level of 8 parts per billion (ppb) was detected in an off-site deep monitoring well-5A (MW-5A); the highest on-site TCA level was 2 ppb detected in deep well MW-4C (table 2). The New York State drinking water standard for TCA is 5 ppb. Trace levels of 1,1-dichloroethane, benzene, ethylbenzene, total xylene, and 1,4-dichlorobenzene were also detected in off-site monitoring wells MW-6 and MW-7. A report on groundwater quality assessment was submitted by I-R in September 1992.

A second round of sampling in March 1993, in general, confirmed these results (table 3).

The two rounds of monitoring well sampling completed for the GQA were considered inadequate to verify if the I-R Foundry was contributing to TCA levels detected in the Village of Painted Post well # 4. On June 30, 1993, I-R agreed to perform three additional rounds of quarterly groundwater sampling to account for seasonal variation. The Village of Painted Post well # 4 would be included in each sampling event.

The results of additional sampling confirmed previous data. The highest level of TCA detected during the GQA was in MW-5A, an off-site well (table 3). In summary, the results of GQA did not indicate the I-R Foundry to be the source of TCA contamination in groundwater. At this point, the site investigation was concluded. As a next step, since the groundwater at the site and at the Village of Painted Post detected low levels of TCA (below 5 ppb), it was decided to continue monitoring groundwater quality further as a part of continued site management. The Village of Painted Post, under the current State regulations, is required to monitor their water supply well # 4 on a quarterly basis.

During well drilling, polynuclear aromatic hydrocarbons (PAHs), which are semi-volatile organic compounds, were detected near well MW-2B. A further subsurface evaluation was conducted in this area (figure 4). Soil samples were collected from within the fill material and from the undisturbed soil at eight locations. Subsequent analysis confirmed that the PAHs in the fill material were stationary and not migrating (table 4). The PAHs in the fill material appear to be petroleum based and are commonly found in creosote, coal tar, and heavy oil-type products. It is believed that treated wood debris disposed of on-site in the fill material and road oiling activities are the cause of the identified PAHs. A subsurface evaluation report of MW 2B dated August 2, 1993 was submitted by I-R.

3.2 Summary of Buried Drum Investigation

In November 1992, following allegations by a private citizen, a sub-surface evaluation was performed. Four trench excavations (approximately 970 linear feet) were advanced to evaluate the fill-natural soil interface of the area in question (figure 5). Each trench was evaluated for stained soil, suspect material, and buried drums. Head space screening was performed at 32 locations within the trenches and 13 soil samples were collected for laboratory analysis. No evidence of drum disposal or presence of solvents were observed in this area (table 5). A subsurface investigation report summarizing field activities and sampling results was submitted by I-R on February 9, 1993.

3.3 Summary of Exposure Pathways:

The focused feasibility study (FFS) report was submitted by I-R on February 1, 1994. The FFS report develops various remedial action alternatives, evaluates these alternatives, and recommends specific

alternative for remedial action at the I-R Foundry site that is protective of human health and the environment. The human and the environmental exposure pathways are discussed below.

3.3.1 Summary of Human Exposure Pathways:

A qualitative health risk assessment was prepared for the I-R Foundry site.

Two human exposure pathways that exist at the I-R Foundry site are: 1) exposure to groundwater; and 2) exposure to on-site soil.

Groundwater exposure: TCA levels identified in monitoring wells located on-site and in the Village of Painted Post well # 4, with one exception, have been below the New York State standard of 5 ppb (tables 2, 3 & 6). The Village of Painted Post, under the current State regulations, is required to monitor their supply well # 4 water quality, quarterly.

Soil exposure: Surficial soil remediation activities were performed at the I-R Foundry site under the NYSDEC consent order and oversight. Also, the foundry is currently fenced, and 24-hour site security is maintained.

Semi-volatile organic compounds detected at a depth of three to six feet below ground surface, in the area of well MW-2B, may pose an elevated level of risk to workers in a scenario where future site use includes invasive activities. Ingersoll-Rand has agreed to place a deed restriction on the site, indicating the presence of in-place contaminated soil at MW-2B location.

3.3.2 Summary of Environmental Exposure Pathways:

No environmental exposure pathways were identified for the I-R Foundry site.
The semi-volatile organic compounds detected in soil near MW 2B are not exposed at surface and are not migrating. Also, the very low levels of TCA in groundwater at the site do not constitute an environmental threat.

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and the I-R entered into a Consent Order on December 4, 1987. The Order obligates the responsible party to implement a removal action to pre-set cleanup levels and a post-removal site investigation.

Order on consent

Date: December 4, 1987
Index #: B8-0183-87-04
Subject: In the matter of Development and Implementation of a Remedial Program including Post-Removal Investigation for an Inactive Hazardous Waste Disposal Site, pursuant to Article 27, Title 13 of the Environmental Conservation Law.

Upon issuance of the Record of Decision, the NYSDEC will approach the PRP to implement the selected remedy.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6NYCRR 375-1.10. These goals are established under the guideline of meeting all standard, criteria, and guidance (SCGs) and protecting human health and the environment.

At a minimum, the remedy selected should eliminate or mitigate all significant threats to public health and to the environment presented by the hazardous waste disposed of at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- *Eliminate the threat to surface waters by eliminating any future contaminated surface run-off from the contaminated soils on site;*
- *Eliminate the potential for direct human or animal contact with the contaminated soils on site;*
- *Mitigate the impacts of contaminated groundwater to the environment;*
- *Prevent, to the extent possible, migration of contaminants; and*
- *Provide for attainment of SCGs for groundwater quality at the limit of the area of concern.*

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the I-R Foundry site were identified, screened and evaluated in a Feasibility Study. This evaluation is presented in a report entitled Focused Feasibility Study - Former Ingersoll Rand Foundry, Painted Post, New York. A summary of the detailed analysis follows.

6.1: Description of Alternatives

The potential remedies are intended to address the contaminated subsurface soils and groundwater at the site.

Alternative 1 - No Action

Under this alternative, no specific actions would be taken to improve the groundwater quality beneath the site. The groundwater beneath the site would be left in its current condition, and any changes would be a direct effect of natural processes, such as biological/chemical/ physical degradation, adsorption, and dispersion. Also, no measures would be taken for the in-place contaminated soils.

No costs are associated with the implementation of this alternative.

Alternative 2 - Limited Action

Under this alternative, a groundwater monitoring program would be implemented to assess variations in the groundwater contaminant concentrations. The monitoring program would consist of sampling six on-site monitoring wells and two off-site monitoring wells for volatile organic compounds using USEPA Method 502.2. This alternative also includes institutional controls: maintaining current site security and fencing and placing a

deed restriction to indicate in-place contaminated soil at MW-2B location.

Present Worth:	*$ 65,900**
Capital Cost (includes sampling & analysis plan - SAP):	*$ 22,000*
Average Annual Operation & Maintenance (O&M):	*$ 15,750*
Time to implement:	*3 years.*

* includes 5 rounds of sampling.

Alternative 3 - Institutional control

Under this alternative, institutional controls would be placed on the facility property for the contaminated soil and groundwater. The groundwater would be left to its current condition. Existing fencing and site security would be maintained to restrict access to the site. Also, a deed restriction would be enacted for in-place contaminated soil at MW 2B location.

Capital Cost:	*$ 14,850*

No other costs are involved.

6.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Focused Feasibility Study.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

Alternative 1 - No Action and Alternative 3 - Institutional Control would only partially meet this criterion because there would be no verification that SCGs were met. Alternative 2 - Limited Action would meet this criterion.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of health and environmental impacts to assess whether each alternative is protective.

Alternative 1 - No Action would not meet this criterion. Alternative 2 - Limited Action and Alternative 3 - Institutional Control would meet this criterion.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and implementation are

evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared with the other alternatives.

All the remedial alternatives would meet this criterion as no threats are posed by the current site usage.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks; 2) the adequacy of the controls intended to limit the risk; and 3) the reliability of these controls.

Alternative 1 - No Action would not meet this criterion as it would not address in-place soil contamination at the site. Alternative 2 - Limited Action and Alternative 3 - institutional control would meet this criterion as it considers deed restriction for the in-place contaminated soil.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

None of the alternatives is required to meet this criterion.

6. Implementability. The technical and administrative feasibility of implementing each alternative is evaluated. Technically, this includes the difficulties associated with the construction, reliability of the technology, and ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personal and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc..

All alternatives would meet this criterion as none pose difficulty in implementation of the remedial action.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision.

The cost data for the remedial alternatives are:

Alternative 1 - No Action

No costs are associated with this alternative.

Alternative 2 - Limited Action

Present Worth:	$ 65,900
Capital Cost:	$ 22,000
Average Annual O&M Cost:	$ 15,750

Alternative 3 - Institutional Control

Capital Cost:	$ 14,850

This final criterion is considered a "modifying criterion" and is taken into account after evaluating those above. It is focused upon after public comments on the Proposed Remedial Action Plan (PRAP) have been received.

8. Community Acceptance - Concerns of the community regarding the GQA report, FFS report, and the Proposed Remedial Action Plan were evaluated. A Responsiveness Summary is attached as appendix A. It describes public comments received and how the Department addressed the concerns raised. If the final remedy selected differed from the proposed remedy, notices to the public would have been issued describing the differences and reasons for the changes.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the GQA and FFS, and the evaluation presented in Section 6, the NYSDEC has selected Alternative 2 - Limited Action as the remedy for this site. This selection is based upon the following:

Alternatives 1 - No action is not protective of human health and the environment. Alternative 2 - Limited Action meets all applicable criteria. Alternative 3 - Institutional Control only partially meets SCGs. Since only Alternative 2 - Limited Action meets both threshold criteria: compliance with SCGs and protection of human health and the environment, it is the preferred alternative.

The estimated present worth cost to implement the remedy is $ 65,900. The estimated capital cost to maintain site security and prepare sampling and analysis plan for the remedy is estimated at $ 22,000 and the estimated average annual operation and maintenance cost is $ 15,750.

The elements of the selected remedy are as follows:

1. Preparation of a sampling and analysis plan to monitor the groundwater quality at the site and immediately off-site for a period of 3 years (five rounds). This plan would outline sampling locations, frequency, and analytical parameters and methodology.

2. Sample locations are: six on-site monitoring wells detecting TCA, and two off-site wells MW 5A&B. The samples will be analyzed for volatile organic compound using USEPA Method 502.2.

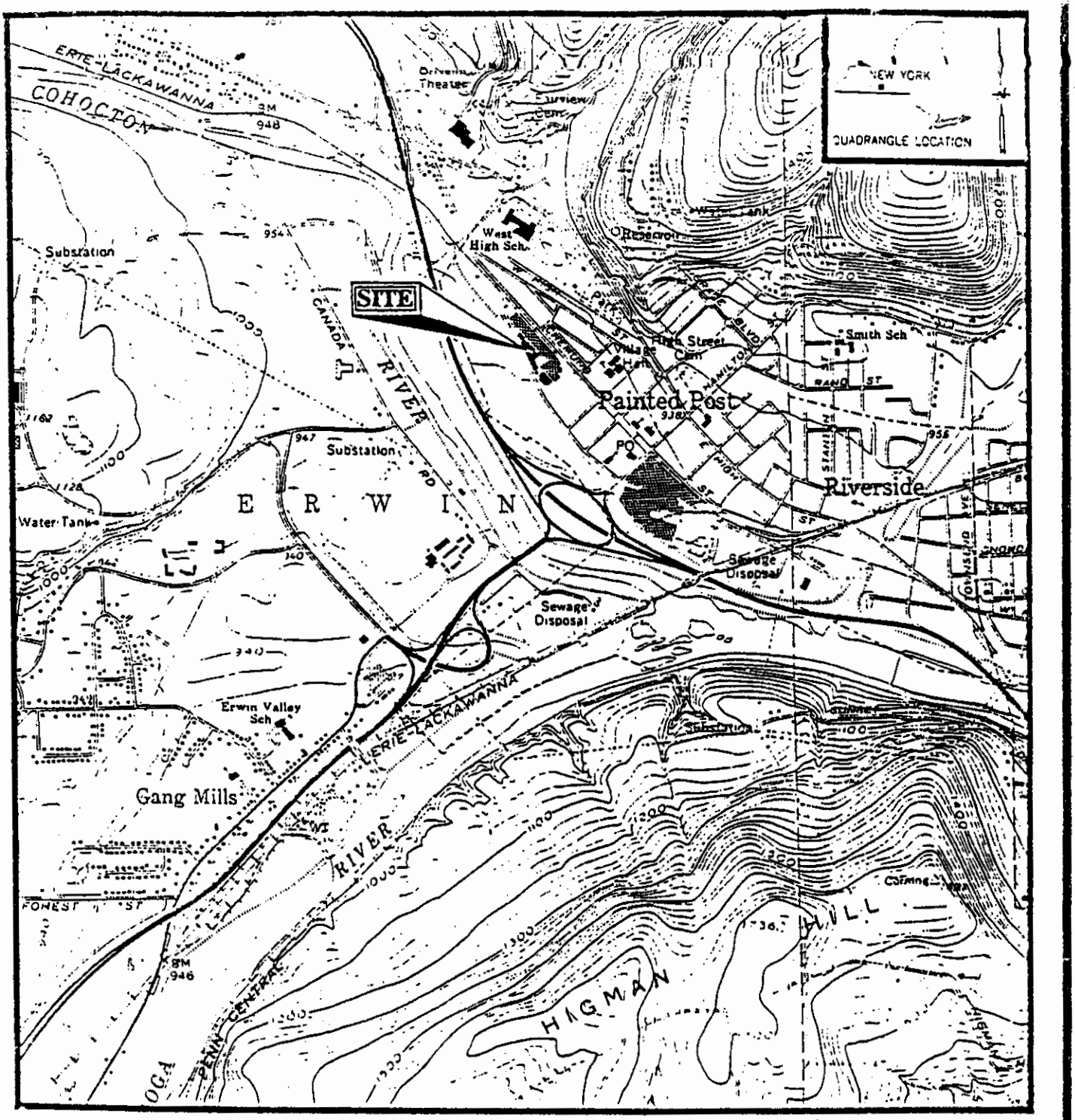
3. Placing a deed restriction on the I-R Foundry property indicating the presence of in-place contaminated soil in the MW 2B area.

The chosen alternative includes reclassifying the site to a class 4 which indicates the site is properly closed but requires continued management. The results of the groundwater monitoring will be evaluated to determine if additional reclassification or delisting the site is appropriate.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

Item	Date Issued
Fact Sheet	3/21/91
Fact Sheet/Public Meeting Announcement	2/25/94
Public Comment Period	2/25-3/28/94
Public Meeting	3/7/94

Comments received from the public and the responses from NYSDEC and NYSDOH are included in the attached Responsiveness Summary (Appendix A). The public comments did not modify the selected remedy.



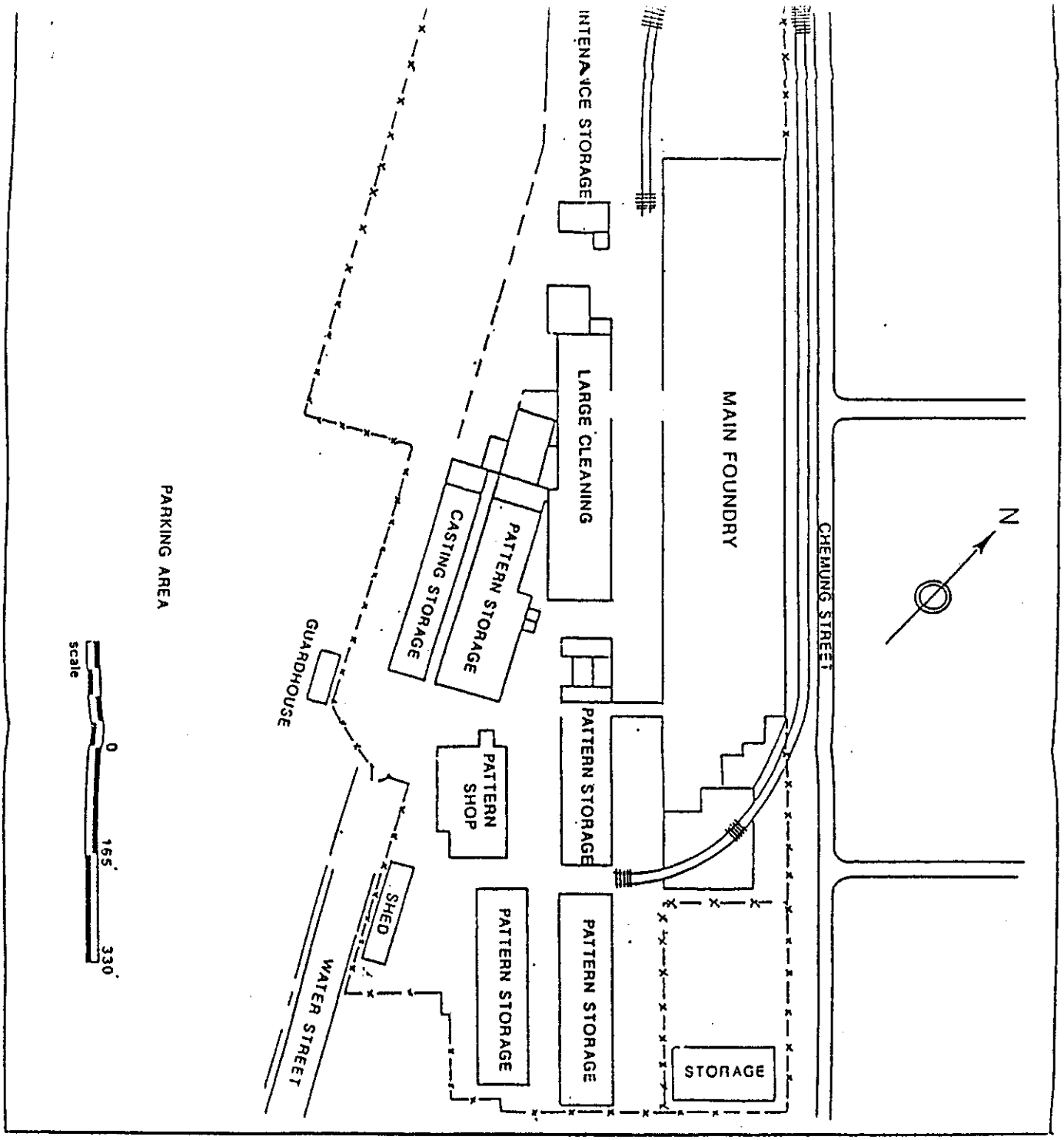
SCALE

1 MILE

0 1000 2000 3000 4000 5000 6000 7000 FEET

SOURCE : U.S.G.S. CORNING QUADRANGLE

INGERSOLL – RAND FOUNDRY PAINTED POST, N.Y.	LAW ENVIRONMENTAL ALBANY , N.Y.	SITE LOCATION PROJECT NO. 52-1532 FIGURE 1



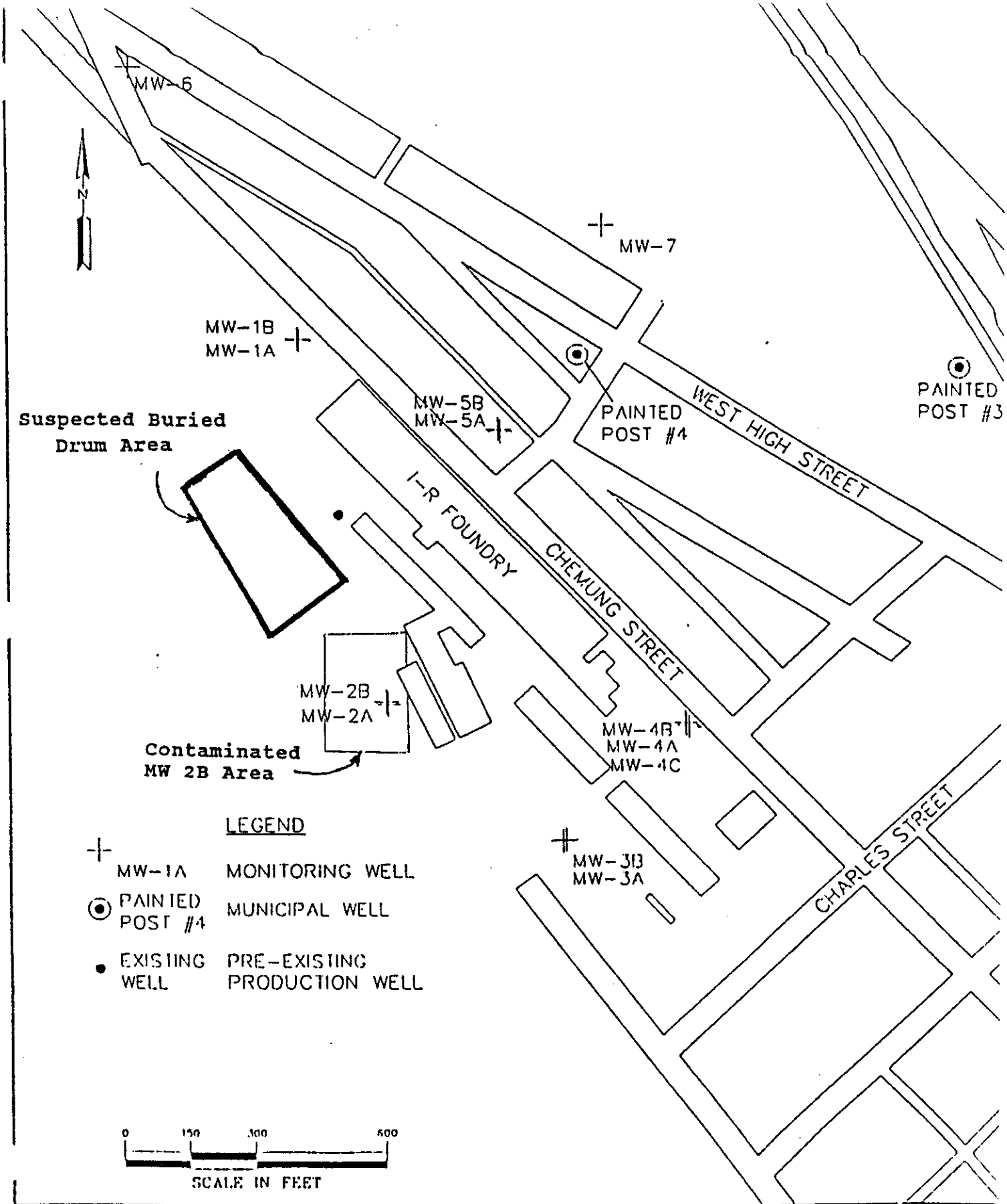
SITE PLAN

Ingersoll-Rand Foundry Location, Painted Post, NY

Source: Ingersoll-Rand Draft/Design

Bay West, Inc
Environmental Services

Figure 2



INGERSOLL - RAND COMPANY

Site Map - Post-removal Investigation

Wenck

Wenck Associates, Inc. 1800 Pioneer Creek Ctr.
Environmental Engineers Maple Plain, MN 55359

AUG 199

Figure

N

SB-7

SB-8

SB-6

MW-2B

SB-1

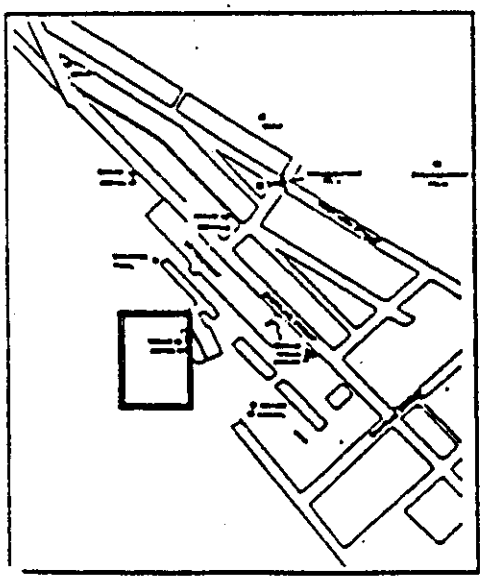
MW-2A

SB-2

SB-5

SB-4

SB-3



FENCE

LEGEND

MW-3A	MONITORING WELL LOCATION
EXISTING WELL	PRE-EXISTING PRODUCTION WELL
PAINTED POST NO. 3	MUNICIPAL WELL
SB-3	PROPOSED TEST BORING LOCATION

NOTE: DRAWING NOT TO SCALE

CAPSULE

ENVIRONMENTAL ENGINEERING INC.

1570 OAKCREST AVENUE, SUITE 216

ST. PAUL, MINNESOTA 55113

(612) 636-3444

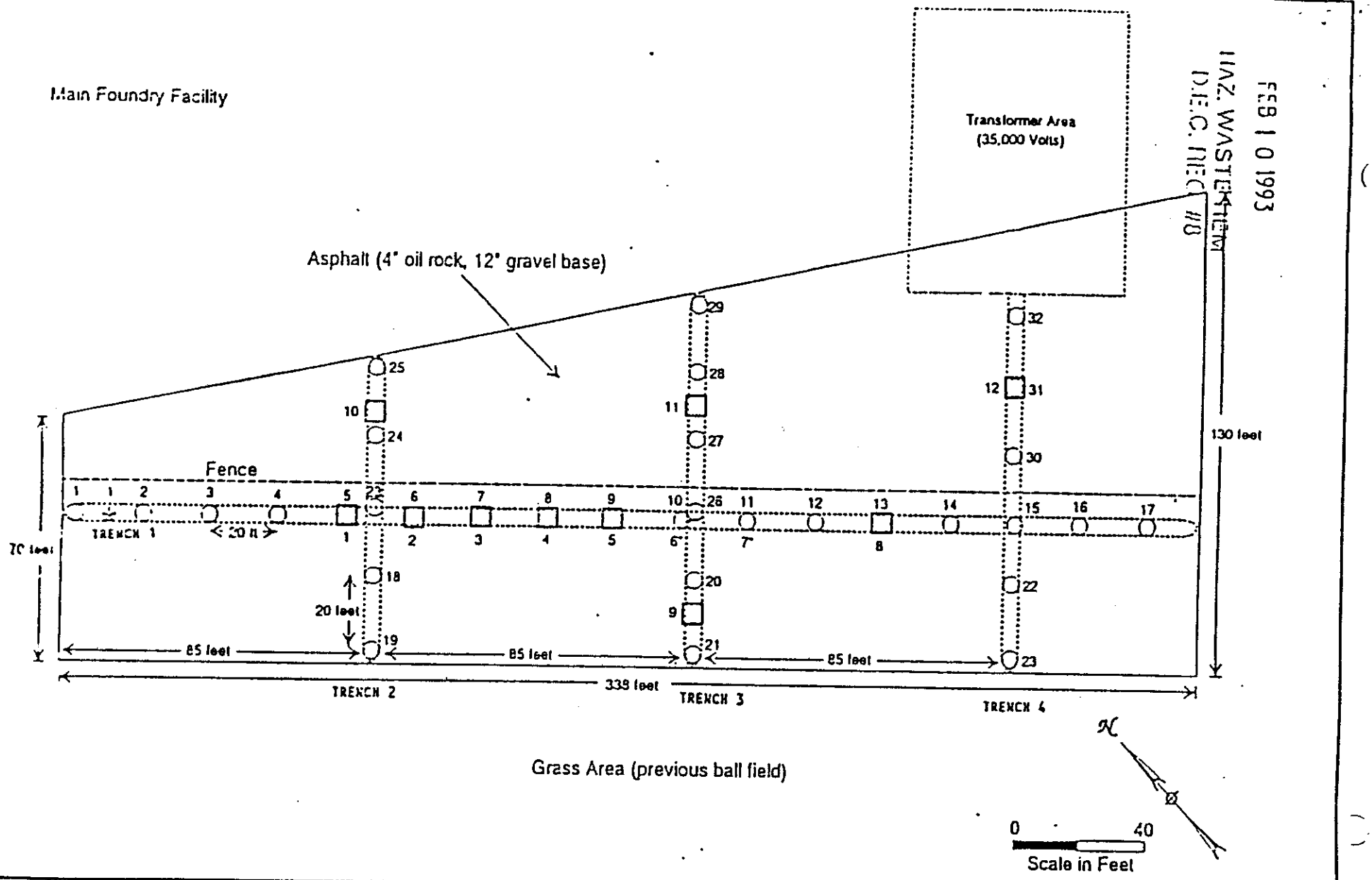
INGERSOLL-RAND COMPANY

PAINTED POST, NEW YORK

PROPOSED TEST BORING LOCATIONS

DATE: MARCH 1993

FIGURE NO.: 4



ENVIRONMENTAL PRODUCTS & SERVICES, INC.		DATE: November 16, 1992	PROJECT NO.: 2AB8961
Soil Sampling (November 9 - 12, 1992) Painted Post Foundry	□ Environmental Samples ○ Headspace Samples ★ Drum Sample ⊂⊃ Trenches 6", 7" Environmental samples collected, but not submitted (based on field screening). PPOST	SCALE: 1" = 40'	FIGURE NO.: 5
		DRAWN BY: DHC (from Capsule)	LOCATION: Painted Post, NY

TABLE - 1

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)
FOR CHEMICALS OF CONCERN
INGERSOLL-RAND FOUNDRY, PAINTED POST, NEW YORK
New York State SCGs

MEDIUM	REQUIREMENTS	CITATION
Groundwater	Groundwater must meet NYS Class GA groundwater standards. These standards are most stringent of: - Standards for Class GA Groundwater - NYS MCLs for Public Water Supplies - MCLs promulgated under the safe Drinking water Act	6 NYCRR Part 703 6 NYCRR Part 703.5 10 NYCRR Subpart 5-1 40 CFR Part 141 10 NYCRR Part 170
Surface water	Surface water at the site must meet NYS Ambient Water Quality Standards for Class D Water bodies.	6 NYCRR Part 701.14
Soil	- Soils at the site must meet NYS Guidance Memorandum for Soil Cleanup Objectives and Cleanup Levels - NYS Cleanup Criteria for Aquatic Sediments	NYSDEC TAGM # 4046 November 16, 1993 NYSDEC Fish & Wildlife Criteria

TABLE 2
Volatile Organics Water Quality Data Summary

Groundwater Quality Assessment

Ingersoll–Rand Foundry
Painted Post, NY

Sample I.D.	Date	1,1–Dichloro–ethane	cis–1,2–Dichloro–ethene	Chloroform	1,1,1–Trichloro–ethane	Trichloro–ethene
NY Standard (A)		5	5	7	5	5
MW – 1A	05–May–92	ND	ND	ND	(0.2)	ND
MW – 1B	08–May–92	ND	ND	ND	1	ND
MW – 2A	12–May–92	ND	ND	ND	ND	ND
MW – 2B	12–May–92	ND	1	ND	ND	(0.7)
MW – 3A	13–May–92	ND	ND	ND	ND	ND
MW – 3B	13–May–92	ND	ND	ND	(0.3)	ND
MW – 4A	13–May–92	ND	ND	ND	ND	ND
MW – 4B	13–May–92	(0.3)	ND	ND	ND	ND
MW – 4C	13–May–92	1	ND	ND	2	1
MW – 5A	12–May–92	1	ND	ND	8	ND
MW – 5B	13–May–92	ND	ND	(0.1)	(0.6)	(0.1)
MW – 6	08–May–92	ND	ND	ND	(0.03)	ND
MW – 7	08–May–92	1	ND	ND	2	ND

NOTES:

Values shown in parentheses are Estimated Values where the result is less than the sample quantitation limit but greater than zero.

(A) – New York State Department of Environmental Quality (1991)

(1) – Applies to the sum of para and ortho isomers

TICs – Tentatively Identified Compounds

* – Denotes that this compound was also detected in the associated blank

ND – Non–detectable

All concentration units are micrograms per liter (ug/l)

TABLE - 3

SUMMARY OF QUARTERLY MONITORING WELL SAMPLE ANALYSIS
TCA RESULTS
All concentration units are micrograms per liter (ug/l)

SAMPLE I.D.	March 1993 First Quarter	July 1993 Second Quarter	October 1993 Third Quarter	December 1993 Fourth Quarter
MW-1A	0.2	0.49	ND	ND
MW-1B	1	1.5	0.41	0.69
MW-2A	ND	ND	ND	ND
MW-2B	ND	0.30	ND	0.34
MW-3A	ND	ND	ND	ND
MW-3B	ND	0.55	ND	0.31
MW-4A	0.7	0.76	0.29	ND
MW-4B	ND	ND	ND	ND
MW-4C	2	1.3	0.50	0.45
MW-5A	7	0.83*	5.4	4.7
MW-5A DUPE	NA	6.5	5.0	NA
MW-5B	0.5	6.3*	0.20	0.27
MW-6	2	ND	ND	ND
MW-7	ND	0.73	1.3	ND
Municipal Well 4	NA	4.1	3.4	ND**
NY STANDARD	5	5	5	5

* An error was made by the laboratory during the second quarter sampling event by transposing sample designator 5A and 5B. Results for MW-5A Dupe are reflective of actual ground water conditions at this location.

NA - Not Applicable, no duplicate or municipal well samples collected during these sampling events.

** - Municipal well #4 sample was collected by the Village of Painted Post, New York, Water Department on November 4, 1993.

TCA - 1,1,1-Trichloroethane

ND - Nondetectable

TABLE 4

TABLE 1
SUBSURFACE EVALUATION OF MW-2B, DATED FEBRUARY 9, 1993
SEMI-VOLATILE COMPOUND RESULTS
FORMER INGERSOLL-RAND FOUNDRY, VILLAGE OF PAINTED POST, NEW YORK

LOCATION	DEPTH	BENZO(A) ANTHRACENE	BENZO(B) FLUORANTHENE	BENZO(K) FLUORANTHENE	BENZO(GHI) PERYLENE	BENZO(A) PYRENE	CHRYSENE	FLUORANTHENE	INDENO (1,2,3-CD) PYRENE	PHENANTHRENE	PYR
SB-1	*	-	-	-	-	-	-	-	-	-	-
SB-2	3'	210	620	220	350	260	400	220	380	220	32
SB-2	8'	270(J)	200(J)	190(J)	79(J)	180(J)	270(J)	390(J)	96(J)	490	4
SB-3	3'	6600	13000	8700	3700	9700	8800	5700	4600	840	81
SB-3	13'	170(J)	390(J)	140(J)	180(J)	230(J)	270(J)	160(J)	200(J)	ND	180
SB-4	3'	1700	5000	2900	1600	1700	3600	2100	1700	590	18
SB-5	*	-	-	-	-	-	-	-	-	-	-
SB-6	3'	7700	18000	14000	2100	10000	14000	8200	2600	2100	89
SB-6	7'	ND	ND	ND	ND	ND	ND	ND	ND	ND	N
SB-7	3'	6600	24000	22000	4700	12000	8500	6200	6300	1700	14
SB-7	11'	ND	ND	ND	ND	350(J)	ND	ND	ND	ND	N
SB-8	3'	3700	14000	9100	2000	5100	5800	3800	2300	2400	86
SB-8	6'	ND	100(J)	ND	43(J)	ND	ND	ND	ND	ND	N

ND - NOT DETECTED
* - UNABLE TO COLLECT SOIL SAMPLES DUE TO SUBSURFACE OBSTRUCTIONS
ALL VALUES ARE REPORTED IN PARTS PER BILLION

(J) - indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

TABLE 5

Volatile Organic Compounds
Subsurface Investigation Report, Dated February 9, 1993
Ingersoll-Rand Company, Painted Post, New York

Sample I.D.	Methylene Chloride	Acetone	Benzene	Ethyl Benzene	Other Compounds
Soil Sample 1	1 (J)	ND	ND	ND	
Soil Sample 2	ND	ND	ND	ND	
Soil Sample 3	ND	ND	ND	ND	
Soil Sample 4	2 (J)	ND	ND	ND	
Soil Sample 5	ND	ND	ND	ND	
Soil Sample 6	ND	ND	ND	ND	
Soil Sample 7	ND	ND	ND	ND	
Soil Sample 8	10 (J)	ND	ND	ND	
Soil Sample 9	ND	ND	ND	ND	
Soil Sample 10	2 (J)	ND	1 (J)	0.8	1 (J) 4-Methyl-2-pentanone 0.05 (J) Styrene 0.9 (J) Toluene
Soil Sample 11	ND	440	ND	ND	32.0 2-Butanone
Soil Sample 12	1 (J)	ND	ND	ND	6.0 (J) 2-Butanone
Drum Sample 1	4 (J)	ND	ND	ND	

J - Indicates and estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

TABLE 6

VILLAGE OF PAINTED POST WELL # 4 SAMPLING RESULTS

DATE OF SAMPLE COLLECTION	TCA LEVEL in Parts per billion (ppb)	NEW YORK STATE DRINKING WATER STANDARD in ppb
3/13/91	Non-detected	5
5/15/91	2	5
7/31/91	3	5
11/27/91	Non-detected	5
3/18/92	Non-detected	5
6/17/92	Non-detected	5
9/2/92	4	5
12/16/92	1	5
3/10/93	4	5
7/29/93	3	5
8/30/93	6	5
11/4/93	Non-detected	5

TCA = 1,1,1-Trichloroethane

Appendix - A
Responsiveness Summary

RESPONSIVENESS SUMMARY

Ingersoll-Rand Foundry Site
Painted Post, Steuben county, New York
Site ID # 851012

The following are responses from the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH), to the questions and comments made at the March 7, 1994 public meeting which presented the proposed remedial action plan for the Ingersoll-Rand (I-R) Foundry site. Some of the questions are grouped together or divided to formulate an appropriate response and to avoid repetition; a dash at the beginning indicates a grouped or divided question.

This responsiveness summary forms a part of the Record of Decision issued by the NYSDEC for the site.

Q. How large is the suspected drum area?

A. The suspected drum area is south of the main former foundry building in the northwest corner of the facility property. Pursuant to a NYSDEC approved work plan, I-R investigated an area 338 feet long and varying in width between 70 and 130 feet. The total area was 33,800 square feet. This investigation was done through the use of four trenches; totalling 980 linear feet. All trenches were excavated from the surface through all fill material to natural sediment. Soil samples were screened using an HNu photoionization meter and visual observation. Select samples were collected and analyzed at a laboratory. No drums were identified during the trenching operation, and no contamination was identified.

Q. Did I understand you correctly that you concluded that Ingersoll-Rand was not the cause of the groundwater contamination?

A. The results obtained from sampling thirteen monitoring wells (nine on-site and four off-site) five times in different seasons did not indicate the I-R Foundry to be the source of TCA in the groundwater. It is important to understand, however, that the levels identified on-site and in the Village of Painted Post municipal well #4 (with the exception of one sampling event) were below the New York State (NYS) drinking water standard of 5 parts per billion (ppb). The only monitoring well that consistently exceeded 5 ppb was MW-5A located off-site, northeast of the foundry.

Q. In monitoring of the groundwater, you recommend semi-annual monitoring, yet when you conducted the study, it was monitored four times a year; would it be a prudent measure to continue to make sure that the groundwater is safe?

Are you done after three years?

A. The Village of Painted Post water supply well #4 has been monitored on a quarterly basis for a period of three years with very little fluctuation in the concentration of 1,1,1-trichloroethane (TCA). Similarly, the results of five sampling events for 13 monitoring wells have been fairly consistent. Based upon the fact that the levels have not changed significantly, it is our belief that semi-annual monitoring for the first two years and annual monitoring the third year for a total of five events is sufficient to detect anomalies. After three years, the monitoring results will be re-evaluated to determine if further monitoring is needed.

The Village of Painted Post, under current State regulations, is required to monitor their water supply well # 4, on a quarterly basis.

Q. The Village of Painted Post public water supply Well #4 is fluctuating. It may show more contamination.

A. Compared with other sites managed by NYSDEC, the data from municipal well #4 and the I-R monitoring network is remarkably consistent. However, as a precautionary measure, the Village of Painted Post will continue to monitor its water supply well quarterly.

Q. Most recently in 1993, the highest level for TCA was 6 ppb; it is still over NYS drinking water standards.

A. The most recent result of November 1993 indicates non-detect for TCA. Only once over the past 30 months, the contaminant level in municipal well #4 has exceeded the NYS drinking water standard of 5 ppb.

Q. Why are the depths of the deep wells at Ingersoll-Rand not the same as the municipality (village wells)?

A. The main objective of installing the deep wells was to determine if the foundry is the source of TCA found in the Village of Painted Post water supply well # 4. The depths of these wells were, therefore, kept approximately in the same range as that of the Village of Painted Post water supply well # 4. The Village of Painted Post well # 4 is approximately 79' deep; the deep monitoring wells are screened at a depth of 80'.

Q. Was NYSDEC aware that the general area northwest of the foundry was used as a disposal area in the 1920s - 1930s (MW-5A and MW-5B area)? Various sands, including core sand and petroleum distillates, were held there, not deep, but in shallow layers. Near the area listed as a suspected drum burial site and at the MW-1A and MW-1B location, patterns were stored. Oak and mahogany were exposed to distillates. They were weather dried, stored, and burned up. Patterns were in the field. This has been ongoing since its inception.

A. Initially, polychlorinated biphenyles (PCBs) were the main concern at the foundry; however, to account for other unknown past disposal activities, such as that you described, the soil and the groundwater were tested for a long list of chemicals. The only contaminant consistently detected was TCA at low levels in groundwater.

Q. Many people in the neighborhood, particularly women, have died from cancer. The number of cancer surgeries that people in the area have had over the past 15 years is high. Other illness have occurred as well. Some of the men from the neighborhood worked at the foundry, but none of the women with health problems worked at plants. One woman with medical problems was asked by her physician if she had been around any hazardous waste. Concern was expressed for neighborhood children's health as well as that of West High School students.

The school was built on a filled-up swamp; groundwater level is five feet below the surface.

A. A cancer fact sheet, developed by the NYSDOH Cancer Surveillance Program, was made available at the meeting. The fact sheet provided general information regarding cancer. Several residents were interested in discussing specific medical concerns with NYSDOH medical staff. NYSDOH medical staff will be contacting those residents.

Cancer develops in people of all ages but most often in the middle-aged and the elderly. Researchers do not fully understand why some people develop cancer while others do not. Most cancer cases in the United States are believed to be associated in some way with our personal habits, our life-style or our physical surroundings.

Exposure from the workplace is carefully investigated, although they are associated with only a small percentage of concerns. The neighborhood men who worked at the foundry may have had occupational exposures to chemicals used at the plant which increased their or their risk for developing health problems. In addition, the men may have carried

chemicals home with them on their clothing and may have exposed their families to these chemicals, thus potentially increasing the risk for the development of health problems in their families. If residents are concerned about occupational exposures, NYSDOH medical staff are available to discuss individual cases.

It is not likely that the neighborhood children and high school students were exposed to contaminants at the foundry. Site access to the foundry has been restricted by fencing and 24-hour security. Surface contamination, consisting of PCBs and oil and grease, was removed from the on-site soils and buildings at the I-R Foundry in 1988.

Q. Groundwater at the site was tested and PCBs were found. There's something wrong with the groundwater and the drinking water.

A. Groundwater samples that were collected at the site have shown the presence of low levels of volatile organic compounds, including TCA. The levels of these volatile organic compounds have not exceeded groundwater standards. PCBs were never found in groundwater samples collected from the site. PCBs were found in samples collected from on-site soils and other building surfaces. The PCB contamination was removed from the soils and building surfaces with NYSDEC oversight as a part of the site clean-up that occurred in 1988.

The Village of Painted Post's municipal water supply well # 4 has been sampled on a quarterly basis since 1989. Samples collected from this municipal well have shown the presence of low levels of TCA. The levels of that compound in the Village of Painted Post water supply well have remained below the drinking water standard of 5 ppb, with one exception. The sample taken in August 1993 had a TCA concentration of 6 ppb. A chemical fact sheet that discussed possible health effects from exposure to TCA was made available at the meeting. The compound has not been identified as a human carcinogen.

Q. The fact sheet says 8 ppb, not 6 ppb.

A. The 8 ppb concentration was detected at monitoring well MW-5A located off-site, whereas the 6 ppb concentration was detected at the Village of Painted Post water supply well #4.

Q. There is no evidence that PCBs came from the plant. What about methyl chloroform? Didn't that come from the foundry? Was that solvent used at the plant? Do we know if TCA was

used in normal operations or you're not sure if TCA was used by Ingersoll-Rand?

A. PCB contamination was removed from the soils and building surfaces at the foundry in 1988. There is no evidence that the PCBs have migrated off of the facility grounds. Secondly, methyl chloroform (or TCA as it is more commonly called) is not a material that was used at the foundry. TCA is a typical degreasing solvent and is used more commonly where machining and fabrication operations occur. TCA is used to remove grease and oils from metal surfaces. These types of operations did not occur at the foundry. In addition, a records search of material safety data sheets and inventory records did not reveal that TCA was used at the foundry.

Q. What triggers a health study for an area like this? What methods do you use to conduct the study?

A. The need for a health study can be determined in different ways. If NYS Department of Health staff working on a particular site feel that a study is warranted, they can request a cancer incidence study. A cancer incidence study can also be requested by citizens.

Citizens can write a letter to the NYS Department of Health indicating the area of concern to them. NYSDOH will then develop a map outlining the area of concern and any additional area that must be included to make the study large enough to be statistically valid. The map and a letter will then be sent to the requesting citizen to ensure that the area they are concerned about was included. The cancer incidence study can then be performed.

A cancer incidence study uses information from the New York State Cancer Registry. Hospitals are required to report to the Registry any cancerous tumor diagnosed in New York State. The Registry includes the address of each patient at the time of their diagnosis. Information on the population of the study area is obtained from census data. The expected number of newly-diagnosed cancer cases, by sex and location of cancer in the body, is calculated based on the age and sex distribution of persons in the study area. The actual number of newly diagnosed cancer cases, by sex and location of cancer in the body, is counted from the New York State Registry records. It is then determined if a significant increase of cancers has occurred in the study area.

Q. If someone has a cancerous tumor removed and another tumor appears, will this appear on the cancer registry?

A. If a patient has a cancerous tumor removed from one site in the body, such as breast, and a new cancerous tumor appears at a different site, such as the lung, the new cancer is recorded on the registry. Non-cancerous tumors are not recorded on the Registry.

Q. I have a few questions on the water as it moves under ground. The groundwater is probably moving toward the river. Why not put in test wells between the foundry and the Cohocton River? Were the wells properly placed? I had a geologist look at this.

A. Based upon the water level measurements that have been collected for the 13 wells installed by I-R, the groundwater flow direction is generally northwest to southeast, the same as the regional groundwater flow direction. In other words, groundwater flow is in a direction that is parallel to Chemung Street and is not going towards the Cohocton River. This data indicate it is not necessary to have any wells between the foundry and the river itself. If the geologist you refer to has any questions , please feel free to contact the NYSDEC - Avon Division of Hazardous Waste Remediation hydrogeologist.

Q. Isn't it unusual that the groundwater flows in that direction?

A. The redirection of the Cohocton River from its original river basin area may account for the change in the flow direction. In addition, the pumping activity of the municipal wells also influences the flow direction. Based upon the information that is available, groundwater flow direction is generally northwest to southeast parallel to Chemung Street.

Q. If I-R did not cause contamination, what did? Could the flood of 1972 have carried some of it over to monitoring wells 5A and 5B?

A. Based upon the information that has been collected from the wells that have been installed, it does not indicate that the I-R Foundry is the source of contamination. A source of the contamination has not been identified.

Although, the flood of 1972 may have dispersed some materials in locations that would not normally have been impacted, the fact remains that MW-5A and MW-5B are groundwater samples, and groundwater is located at approximately 13 feet below surface level. Based upon the lack of contamination in soil samples collected during the installation of wells MW-5A and MW-5B, it would appear that the contamination that has been identified in the ground

water is not the result of the deposition of TCA in this area as a result of the flood. If TCA had been deposited in the area surrounding MW-5A and MW-5B and was in fact impacting the groundwater, there would be evidence of the TCA in the overburden soils.

Q. Why weren't people told? We were not told a thing in 1985 and 1986 before it closed down. We found out in 1991/92 when the neighbors had a well put in their yard.

A. In 1985 and 1986, NYSDEC did not have as aggressive citizen participation program as it is now. The first NYSDEC guideline regarding this program was published in August 1988; it was included in Title 6 of New York Compilation of Rules and Regulation (6 NYCRR) part 375 - Inactive Hazardous Waste Disposal Site Remedial Program - in May 1992. A fact sheet giving update on site clean-up and groundwater investigation was distributed in March 1991. The monitoring well # 5 in your neighbor's back yard was installed in April 1992.

Q. MW-7 was in the middle of Craig Park. That was a swamp that was filled in.

A. MW-7 was installed in an effort to get a sidegradient sample to the Village of Painted Post water supply well #4. This well has identified low level TCA contamination in the groundwater. During the installation of MW-7, no contamination was detected in soil.

Q. Another concern relating to the time prior to the flood of 1972, there were two cupolas indicated north of the foundry. Was any sampling done in and around this area? In 1975, they tore down the two cupolas, one 100-ton and the other 90-ton because of OSHA, and put in three 20-ton electric furnaces in the same area.

A. The cleanup that was conducted occurred on either side of the electric melt furnaces. PCBs and oil were detected in these areas.

Q. I would like the data available from the area near the cupolas. Is Varsol, a petroleum distillate, a trade name. It comes in 55-gallon drums. Is that what you are talking about or is that a separate compound?

A. TCA is a chlorinated organic compound whereas Varsol is a petroleum distillate material. These materials represent two distinctly different types of compounds. Sampling data from the furnace area can be found in the document repository at the Corning Library on Denison Parkway. The title of the document is Final Analytical Review at the

Ingersoll-Rand Foundry Site, dated November 1, 1989.

Q. Was something like Varsol also tested for?

A. The analyses that were conducted for the site included volatiles, semi-volatiles, PCBs, grease and oils, and metals. As a result of the volatile and semi-volatile organic testing that was done, Varsol or Varsol-type materials would have been identified if present.

Q. The entire foundry had a wooden floor with creosote. I-R scooped the sand out and put it out in the field in the Water Street Extension area, right behind Rambler's Restaurant, across from Burger King.

A. The only creosote related semi-volatile organic compounds identified were in soil at the MW-2B location; these were found to be stationary and not migrating. There has been no indication of creosote contamination in the groundwater. The only contaminant identified in groundwater was TCA. TCA is not a compound that is associated with foundry sands or creosote block.

Q. TCA will dissipate into the ground and therefore is different from PCBs which will stay put. It's a slight amount of what was there 30 - 40 years ago. It could have been 10 to 100 times that amount. The TCA will leach into the ground and move on. Has nature taken its course?

A. The NYSDEC does not have data from 30 - 40 years ago which would provide information, along with the recent data, to show trends, migrating pathways, etc. Without this information, we can not determine what nature has done over time. However, you are right that TCA will move more readily than PCBs in soil.

Q. When the Village well sample showed TCA above the standard, didn't the municipality have to put a stripping tower or some kind of treatment system onto the well?

A. Treatment of a public water supply for contamination with volatile organic compounds (VOCs) usually is not required for one high sample result. First, the supply must have a maximum contaminant level (MCL) violation. In case of TCA, the MCL is 5 micrograms per liter (μg/l), which is 5 ppb. In order to get an MCL violation, this level must be exceeded on the average of the original and any check samples the water supplier takes. For example, if a quarterly sample has a level of 6 μg/l, the Village must take at least two check samples. If both check samples contain less than 5 μg/l of the contaminant, the average of the samples will be less than 6 μg/l. Therefore, no MCL

violation has taken place. The samples from the Village well # 4 have consistently averaged well below 5 µg/l. Therefore, there has never been an MCL violation.

Another factor considered in determining if treatment is required is the level of chemical in the distribution system. In Painted Post's case, water from well # 4 with low levels of TCA is blended with water from well # 3, which is not contaminated. TCA has not been detected in the finished water after chlorination and other treatment. There would not be any point in installing a special treatment system when the chemical is not detected in the water supply.

As you may know, the City of Corning has a tower behind Wegmans that is used to treat Corning's water. However, the levels of contamination found in the City of Corning's well were 10 to 100 times higher than any level found in Painted Post wells.

Additionally, current laboratory tests cannot be relied upon to always give results that are accurate to the nearest 1 µg/l. At concentrations as low as 5 and 6 µg/l, there is no statistical difference in the numbers that are reported.

Q. NYSDOH uses ppb; water pollution control uses ppt. Why is it that water pollution people use much more stringent guidelines?

A. Water pollution control deals with many compounds and contaminants and the corresponding levels for release vary from ppb, ppm, mg/l. The NYSDEC Division of Water does have some water quality standards in the ppt range but detection at these levels is not reliable because the technology has not advanced to that point. Analytical results at the ppt level are not reproducible, reliable and are often theoretical or extrapolated values.

Q. Representatives are here from Ingersoll-Rand, NYSDEC, NYSDOH, yet no one is here from the Village of Painted Post. Three of them (trustees) work at Ingersoll-Rand and I will let them know about their non-concern for residents.

A. Representatives from the Village of Painted Post were informed of the meeting by fact sheet distributed on February 28, 1994, just as you were. The NYSDEC and the NYSDOH will continue to work with the Village of Painted Post for issues related to public water supply.

Q. Will the Village of Painted Post wells continue to be monitored quarterly?

A. The Village of Painted Post will continue to monitor municipal well #4 on a quarterly basis.

Q. Could you please include standards or New York State limits for Table 4 of the proposed remedial action plan?

A. The levels that have been identified in Table 4 are for semi-volatile compounds called polynuclear aromatic hydrocarbons (PAHs). There are no regulatory limits for these compounds. The guidance values being used at other similar sites are: for non-carcinogenic total PAHs in soil - 10,000 µg/kg (ppb) and for carcinogenic total PAHs in soil - 5,000 µg/kg. The area in question is a localized area around wells MB-2A and MB-2B and at 3 - 12 ft. depth. The Concentrations that were found may pose an elevated level of risk to human health if exposure to these compounds should occur. A deed restriction, indicating the presence of this contamination in soil, will be placed for MW-2B area, as a part of the selected remedy.

Q. Since contaminated soil was left at the site, and monitoring wells 5A and 5B have shown contamination, how safe is it for homeowners to dig in their yards? Can the contamination move through the air? Since how long that soil at MW-2B has been contaminated?

A. The contaminated soil found in the MW-2B area of the site is a localized area around monitoring wells MW-2A and MW-2B located within the foundry. The contaminants are at a depth of 3 to 12 feet below ground surface and are stationary and not migrating through the soil or the groundwater. As they are semi-volatile materials and are found below surface level, the potential for their release to the air is minimal. A deed restriction will be placed on the site to indicate presence of contamination in this one specific area; this should minimize potential for future human exposure, if excavation is to occur. This soil contamination may have occurred many years ago.

When installing wells 5A and 5B, located on a neighbor's property, no soil contamination was detected. The low levels of TCA found in the groundwater is not likely to migrate to the surface or into the air. It is important to note that there is no human exposure to the groundwater at this location.

Q. With respect to monitoring wells 5A and 5B, how far down do these wells go? What, if anything, can be done to lower the contamination at 5A and 5B?

How safe is the area near monitoring wells 5A and 5B? Years ago it was not as safe.

A. Monitoring wells 5A and 5B represent a deep and a shallow well. Total depths for these wells are 79.5 feet and 26 feet, respectively. Based upon the contamination levels that have been identified (up to 8 ppb), and absence of human exposure to the groundwater at this location, remedial activity is not warranted for the groundwater. Also, it is not likely that the contaminants found at these depths and at these concentrations will migrate to the surface.

Q. In the empty drum storage area, parallel to Chemung Street, did you notice a pattern in the quarterly monitoring results, especially in the summertime? Is there a correlation between the decrease in the water table elevation (which is likely during summer months) and a rise in contaminant levels? Why was there no well at 120 feet?

A. There does not appear to be any significant change in contaminant levels as a result of seasonal groundwater fluctuations. Any variability of contaminant levels observed in these wells is statistically insignificant.

Monitoring wells 120 feet deep can be drilled, however, in this case, it was not necessary to go deeper than 80 feet which is the depth of Village of Painted Post water supply well # 4.

Q. The preferred remedy includes maintaining an existing guard 24 hours a day. He is strictly a fire watcher. He can't keep people off the I-R Foundry property. It is not fenced in on the Chemung Street side of the foundry, vents are open, and there are open vents on roof. I have seen kids play in there.

A. Twenty-four-hour site security will continue to be maintained, as necessary, and will be used to restrict unauthorized access to the site. Maintenance of a fence around monitoring well 2B limiting access is also a part of the remedy.

Q. What is the definition of a class 4 site? Can it go up for public sale?

A. Classification code 4, as defined in the New York State Registry of Inactive Hazardous Waste Disposal Sites, means that the site is properly closed but requires continued management.

Yes, the site can go up for public sale.

Q. As a Class 4 the property can be sold; can it be sold for residential? Will there be any restrictions, only businesses? If it is sold, is there some way to make sure

the new owners know it was contaminated and it was cleaned up? Can it be homes; a development?

A. As a class 4, the site can be sold for any purpose. There will be a deed restriction placed on a portion of the site near monitoring well 2B. Documents regarding the completed cleanup are available at the Corning library and at the Region 8 office of the NYSDEC. Moreover, it is our experience that the buyer(s) of such an industrial site are extremely cautious regarding the environmental liability issues. Zoning requirements are at the discretion of the local municipality.

Q. Is there a timeframe (in reference to the proposed building demolition)? Will they keep the grass cut? There are rattlesnakes in there.

A. I-R, in their March 7, 1994 letter to NYSDEC, have indicated that the proposed building demolition will take place in June 1994. Groundskeeping work be at the discretion of I-R.

Q. Is any part of the facility being used for storage? I see trucks going by every day.

A. Yes, the facility is being used for pattern storage.

Q. There's a liability involved in purchasing a past or current inactive hazardous waste site. Will businesses be held liable for "X" number of years in the future?

A. Businesses responsible for causing contamination can be held liable for any number of years in the future. A "Responsible Party" by definition means any or all of the following: (1) the current owner and the current operator of the site or any portion thereof; (2) the owner, and operator, of the site or any portion thereof at the time any hazardous waste disposal occurred; (3) any person who generated any hazardous waste that was disposed of at the site; (4) any person who transported any hazardous waste to the site, provided that such site was selected by that person; (5) any person who disposed of any hazardous waste at the site; (6) any person who, by contract, agreement, or otherwise arranged for the transportation of any hazardous waste to the site or the disposal of any hazardous waste at the site; (7) any other person determined to be responsible according to applicable principles of statutory or common law liability.

Q. I have heard or read in newspapers, radio, and TV that Ingersoll-Rand has been the subject of environmental monitoring. There are 37 (discharge) points into the Cohocton and Chemung Rivers for (monitoring) contamination.

Are any of these monitoring points focused between the foundry and the Cohocton River? Over the past five years, Ingersoll-Rand has been cited for pollution. Was this from the plant itself?

I know I-R has a spill team when they lose coolants. At what frequency (daily, weekly, monthly, quarterly) they are being monitored? . The river use to be right next to the main plant and was moved over 400 yards.

A. The Ingersoll-Rand Foundry site, which is the subject of this investigation, was idled in December 1985. The NYSDEC knows of no discharge or of a reason why there would be a discharge from this facility. To our knowledge, this foundry site has not been cited for environmental problems over the past five years. What you are referring to, may relate to different corporate properties in Painted Post.

Q. Are the (discharge) points needed at the foundry?

A. The NYSDEC knows of no reason for discharge points at the foundry. The only monitoring that will be done at the foundry will be for the groundwater.

C. At the regular planning board meeting, a geographical mapping system with information from the EPA and SPDES register is being developed. Maps of the Painted Post area are being verified locally.

Q. Is it possible or to test air quality over the site? Is the air polluted? As the groundwater goes down, what is it doing to the air? Is it likely that higher temperatures cause more air pollution?

A. Semi-volatile organic compounds were identified in a localized area at location MW-2B at 3 - 12 feet below the ground surface. Also trace levels of TCA in groundwater at 20 - 80 ft depth are not likely to migrate to the surface. No air pollution problems are thus expected at this site even at higher ambient temperatures.

Q. When the cupolas were in place between 1940 - 1970, I-R purchased car engine blocks which were used for castings for the base metal iron process. I-R loaded these blocks from the top down into the heat; oil and ethylene glycol were vaporized and there were explosions and BOOM. At that point, could they have been contaminating the environment? Everything was black, there would be soot on cars, clothes, even the inside of windows in the winter. What is your experience with respect to this?

Castings, engine blocks, and molten metal exploded and the

gases were not all completely destroyed. A stack of transmissions were stored near monitoring well #1. The fumes were atrocious and smoke would go into our house.

A. The loading of castings for base metal iron into the cupolas resulted in the incineration of some of the organic compounds present due to the high temperatures encountered. Although some residual organic material may have remained, the more probable cause of the black soot was the coke that was used to fire the cupolas. The Department has no data to confirm any releases from the processes to which you are referring.

Q. There is an existing production well (the foundry water well which is not used for drinking). Was it tested?

A. There were actually two production wells on site. Both wells were tested initially in 1985 and no contamination was found.

Q. How will the new storm water regulations impact this facility? Industries have rules. How will this site be treated by SPDES permit?

A. This site is not regulated by the new storm water regulations since it is not in operation. As stated earlier, the Department is not aware of any need for a State Pollution Discharge Elimination System (SPDES) permit at this site.

Q. Are there any storm drains that drain to the village to our street? If there are holes or seepage, could that be causing contamination?

If pipes are open, soil contamination could be deeper down, even after the flood of 1972?

A. Yes, there are storm drains on the facility property. The direction that they drain is unknown. However, if the storm drains were to leak, the material would have to percolate down through the soil to get to the groundwater. Sampling has not indicated any contaminant sources in the soils near any storm drains.

A. For the material to impact groundwater, it would have to percolate down through the soil to get to the groundwater. Sampling has not indicated any contaminant sources in soils that could be the cause of the TCA contamination found in the groundwater including the Village of Painted Post municipal well #4.

Q. Can it wash into the street? Even our storm sewer on

Chemung Street, when it rains, turns into a canal. You cannot even drive a car from the curb to the railroad track, a distance of 100 - 150 yards.

A. Although the potential may have existed for materials to wash along the surface, in order to get to the groundwater, contaminants would need to percolate down through all of the soils to get to the groundwater table. There has been no indication of soil contamination in the areas where monitoring wells have been placed.

Q. Could contamination in monitoring well 5A be from this?

We know there was a huge cistern by those wells.

A. During the installation of monitoring wells MW-5A and MW-5B, screening and sampling was conducted. There was no indication of TCA in the soil. Groundwater TCA levels at monitoring well 5A are consistently in the range of 5 - 8 ppb, which marginally exceed the 5 ppb NYS Drinking Water Standard. The source of this TCA can not be determined from this investigation. Monitoring well 5A is located approximately 250 ft. northeast of the I-R Foundry. It is believed to be cross gradient or downgradient, depending upon the pumping activity of the public water supply well. It is important to note that the public is not exposed to groundwater at this location.

Q. Did you find the top and bottom of the water table?

A. Wells were installed to look at both surface and deep contamination. Deeper wells were installed to what was believed to be the bottom of the aquifer in a number of areas.

Appendix - B
Administrative Record

ADMINISTRATIVE RECORD

1) Final Analytical Review for Ingersoll-Rand Foundry Site, November 1, 1989

2) Revised Proposal for Groundwater Quality Assessment, August 12, 1991

3) Interim Stratigraphy Report for Phase - I Groundwater Quality Assessment, January 1992

4) Fact Sheet by New York State Department of Environmental Conservation, March 1992

5) Groundwater Quality Assessment - Ingersoll-Rand Foundry, September 1992

6) Subsurface Investigation Report (alleged drum disposal area), February 9, 1993

7) Subsurface evaluation of MW-2B - Additional Groundwater Quality Assessment, August 2, 1993

8) First Quarter Well Sampling Event Report, August 30, 1993

9) Second Quarter Well Sampling Event Report, November 4, 1993

10) Third Quarter Well Sampling Event Report, December 13, 1993

11) Fourth Quarter Well Sampling Event Report, February 8, 1994

12) Focussed Feasibility Study Report - Former Ingersoll-Rand Foundry, February 25, 1994

13) Fact Sheet/Public Meeting Announcement, February 1994

14) Record of Decision (ROD), including Responsiveness Summary of March 7, 1994 public meeting

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REMEDIAL WORK PLAN

Former Ingersoll-Rand Foundry Site Village of Painted Post Steuben County, New York

Prepared For:

PAINTED POST DEVELOPMENT, LLC.

Submitted by:
Malcolm Pirnie, Inc.
40 Centre Drive
Orchard Park, NY 14127

AUGUST 2005

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SECTION 1

Introduction

1.1 Purpose and Scope

Painted Post Development, LLC plans to redevelop the former Ingersoll-Rand Foundry Site in Painted Post, New York for use as a warehousing and distribution center. Malcolm Pirnie has prepared this Remedial Action Work Plan to support a New York State Department of Environmental Conservation (NYSDEC)-sponsored Brownfields Cleanup Program (BCP) remediation of the Site appropriate for its intended use. This Work Plan summarizes the conclusions of site investigations performed on the site and describes the remedy selection process for the site.

Section 2.0 summarizes the results of investigations performed on the site and presents the remedial action objectives established for the site based on the human health risk assessment performed from the investigation data collected. Section 3.0 describes the range of potentially applicable remedies available and presents the evaluation of each alternative against NYSDEC criteria. Section 4.0 presents the conceptual design and proposed implementation schedule of the selected remedial alternative

1.2 Background

The Site is a former foundry plant facility situated on approximately 49-acres of land at the northwest end of West Water Street in the northwestern portion of the Village of Painted Post, Steuben County, New York. The Site is approximately 500 feet east of the south-flowing Cohocton River. The Site is surrounded by an open field to the west, a parking lot to the south and residential housing to the east and north. Two rail spurs once serviced the Site. The facility

began operations in 1848 as a machine shop and foundry owned by the Weston Engine Company. In 1898, the Imperial Engine Company, a subsidiary of the Rand Drill Company, purchased the facility. In 1905 Rand merged with the Ingersoll-Sergeant Drill Company to become Ingersoll-Rand (IR). The facility remained under IR's ownership until December 31, 1986 when Dresser Industries merged with IR to become the Dresser-Rand Company (Capsule, 1988).

During its active use, the foundry contained 287,000 square feet of industrial buildings, most of which were located along the northeastern side of the Site. The foundry produced gray iron castings used in assembling air compressors. In 1972, the foundry began producing gray iron in continuous pour from electric-melt furnaces. At that time operations included pattern construction, sand mold lines, casting, shakeout, casting cleaning, and pattern and casting storage (Capsule, 1988). IR ceased production operations at the Painted Post foundry site on January 1, 1986.

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Summary of Site Conditions

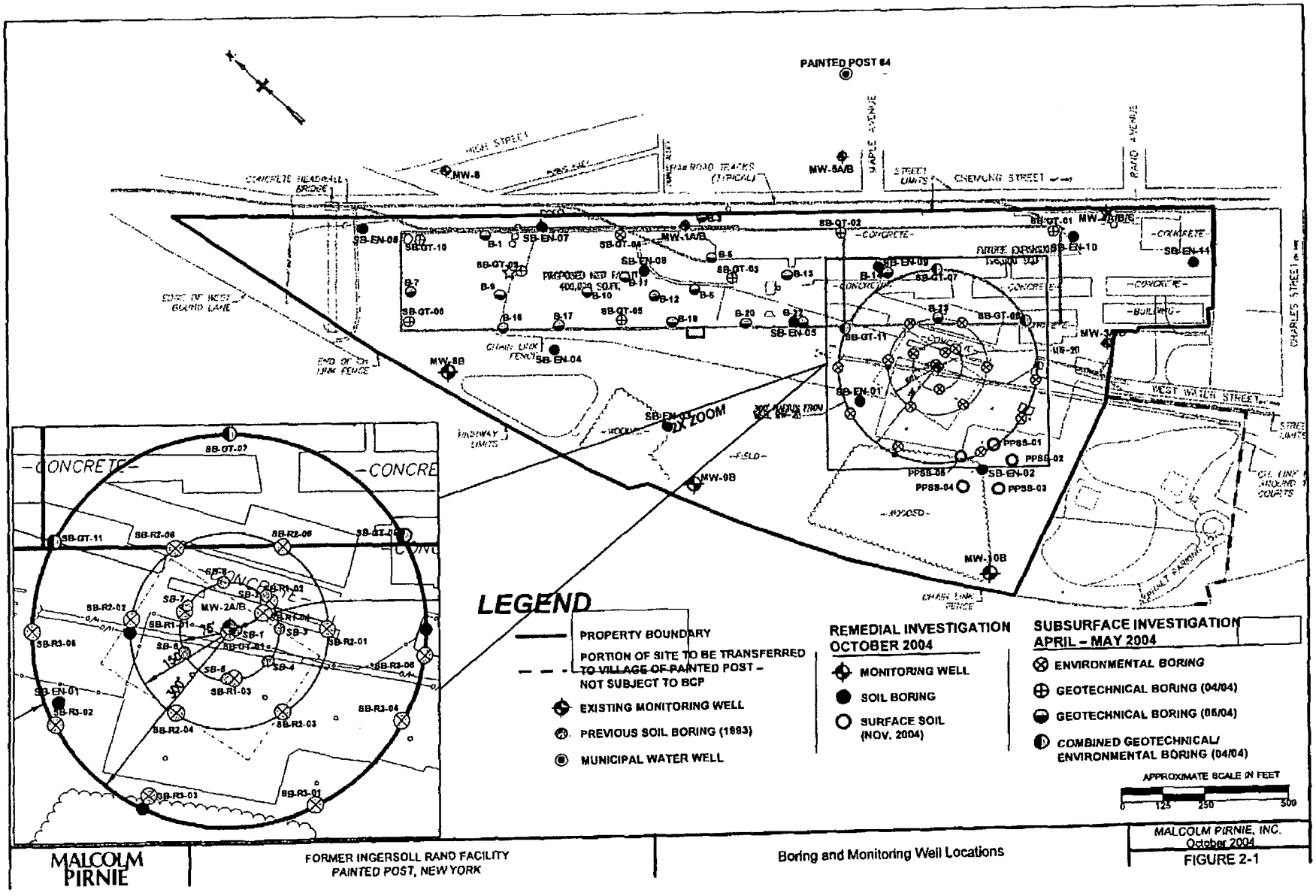
SECTION 2

2.1 Summary of Previous Investigations

The following is a general summary of previous environmental investigations and remedial actions performed at the Site. Information for this summary was obtained from copies of reports, or portions of reports, made available by the New York State Department of Environmental Conservation (NYSDEC) Region 8 office under a Freedom of Information Law (FOIL) request # 04289. This summary is intended to provide a general idea of the previous and current Site conditions and should not be considered a complete presentation of past environmental activities at the Site. Figure 2-1 illustrates boring and monitoring well locations.

December 1985 – As part of the Site closure, IR contracted Capsule Environmental Engineers, Inc. (CEE) to identify areas on Site that may contain PCBs. CEE conducted a site assessment and preliminary sampling for PCBs. Based on the results of these activities, CEE prepared a cleanup specification for removal of underground storage tanks, equipment cleaning, removal of spent raw materials, removal of wastes generated during the cleanup operations, and initial studies to determine if further remedial work was necessary.

June 25, 1986 to August 12, 1988 – Allwash of Syracuse was awarded the initial PCB cleanup contract and completed the work in two "divisions". Division I activities included further evaluation of contaminated areas and the characterization of waste materials for subsequent disposal. Division II activities included the cleaning and removal of numerous underground storage tanks containing products including, Linocure A.W., Linoil 742, kerosene, gasoline, and diesel fuel. Also completed during Division II was the cleaning and removal of



MALCOLM PIRNIE

FORMER INGERSOLL RAND FACILITY
PAINTED POST, NEW YORK

Boring and Monitoring Well Locations

MALCOLM PIRNIE, INC.
October 2004

FIGURE 2-1

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contaminated machinery and equipment and the excavation of contaminated soil. Soil contaminants included PCBs, oil and grease, and lead.

January 1992 – Law Environmental, of Albany, New York prepared (for CEE on behalf of IR) an Interim Stratigraphy Report for a Phase I Groundwater Quality Assessment. Two soil borings were drilled and sampled to the depth of 82 feet to determine subsurface conditions and finalize monitoring well construction details for the subsequent groundwater quality assessment.

September 1992 – Wenck Associates, Inc. of Maple Plain Minnesota (for CEE on behalf of IR) completed a Groundwater Quality Assessment. The purpose of the GQA was to satisfy requirements of Section VII of an Order on Consent between IR and the NYSDEC that was signed on October 2, 1987. Section VII addresses the question of whether or not past practices on site have led to impacts to groundwater. As part of this GWA, 13 groundwater monitoring wells were installed at seven locations. Some of the wells were installed in groups of two or more with each grouped well monitoring one of three unique water-production depths. Some wells monitored the 80-foot depth and were designated as "A" wells, others monitored the water table and were designated "B" wells. At well location 4, a third well was installed to monitor above an aquitard of limited extent at the 35-foot depth. The geology of the overburden was characterized, as were the chemical characterizations of the soil and groundwater flow and quality. The effects of pumping nearby municipal supply wells were also mapped to show a local effect at the Site. Samples of fill material at well number MW-2 contained elevated PAHs (up to 11 PPM total PAHs) and the presence of toluene. At MW-4A, soils and groundwater samples contained constituents of a petroleum product and benzene was present in the groundwater from well MW-4B at a concentration above the NYSDEC groundwater standard. Recommendations of the GQA report included confirmation sampling and further evaluation of the elevated PAHs at the MW-2B location.

February 9, 1993 – At the request of the NYSDEC, CEE completed a Subsurface Investigation on behalf of IR, in response to a citizen allegation regarding the disposition of drums at the Site. A soil trenching and sampling program was performed. Four trenches were excavated. Two drums were encountered, sampled and removed. One of the two drums contained ash-like material and was suspected to have been used for trash burning. Excavated

material primarily consisted of black and tan sands with treated wood and miscellaneous debris. Treated wood included small bits to full size railroad ties. The report concluded that no material found in the trenches would indicate that IR improperly disposed of hazardous materials in drums through burial on site and recommended no further subsurface investigation.

1993 Quarterly Groundwater Monitoring - Quarterly groundwater quality monitoring was performed beginning in the second quarter of 1993. References to this monitoring data (see 2/25/94 FS report described below) indicate that sample results since beginning the quarterly monitoring through the subsequent two years resulted in no exceedances of NYS groundwater standards or Federal MCLs.

August 2, 1993 – Per the recommendations made in the September 1992 Groundwater Quality Assessment Report, CEE, on behalf of IR, prepared a report titled "Report of the Subsurface Evaluation of MW-2B–Additional Groundwater Quality Assessment Investigation." CEE drilled eight soil borings at and around well MW-2B to further delineate the area of elevated PAHs. One boring was placed adjacent to well MW-2B, four borings were placed around the center boring at a distance of 40 feet and two were placed at a distance of 75 feet. Where conditions allowed, samples were collected at the three-foot depth and directly below the fill, which ranged in thickness between six and 13 feet. All samples were analyzed for semivolatile organic compounds. All samples from the three-foot depth contained PAHs with a maximum of 25 PPM. Samples of the native soils beneath the fill contained no significant PAHs. Stated conclusions of the report were that significant levels of PAHs are not vertically migrating and impacting the natural soils at the Site and that previous groundwater sampling data for wells MW-2A and MW-2B indicate that PAHs have not impacted the groundwater at this well location. Additional evaluation of the PAHs was not deemed warranted.

February 25, 1994 – CEE, on behalf of IR, prepared a Focused Feasibility Study (FFS) for the Site in February 1994. As part of the FFS, a Risk assessment was performed that focused on the presence of TCA in one of the nearby municipal supply wells (Well #4). The risk assessment concluded that the groundwater beneath the Site is in compliance with state and federal MCLs and that groundwater beneath the Site is unlikely to pose any health concerns to the community. The FS recommended the following:

- Limited groundwater monitoring at the Site
- Fencing of the Site to limit access, and
- A deed restriction to notify future property owners of the presence of contaminants in the vicinity of MW-2B.

August 25, 1994 – In accordance with a Record of Decision (ROD) signed in March 1994, CEE, on behalf of IR, submitted a Sampling and Analysis Plan for long-term monitoring of Site groundwater quality. The SAP outlined plans for the sampling of six on-site and two near off-site monitoring wells for VOCs five times over a period of three calendar years (1994, 1995 and 1996).

September 9, 1997 – CEE, on behalf of IR, prepared a 1997 Annual Ground Water Monitoring Report. Presumably the long-term groundwater monitoring was performed uninterrupted since beginning in 1994. The report presents results of VOC analysis of the eight wells specified in the 1994 SAP. The report documents very low concentrations (less than 1 ug/l) of several VOCs with only 1,1,1 – TCA present above 1 ug/l, ranging up to 6 ug/l.

May 2004 – Malcolm Pirnie performed a supplemental environmental investigation on behalf of the Painted Post Development, LLC in April 2004 in support of a due diligence effort for property acquisition. Soil borings were installed to delineate and characterize the extent of polycyclic aromatic hydrocarbons (PAHs) within the deed restricted radius of monitoring well MW-2B. Samples of the soil and overburden material were also collected as part of a pre-construction geotechnical study. Results of the investigation confirmed that fill material does contain elevated concentrations of PAHs that exceed the NYSDEC TAGM soil clean-up objectives. The fill material also contained elevated nickel, magnesium, and zinc at concentrations that exceeded typical background soils concentrations. The soil sample analytical results from this investigation were summarized in the RI Work Plan.

September 2004 – Malcolm Pirnie conducted RI sampling in September and October 2004. This sampling included drilling and sampling of 14 soil borings. From these borings, seven

surface soil, 17 subsurface soil/fill and three groundwater samples were collected. All samples from the RI sampling event were analyzed for Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), Polychlorinated biphenyls (PCBs), pesticides, TAL metals, cyanide, and pH. Tables 2-1A, 2-2, and 2-3 provide a summary of the analytical results of the RI.

November 2004- On November 12, 2004 as part of a pre-construction supplemental characterization study, five surface soil samples (0-2" depth) were collected to further delineate the lateral extent of elevated PCB concentrations detected at a single point sampled during the RI. The five samples were collected in a circular pattern approximately 100 feet from soil boring SB-EN-02 and analyzed for PCBs. Table 2-1B provides a summary of analytical results of the surface soil samples collected for PCBs.

2.2 Site Investigation Results Summary

Overall, the results of the 2004 investigations confirmed:

- On-site subsurface fill contains individual PAHs (benzo(a) pyrene and chrysene) above TAGM cleanup objectives, although total PAHs and total SVOCs were both below TAGM guidelines for total SVOCs.
- On-site surface soils in the northernmost treed area of the Site does not contain PAHs or metals above TAGM values; however, surface fill in other areas of the Site does contain individual PAHs above TAGM values. Elevated PCB concentrations were found in surface soils at one location on-site.
- Ground water at the Site has not been impacted by the contaminants present in Site fill.
- Native soils at the Site have not been significantly impacted by the contaminants present in Site fill.
- No "source area" of contamination exists.
- Very low concentrations of PCBs exist sporadically in the fill.

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TABLE 2-1A
SUMMARY OF ANALYTICAL RESULTS - WESTERN PERIMETER SURFACE SOIL
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	MW-8B 0-2" 10/4/2004	MW-9B 0-2" 9/30/2004	MW-10B 0-2" 9/29/2004	SB-EN-01 0-2" 9/30/2004	SB-EN-02 0-2" 9/30/2004	SB-EN-03 0-2" 10/1/2004	SB-EN-04 0-2" 10/1/2004
General Chemistry/Physical Characteristics									
Percent Solids	NA	NA	78.7	96.6	82.3	90.7	75.2	83	79.4
pH	NA	NA	6.08	6.5	6.39	6.87	6.81	7.11	6.03
TAL Inorganic Analytes (mg/kg)									
Aluminum	SB	33000	10,600	1,740	10,300	4,210	9,250	4,740	11,700
Antimony	SB	N/A				1.4 J	3.5 J	1.4 J	
Arsenic	7.5 or SB	3 - 12	6.5 J		6.2	3.4	6.6	3.3	6.8
Barium	300 or SB	15 - 600	128	9.9 J	138	49.2	114	56.2	141
Beryllium	0.16 or SB	0 - 1.75	0.41 J		0.33 J		0.1 J	0.04 J	0.38 J
Cadmium	1 or SB	0.1 - 1	0.27 J	0.5 J	0.55 J	0.49 J	2.8	0.59 J	0.56 J
Calcium	SB	130 - 35,000	1,490	232 J	2,820	2,500	3,910	1,650	1,400
Chromium	10 or SB	1.5 - 40	14.1 J	3	13.5	19.1	22.3	19.3	15.6
Cobalt	30 or SB	2.5 - 60	8.3 J	7 J	7.8 J	6.9 J	7.9 J	5 J	8.7 J
Copper	25 or SB	1 - 50	14.9 J	3.2 J	16.3	25.8	67.2	29.6	14.8
Iron	2000 or SB	2,000 - 550,000	19,600	2,620	18,600	14,000	19,200	13,300	20,900
Lead	400 [4]	200-500	22.4 J	136 J	25.9 J	117 J	365 J	57.9 J	25.1 J
Magnesium	SB	100 - 5,000	2,910	286 BJ	2,820 J	1,090 J	1,660 J	1,550 J	2,980 J
Manganese	SB	50 - 5,000	558	38.8	608	388	618	312	626
Mercury	0.1	0.001 - 0.2	0.04 B	0.01 J	0.04 J	0.04 J	0.33	0.05 J	0.05 J
Nickel	13 or SB	0.5 - 25	19.7	5 J	18.6	16.1	24.8	21.9	21.1
Potassium	SB	8,500 - 43,000	1,150 J	158 J	1,150 J	527 J	935 J	588 J	1,050 J
Sodium	SB	6,000 - 8,000	50.7 J	33.5 J	88.9 J	79.7 J	118 J	93.6 J	89.6 J
Vanadium	150 or SB	1 - 300	15.9	3.3 J	16	8.8 J	16.4	8.5 J	16.8
Zinc	20 or SB	9 - 50	70.1	9.5 J	78.5 J	48.6 J	216 J	54.6 J	72.4 J
Pest/PCBs (µg/kg)									
All Pesticides	NA	NA							
Total Pesticides	10	NA				370	2400	130	
Aroclor-1260	NA	NA				370	2400	130	
Total PCBs	1000	NA							

Notes: See Page 3

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MALCOLM PIRNIE

TABLE 2-1A
SUMMARY OF ANALYTICAL RESULTS - WESTERN PERIMETER SURFACE SOIL
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	MW-8B 0-2" 10/4/2004	MW-9B 0-2" 9/30/2004	MW-10B 0-2" 9/29/2004	SB-EN-01 0-2" 9/30/2004	SB-EN-02 0-2" 9/30/2004	SB-EN-03 0-2" 10/1/2004	SB-EN-04 0-2" 10/1/2004
Semi-Volatile Organic Compounds - SVOCs (µg/kg)									
2-Methylnapthalene	36,400	NA				95 J	150 J	59 J	
Acenaphthylene	41,000	NA				130 J			
Antracene	50,000	NA				92 J			
Benzo(a)anthracene	224	169 -59,000	120 J			830	2,700	440	270 J
Benzo(a)pyrene	61	165 - 220	190 J	48 J		1,200	3,500	670	380 J
Benzo(b)fluoranthene	1100	15,000 - 62,000	230 J	60 J		830	6,100	780	480
Benzo(g,h,i)perylene	50,000	900 - 47,000	220 J	66 J		1,000	5,500	680	380 J
Benzo(k)fluoranthene	1100	300 - 26,000	170 J	52 J		610	3,600	550	330 J
Bis(2-ethylhexyl)phthalate	50,000	NA		140 J	42 J	100 J	150 J	51 J	66 J
Chrysene	400	251 - 640	180 J	48 J		1,300	4,900	640	380 J
Dibenz(a,h,)anthracene	14	NA	57 J			290 J	1,600	210 J	110 J
Di-n-butylphthalate	8100	NA		37 J		130 J		71 J	
Fluoranthene	50,000	200 - 166,000	140 J	49 J		690	2,800	480	320 J
Indeno(1,2,3-cd)pyrene	3200	8,000 - 61,000	180 J	51 J		730	4,300	590	320 J
Naphthalene	13,000	NA				100 J	250 J	74 J	
Phenanthrene	50,000	NA				460	980 J	210 J	84 J
Pyrene	50,000	145 - 147,000	150 J	40 J		940	2,500	520	280 J
Total BaP Equivalent[3]	NA	NA	304	60	0	1,748	6,495	1,073	604
Total SVOCs	500,000***	NA	1,637	591	42	9,527	39,030	6,025	3,400
Volatile Organic Compounds - VOCs (µg/kg)									
Acetone	200	NA		4 J					
Cyclohexane	NA	NA	2 J					1 J	
Methyl Acetate	NA	NA	3 J						
Methylene chloride	100	NA							
Total VOCs	10,000	NA	5	4				1	

Notes: See Page 3

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MALCOLM PIRNIE

TABLE 2-1A
SUMMARY OF ANALYTICAL RESULTS - WESTERN PERIMETER SURFACE SOIL
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Notes:

Only those analytes detected at a minimum of one location are shown.
Blank space indicates analyte was not detected.
Shaded concentrations exceed TAGM values for Pest/PCBs, SVOCs, and VOCs.
Shaded TAL Inorganic Analytes exceed upper range of Eastern USA Background Concentrations and TAGM values.
Bold/Italic SVOC results exceed upper limit of Urban Soils Background Range for PAHs.
(1) New York State Dept. of Environmental Conservation *TAGM 4046, Recommended Soil Cleanup Objectives*, Dec. 2000.
(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.
(3) SVOCs background from Background Soil Concentrations of Poly Aromatic Hydrocarbons (PAHs), Urban Soils (U.S. and other), *Toxicological Profile for PAHs, US Dept. of Health and Human Services, August 1995.*
(4) USEPA Region 3 Soil Screening Level.
(5) Total BaP equivalent - Benzo (a) pyrene equivalent is calculated by multiplying the following individual PAH concentrations by their multiplier (#) and summing the results. Benzo (a) pyrene (1.00); Dibenzo (a,h) anthracene (1.00); Benzo (a) anthracene (0.10); Benzo (b) fluoranthene (0.10); Ideno (1,2,3-cd) pyrene (0.10); Benzo (k) fluoranthene (0.01); Chrysene (0.01).
*** - The Soil Cleanup Objective refers to the sum of these compounds.
D- Indicates result from subsequent run at 5x dilution.
J - Indicates and estimated value.

MALCOLM PIRNIE

TABLE 2-1B
SUMMARY OF ANALYTICAL RESULTS - SB-EN-02 SURFACE SOIL SAMPLES
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	Proposed Site Specific Action Level (SSAL)	PPSS-01 11/16/2004	PPSS-02 11/16/2004	PPSS-03 11/16/2004	PPSS-04 1 /16/2004	PPSS-DUP (PPSS-04) 11/16/2004	PPSS-05 11/16/2004
General Chemistry/Physical Characteristics							
Percent Solids (%)	NA	85.7	73.1	80.6	43	44.9	87.6
pH (s.u.)	NA	7.09	7.24	7.46	7.18	7.11	6.94
PCBs (ug/kg)							
Aroclor-1260	NA	98		72	7700	4500	730
Total PCBs (Surface - 1.0')	1,000	98		72	7700	4500	730

Notes:

Samples collected at the surface, at evenly spaced intervals on a 100 ft. radius around soil boring SB-EN-02.

Only those analytes detected at a minimum of one location are shown.

Blank space indicates analyte was not detected.

Shaded concentrations exceed Site Specific Action Levels (SSALS).

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MALCOLM PIRNIE

TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - OCTOBER 2004 SAMPLING
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE

PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	MW-8B 8-9' 10/4/2004	MW-9B 10-11.5' 9/30/2004	MW-10B 6-8' 9/29/2004	SB-EN-01 4-6' 9/30/2004	SB-EN-02 0.5-2' 9/30/2004	SB-EN-03 8-10' 10/1/2004	SB-EN-03 8-10' 10/1/2004	SB-EN-04 6-8' 10/1/2004	SB-EN-05 2-4' 10/1/2004	SB-EN-05 2-4' 10/1/2004
General Chemistry/Physical Characteristics												
Percent Solids	NA	NA	87.5	89.7	80.5	69.3	85.4	82	75.9	90.8	93.1	93.1
pH	NA	NA	7.96	7.15	7.72	6.95	7.48	-	7.8	7.31	-	7.87
TAL Inorganic Analytes (mg/kg)												
Aluminum	SB	33,000	3,810	6,620	11,100	25,100	5,030	-	8,080	2,800	-	3,630
Antimony	SB	N/A	7.4 J			1.7 J	0.87 J	-	6.4 J		-	
Arsenic	7.5 or SB	3 - 12	3.5 J	5.9	5.1	11.9	3.1	-	4.3	2 J	-	3.5
Barium	300 or SB	15 - 600	164	68.3	154	146	55	-	137	16.3 J	-	16.8 J
Beryllium	0.16 or SB	0 - 1.75		0.17 J	0.32 J		0.03 J	-	0.12 J		-	
Cadmium	1 or SB	0.1 - 1	1.1 J	0.43 J	0.46 J	2.0	0.83 J	-	1.9	0.2 J	-	0.39 J
Calcium	SB	130 - 35,000	6,150	1,100 J	2,150	3,290	1,590	-	3,160	1,110	-	4,040
Chromium	10 or SB	1.5 - 40	524 J	10.8	13.7	44.7	12.3	-	554	7.3	-	13.6
Cobalt	30 or SB	2.5 - 60	7.2 J	6.2 J	7.8 J	5 J	4.9 J	-	10.6 J	1.1 J	-	2.8 J
Copper	25 or SB	1 - 50	327 J	14.4	11.5	76.4	32.2	-	135	8.1	-	25.7
Iron	2000 or SB	2,000 - 550,000	38,700	17,600	18,300	38,500	13,000	-	48,200	8,670	-	16,800
Lead	400 [4]	200-500	157 J	11.6 J	9.2 J	298 J	114 J	-	89 J	5.2 J	-	8.5 J
Magnesium	SB	100 - 5,000	1,060 J	2,100 J	2,910 J	1,070 J	985 J	-	2,650 J	410 BJ	-	907 J
Manganese	SB	50 - 5,000	463	421	623	455	348	-	899	80.6	-	255
Mercury	0.1	0.001 - 0.2	0.11	0.02 J	0.03 J	0.27	0.05 J	-	0.04 J		-	0.02 J
Nickel	13 or SB	0.5 - 25	164	15.4	18.8	48.7	13.7	-	112	10.3	-	16.8
Potassium	SB	8,500 - 43,000	437 J	672 J	715 J	1,180 J	481 J	-	613 B	240 J	-	368 J
Selenium	2 or SB	0.1 - 3.9	1.3 J					-	1.1 J		-	
Silver	SB	N/A	3.7					-	0.51 J		-	
Sodium	SB	6,000 - 8,000	126 J	95.6 J	89.6 J	350 J	93.5 J	-	150 J	101 J	-	105 J
Total Cyanide	NA	NA	1.67					-			-	
Vanadium	150 or SB	1 - 300	10.6 J	11.6	16.3	42.3	9 J	-	13.8	6.2 J	-	15.5
Zinc	20 or SB	9 - 50	191	53.1 J	66.7 J	130 J	71.9 J	-	116 J	11.7 J	-	16.7 J
Pest/PCBs (µg/kg)												
All Pesticides	NA	NA						-			-	
Total Pesticides	10	NA						-			-	
Aroclor-1254	NA	NA					330 J	-			-	
Aroclor-1260	NA	NA					330	-			-	
Total PCBs	1000	NA										

Notes: See Page 5

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MALCOLM PIRNIE

TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - OCTOBER 2004 SAMPLING
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE

PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	MW-8B 8-9' 10/4/2004	MW-9B 10-11.5' 9/30/2004	MW-10B 6-8' 9/29/2004	SB-EN-01 4-6' 9/30/2004	SB-EN-02 0.5-2' 9/30/2004	SB-EN-03 8-10' 10/1/2004	SB-EN-03 4-11' 10/1/2004	SB-EN-04 6-8' 10/1/2004	SB-EN-05 2-4' 10/1/2004	SB-EN-05 2-5' 10/1/2004
Semi-Volatile Organic Compounds - SVOCs (µg/kg)												
1,1'-Biphenyl	NA	NA				98 J	64 J	-			-	
2-Methylnapthalene	36,400	NA				76 J	170 J	-	110 J		-	47 J
Acenaphthene	50,000	NA				52 J		-			-	56 J
Acenaphthylene	41,000	NA						-	46 J		-	150 J
Anthracene	50,000	NA	130 J			140 J	67 J	-	66 J	250 J	-	110 J
Benzo(a)anthracene	224	169 -59,000	3,300			3,500	1,400	-	750	8,000	-	1,200
Benzo(a)pyrene	61	165 - 220	4,600			3,700	1,700	-	1,100	11,000	-	2,000
Benzo(b)fluoranthene	1100	15,000 - 62,000	5,700			6,900 D	2,200	-	1,400	13,000	-	2,800
Benzo(g,h,i)perylene	50,000	900 - 47,000	5,300			4,200 D	1,800	-	1,200	9,900	-	2,100
Benzo(k)fluoranthene	1100	300 - 26,000	4,000			3,400	1,000	-	1,100	9,000	-	1,600
Bis(2-ethylhexyl)phthalate	50,000	NA		330 J	180 J	130 J	360 J	-	1,000		-	560
Carbazole	NA	NA	170 J			86 J		-		440 J	-	
Chrysene	400	251 - 640	4,900			5,900 D	2,300	-	1,100	11,000	-	1,900
Dibenz(a,h,)anthracene	14	NA	1,500			1,500	580	-	360 J	3,300	-	670
Dibenzofiran	6200	NA				100 J	55 J	-			-	
Di-n-butylphthalate	8100	NA		76 J		86 J	45 J	-	46 J		-	110 J
Fluoranthene	50,000	200 - 166,000	4,000			4,100 D	960	-	800	9,100	-	1,100
Fluorene	50,000	NA						-			-	
Indeno(1,2,3-cd)pyrene	3200	8,000 - 61,000	4,300			3,600	1,300	-	1,000	8,800	-	1,800
Naphthalene	13,000	NA	120 J			240 J	200 J	-	110 J		-	72 J
Phenanthrene	50,000	NA	1,000 J			1,200	670	-	400 J	2,100	-	290 J
Pyrene	50,000	145 - 147,000	3,400			2,800	1,000	-	690	8,400	-	1,000
Total BaP Equivalent[5]	NA	NA	7,519	0	0	6,693	2,803	-	1,797	17,480	-	3,285
Total SVOCs	500,000***	NA	42,420	406	180	41,808	15,871	-	11,278	94,290	-	17,565
Volatile Organic Compounds - VOCs (µg/kg)												
1,1,1-Trichloroethane	800	NA							-			-
Acetone	200	NA							-			-
Benzene	60	NA				3 J			-			-
Cyclohexane	NA	NA	4 J				2 J	1 J	-	3 J	4 J	-
Isopropylbenzene	5,000	NA							-			-
M+P-xylene	1,200	NA							-			-
O-xylene		NA							-			-
Methyl Acetate	NA	NA	2 J									
Methycyclohexane	NA	NA							-			-
Methylene chloride	100	NA							-			-
Toluene	1,500	NA						2 J			1 J	
Trichloroethene	700	NA							-			-
Total VOCs	10,000	NA	6			3	2	3	-	3	5	-

Notes: *See Page 5*

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MALCOLM PIRNIE

TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - OCTOBER 2004 SAMPLING
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE

PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	SB-EN-06 12-13.5' 10/4/2004	SB-EN-07 0.3-13' 10/5/2004	SB-EN-08 6-8' 10/5/2004	SB-EN-08 6-10' 10/5/2004	SB-EN-09 2-3' 10/5/2004	DUP-1 (SB-EN-09 2-3') 10/5/2004	SB-EN-10 12-14 10/6/2004	VOA-DUP (SB-EN-10 12-14') 10/6/2004	SB-EN-10 12-16 10/6/2004	SB-EN-11 2-4 10/6/2004
General Chemistry/Physical Characteristics												
Percent Solids	NA	NA	87.6	74.7	79.3	80	81.5	85.6	91.8	92.7	91.1	88.8
pH	NA	NA	7.74	6.93	-	6.96	7.11	7.19	-	-	9.23	6.02
TAL Inorganic Analytes (mg/kg)												
Aluminum	SB	33,000	10,800	8,620	-	10,400	7,600	6,910	-	-	7,630	7,790
Antimony	SB	N/A			-		1.4 J	1.2 J	-	-		
Arsenic	7.5 or SB	3 - 12	8.5 J	4.3 J	-	12 J	14.2 J	14.5 J	-	-	5.4 J	5.3 J
Barium	300 or SB	15 - 600	133	49.1 J	-	89	105	114	-	-	46	44.5 J
Beryllium	0.16 or SB	0 - 1.75	0.33 J	0.06 J	-	0.39 J	0.07 J	0.16 J	-	-		
Cadmium	1 or SB	0.1 - 1	0.29 J	0.68 J	-	0.38 J	0.78 J	0.89 J	-	-	0.25 J	0.25 J
Calcium	SB	130 - 35,000	1,570	1,260 J	-	4,250	8,310	15,400	-	-	42,800	3,460
Chromium	10 or SB	1.5 - 40	16.5 J	10.7 J	-	14.4 J	15.4 J	15.9 J	-	-	10.9 J	17.5 J
Cobalt	30 or SB	2.5 - 60	10.9 J	4.4 J	-	8.4 J	5.1 J	5.2 J	-	-	6.7 J	3.4 J
Copper	25 or SB	1 - 50	21.1 J	111 J	-	40.4 J	41.6 J	39.4 J	-	-	30.7 J	17.1 J
Iron	2000 or SB	2,000 - 550,000	24,900	14,000	-	25,100	34,700	31,000	-	-	17,500	24,200
Lead	400 [4]	200-500	10.3	52.3 J	-	17.4	66.1 J	80.6 J	-	-	6.3	19 J
Magnesium	SB	100 - 5,000	3,400	1,480	-	3,140	1,980	1,810	-	-	14,600	866 J
Manganese	SB	50 - 5,000	532	293	-	1,170	396	451	-	-	601	630
Mercury	0.1	0.001 - 0.2	0.02 J	0.05 J	-	0.05 B	0.1 J	0.29	-	-		0.1 J
Nickel	13 or SB	0.5 - 25	25.2	14	-	22.4	14.5	14.9	-	-	16.4	13.1
Potassium	SB	8,500 - 43,000	977 J	676 J	-	1,190 J	997 J	1,050 J	-	-	815 J	660 J
Selenium	2 or SB	0.1 - 3.9			-				-	-		
Silver	SB	N/A			-				-	-		
Sodium	SB	6,000 - 8,000	72.3 J	49.7 J	-	93.5 J	105 J	135 J	-	-	109 J	128 J
Total Cyanide	NA	NA			-				-	-		
Vanadium	150 or SB	1 - 300	17.2	13.6	-	20.8	18.9	18	-	-	16.9	16.5
Zinc	20 or SB	9 - 50	74	75.1	-	101	165	172	-	-	86.1	44.2
Pest/PCBs (ug/kg)												
All Pesticides	NA	NA			-				-	-		
Total Pesticides	10	NA			-				-	-		
Aroclor-1254	NA	NA		150	-				-	-		
Aroclor-1260	NA	NA		47 J	-		480	360	-	-		
Total PCBs	1,000	NA		197	-		480	360	-	-		

Notes: See Page 5

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MALCOLM PIRNIE

TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - OCTOBER 2004 SAMPLING
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	SB-EN-06 12-13.5' 10/4/2004	SB-EN-07 0.5-1.5' 10/5/2004	SB-EN-08 6-8' 10/5/2004	SB-EN-08 6-10' 10/5/2004	SB-EN-09 2-3' 10/5/2004	DUP-1 (SB-EN-09 2-3') 10/5/2004	SB-EN-10 12-14 10/6/2004	VOA-DUP (SB-EN-10 12-14') 10/6/2004	SB-EN-10 12-16 10/6/2004	SB-EN-11 2-4 10/6/2004
Semi-Volatile Organic Compounds - SVOCs (µg/kg)												
1,1'-Biphenyl	NA	NA	Note 6		-	Note 6	56 J	86 J	-	-		
2-Methylnapthalene	36,400	NA	Note 6		-	Note 6	330 J	480	-	-		
Acenaphthene	50,000	NA	Note 6		-	Note 6	66 J	97 J	-	-		
Acenaphthylene	41,000	NA	Note 6		-	78 J	44 J		-	-		
Anthracene	50,000	NA	Note 6		-	Note 6	68 J	67 J	-	-		
Benzo(a)anthracene	224	169 -59,000	Note 6	160 J	-	290 J	500	530	-	-		8,100 J
Benzo(a)pyrene	61	165 - 220	Note 6	310 J	-	380 J	680	740	-	-		11,000 J
Benzo(b)fluoranthene	1100	15,000 - 62,000	Note 6	310 J	-	440	870	970	-	-		15,000
Benzo(g,h,i)perylene	50,000	900 - 47,000	Note 6	360 J	-	300 J	720	740	-	-		13,000
Benzo(k)fluoranthene	1100	300 - 26,000	Note 6	230 J	-	290 J	510	580	-	-		12,000
Bis(2-ethylhexyl)phthalate	50,000	NA	760 J		-	Note 6	540		-	-	1,300 J	
Carbazole	NA	NA	Note 6		-	Note 6	48 J	53 J	-	-		
Chrysene	400	251 - 640	Note 6	220 J	-	330 J	690	750	-	-		11,000 J
Dibenz(a,h,)anthracene	14	NA	Note 6	97 J	-	120 J	220 J	220 J	-	-		4,700 J
Dibenzofiran	6200	NA	Note 6		-	Note 6	110 J	150 J	-	-		
Di-n-butylphthalate	8100	NA	39 J	160 J	-	45 J	83 J	52 J	-	-		
Fluoranthene	50,000	200 - 166,000	Note 6	170 J	-	220 J	770	770	-	-		10,000 J
Fluorene	50,000	NA	Note 6		-	Note 6		51 J	-	-		
Indeno(1,2,3-cd)pyrene	3200	8,000 - 61,000	Note 6	310 J	-	330 J	650	660	-	-		12,000
Naphthalene	13,000	NA	Note 6		-	Note 6	200 J	280 J	-	-		
Phenanthrene	50,000	NA	Note 6	52 J	-	Note 6	490	580	-	-		5,100 J
Pyrene	50,000	145 - 147,000	Note 6	170 J	-	190 J	510	480	-	-		8,700 J
Total BaP Equivalent[5]	NA	NA	0	490	-	612	1,114	1,189	-	-	0	19,440
Total SVOCs	500,000***	NA	799	2,549	-	3,013	8,155	8,336	-	-	1,300	110,600
Volatile Organic Compounds - VOCs (µg/kg)												
1,1,1-Trichloroethane	800	NA				-		-			-	
Acetone	200	NA	4 J			-	6 J	-		21 J	-	
Benzene	60	NA				-		-			-	
Cyclohexane	NA	NA				-	3 J	-			-	4 J
Isopropylbenzene	5,000	NA				-		-	11 J	15 J	-	
M+P-xylene	1,200	NA				-	2 J	-			-	
O-xylene		NA				-		-			-	
Methyl Acetate	NA	NA										
Methycyclohexane	NA	NA				-	2 J	-			-	
Methylene chloride	100	NA				-		-			-	
Toluene	1,500	NA				-	3 J	-			-	
Trichloroethene	700	NA				-		-			-	
Total VOCs	10,000	NA	4			-	16	-		36	-	4

Notes: See Page 5

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TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL OCTOBER 2004 SAMPLING
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Notes:

Shaded Sample locations represent samples taken of the fill materials. Unshaded sample locations represent samples of native soils.

Only those analytes detected at a minimum of one location are shown.

Blank space indicates analyte was not detected.

Shaded concentrations exceed TAGM values for Pest/PCBs, SVOCs, and VOCs.

Shaded TAL Inorganic Analytes exceed upper range of Eastern USA Background Concentrations and TAGM values.

Bold/Italic SVOC results exceed upper limit of Urban Soils Background Range for PAHs.

(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.

(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.

(3) SVOCs background from Background Soil Concentrations of Poly Aromatic Hydrocarbons (PAHs), Urban Soils (U.S. and Other), Toxicological Profile for PAHs, US Dept. of Health and Human Services, August 1995.

(4) USEPA Region 3 Soil Screening Level.

(5) Total BaP equivalent - Benzo (a) pyrene equivalent is calculated by multiplying the following individual PAH concentrations by their multiplier (#) and summing the results. Benzo (a) pyrene (1.00); Dibenzo (a,h) anthracene (1.00); Benzo (a) anthracene (0.10); Benzo (b) fluoranthene (0.10); Ideno (1,2,3-cd) pyrene (0.10); Benzo (k) fluoranthene (0.01); Chrysene (0.01).

(6) Rejected base-neutral fraction non-detects due to low surrogate recovery for 1,2-dichlorobenzene-d4 (<10%), positive base-neutrals qualified "J", negative bias suggested.

*** - The Soil Cleanup Objective refers to the sum of these compounds.

D - indicates a result detected in a secondary dilution factor.

J - Indicates and estimated value.

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MALCOLM PIRNIE

TABLE 2-3
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - APRIL 2004 SAMPLING
SUBSURFACE INVESTIGATION
FORMER INGERSOLL RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (feet bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	SB-CT-01 0 to 5 4/8/2004	SB-CT-01 5 to 10 4/8/2004	SB-R1-01 4 to 8 4/8/2004	SB-R1-02 8 to 16 4/8/2004	SB-R1-03 3 to 6 4/8/2004	SB-R1-04 2 to 4 4/8/2004	SB-R2-01 0 to 5 4/12/2004	SB-R2-02 2 to 8 4/12/2004
pH										
pH	NA	NA	7.42	7.58	7.61	8.08	7.84	7.57	7.51	6.74
TAL Inorganic Analytes (mg/kg)										
Aluminum	SB	33,000	-	-	-	-	-	-	-	-
Antimony	SB	N/A	-	-	-	-	-	-	-	-
Arsenic	7.5 or SB	3 - 12	-	-	-	-	-	-	-	-
Barium	300 or SB	15 - 600	-	-	-	-	-	-	-	-
Beryllium	0.16 or SB	0 - 1.75	-	-	-	-	-	-	-	-
Cadmium	1 or SB	0.1 - 1	-	-	-	-	-	-	-	-
Calcium	SB	130 - 35,000	-	-	-	-	-	-	-	-
Chromium	10 or SB	1.5 - 40	-	-	-	-	-	-	-	-
Cobalt	30 or SB	2.5 - 60	-	-	-	-	-	-	-	-
Copper	25 or SB	1 - 50	-	-	-	-	-	-	-	-
Iron	2000 or sb	2,000 - 550,000	-	-	-	-	-	-	-	-
Lead	400 [4]	200-500	-	-	-	-	-	-	-	-
Magnesium	SB	100 - 5,000	-	-	-	-	-	-	-	-
Manganese	SB	50 - 5,000	-	-	-	-	-	-	-	-
Mercury	0.1	0.001 - 0.2	-	-	-	-	-	-	-	-
Nickel	13 or SB	0.5 - 25	-	-	-	-	-	-	-	-
Potassium	SB	8,500 - 43,000	-	-	-	-	-	-	-	-
Selenium	2 or SB	0.1 - 3.9	-	-	-	-	-	-	-	-
Silver	SB	N/A	-	-	-	-	-	-	-	-
Sodium	SB	6,000 - 8,000	-	-	-	-	-	-	-	-
Thallium	SB	N/A	-	-	-	-	-	-	-	-
Vanadium	150 or SB	1 - 300	-	-	-	-	-	-	-	-
Zinc	20 or SB	9 - 50	-	-	-	-	-	-	-	-
Polycyclic Aromatic Hydrocarbons (ug/kg)										
Acenaphthene	50,000	NA			1,300 J					980 J
Acenaphthylene	41,000	NA								2,300 J
Anthracene	50,000	NA								
Benzo(a)anthracene	224	169 - 59,000	1,700 J	1,800 J	11,000		4,000 J	5,900	1,100 J	5,100
Benzo(a)pyrene	61	165 - 220	3,200	3,200	22,000		5,700 J	8,500	2,000 J	3,500
Benzo(b)fluoranthene	1,100	15,000 - 62,000	5,800	7,000	31,000		9,700 J	16,000	3,800	9,600
Benzo(g,h,i)perylene	50,000	900 - 47,000	4,600 J	4,500	16,000			10,000	2,500	
Benzo(k)fluoranthene	1,100	300 - 26,000	2,000 J	1,500 J	9,700		3,200 J	3,900 J	1,100 J	
Chrysene	400	251 - 640	3,100	3,000	15,000		5,600	4,700	1,600 J	6,100
Dibenzo(a,h)anthracene	14	NA	1,400 J		3,500 J			3,400 J		
Fluoranthene	50,000	200 - 166,000	1,800 J	2,000 J	14,000		4,700 J	7,600	1,100 J	7,600
Fluorene	50,000	NA								730 J
Indeno(1,2,3-cd)pyrene	3,200	8,000 - 61,000	3,800	4,300	1,700		3,800 J	8,300	2,100 J	
Naphthalene	13,000	NA								
Phenanthrene	50,000	NA			2,500 J		1,200 J	5,000 J		11,000
Pyrene	50,000	145 - 147,000	1,900 J	1,500 J	16,000		4,400 J	8,000	1,400 J	10,000
Total BaP equivalent[5]	NA	NA	6,969	5,530	23,430		1,455	15,917	3,074	957
Total PAHs	500,000***	NA	30,300	28,800	143,700		42,000	85,300	16,700	50,910

Notes: (see page 3)

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TABLE 2-3
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - APRIL 2004 SAMPLING
SUBSURFACE INVESTIGATION
FORMER INGERSOLL RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (feet bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2,3]	SB-R2-03 1 to 4.5 4/12/2004	SB-R2-04 1 to 4 4/12/2004	SB-R2-05/06 2 to 10 4/12/2004	SB-R3-01 0 to 4 4/14/2004	SB-R3-01 4 to 9 4/14/2004	SB-R3-02 0 to 4 4/14/2004	SB-R3-02 4 to 7 4/14/2004	SB-R3-03 0 to 6 4/14/2004
pH										
pH	NA	NA	7.18	7.39	8.53	6.38	7.7	7.1	6.68	7.04
TAL Inorganic Analytes (mg/kg)										
Aluminum	SB	33,000	-	-	-	-	-	-	-	-
Antimony	SB	N/A	-	-	-	-	-	-	-	-
Arsenic	7.5 or SB	3 - 12	-	-	-	-	-	-	-	-
Barium	300 or SB	15 - 600	-	-	-	-	-	-	-	-
Beryllium	0.16 or SB	0 - 1.75	-	-	-	-	-	-	-	-
Cadmium	1 or SB	0.1 - 1	-	-	-	-	-	-	-	-
Calcium	SB	130 - 35,000	-	-	-	-	-	-	-	-
Chromium	10 or SB	1.5 - 40	-	-	-	-	-	-	-	-
Cobalt	30 or SB	2.5 - 60	-	-	-	-	-	-	-	-
Copper	25 or SB	1 - 50	-	-	-	-	-	-	-	-
Iron	2000 or sb	2,000 - 550,000	-	-	-	-	-	-	-	-
Lead	400 [4]	200-500	-	-	-	-	-	-	-	-
Magnesium	SB	100 - 5,000	-	-	-	-	-	-	-	-
Manganese	SB	50 - 5,000	-	-	-	-	-	-	-	-
Mercury	0.1	0.001 - 0.2	-	-	-	-	-	-	-	-
Nickel	13 or SB	0.5 - 25	-	-	-	-	-	-	-	-
Potassium	SB	8,500 - 43,000	-	-	-	-	-	-	-	-
Selenium	2 or SB	0.1 - 3.9	-	-	-	-	-	-	-	-
Silver	SB	N/A	-	-	-	-	-	-	-	-
Sodium	SB	6,000 - 8,000	-	-	-	-	-	-	-	-
Thallium	SB	N/A	-	-	-	-	-	-	-	-
Vanadium	150 or SB	1 - 300	-	-	-	-	-	-	-	-
Zinc	20 or SB	9 - 50	-	-	-	-	-	-	-	-
Polycyclic Aromatic Hydrocarbons (ug/kg)										
Acenaphthene	50,000	NA								
Acenaphthylene	41,000	NA								
Anthracene	50,000	NA								
Benzo(a)anthracene	224	169 - 59,000	2,300 J	5,900 D		1,900	350	1,700 J	6,200	640 J
Benzo(a)pyrene	61	165 - 220	3,700	7,900 D		3,500	580	2,500 J	11,000	970 J
Benzo(b)fluoranthene	1,100	15,000 - 62,000	6,200	15,000 D	91 J	5,600	1,200	4,200	16,000	1,500 J
Benzo(g,h,i)perylene	50,000	900 - 47,000	3,500	6,900 D		2,900	770	3,000	9,000	
Benzo(k)fluoranthene	1,100	300 - 26,000	2,000 J	3,100 JD		2,100	260 J		5,000	
Chrysene	400	251 - 640	3,600	8,300 D	64 J	3,000	580	3,100	9,000	1,100 J
Dibenzo(a,h)anthracene	14	NA	1,100 J			880 J	230 J	960 J	2,000	
Fluoranthene	50,000	200 - 166,000	2,700 J	6,700 D		1,800	300	1,100 J	5,500	
Fluorene	50,000	NA								
Indeno(1,2,3-cd)pyrene	3,200	8,000 - 61,000	2,900	6,800		3,000	660	2,200 J	9,200	
Naphthalene	13,000	NA								
Phenanthrene	50,000	NA	950 J	1,600 JD		300 J	86 J		740 J	
Pyrene	50,000	145 - 147,000	2,600 J	5,600 D		1,700	280	1,500 J	5,300	
Total BaP equivalent[5]	NA	NA	5,588	9,193		4,706	1,177	4,673	13,890	
Total PAHs	500,000***	NA	31,550	67,800		26,680	5,296	20,260	78,940	

Notes: (see page 3)

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TABLE 2-3
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - APRIL 2004 SAMPLING
SUBSURFACE INVESTIGATION
FORMER INGERSOLL RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (feet bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	SB-R3-03 6 to 12 4/14/2004	SB-R3-04 2 to 5 4/14/2004	SB-R3-04 5 to 7 4/14/2004	SB-X2 (SB-R3-04) 5 to 7 4/14/2004	SB-R3-05 2 to 10 4/14/2004	SB-R3-06 0 to 4 4/14/2004	SB-R3-06 4 to 8 4/14/2004	SB-GT-01/02 2 to 10 4/9/2004
pH										
pH	NA	NA	7.46	7.5	7.05	7.40	9.1	7.56	7.34	8.02
TAL Inorganic Analytes (mg/kg)										
Aluminum	SB	33,000	-	-	-	-	-	-	-	7,650
Antimony	SB	N/A	-	-	-	-	-	-	-	2.4 J
Arsenic	7.5 or SB	3 - 12	-	-	-	-	-	-	-	3.84 J
Barium	300 or SB	15 - 600	-	-	-	-	-	-	-	43.4
Beryllium	0.16 or SB	0 - 1.75	-	-	-	-	-	-	-	0.258 J
Cadmium	1 or SB	0.1 - 1	-	-	-	-	-	-	-	0.27 J
Calcium	SB	130 - 35,000	-	-	-	-	-	-	-	19,000
Chromium	10 or SB	1.5 - 40	-	-	-	-	-	-	-	9.74
Cobalt	30 or SB	2.5 - 60	-	-	-	-	-	-	-	3.83
Copper	25 or SB	1 - 50	-	-	-	-	-	-	-	24.3
Iron	2000 or sb	2,000 - 550,000	-	-	-	-	-	-	-	15,000
Lead	400 [4]	200-500	-	-	-	-	-	-	-	13.5
Magnesium	SB	100 - 5,000	-	-	-	-	-	-	-	6,580
Manganese	SB	50 - 5,000	-	-	-	-	-	-	-	925 J
Mercury	0.1	0.001 - 0.2	-	-	-	-	-	-	-	0.038 J
Nickel	13 or SB	0.5 - 25	-	-	-	-	-	-	-	26.9 J
Potassium	SB	8,500 - 43,000	-	-	-	-	-	-	-	627
Selenium	2 or SB	0.1 - 3.9	-	-	-	-	-	-	-	0.28 J
Silver	SB	N/A	-	-	-	-	-	-	-	0.78 J
Sodium	SB	6,000 - 8,000	-	-	-	-	-	-	-	97.6 J
Thallium	SB	N/A	-	-	-	-	-	-	-	
Vanadium	150 or SB	1 - 300	-	-	-	-	-	-	-	15.1
Zinc	20 or SB	9 - 50	-	-	-	-	-	-	-	67.7
Polycyclic Aromatic Hydrocarbons (ug/kg)										
Acenaphthene	50,000	NA						750 J	2,800	
Acenaphthylene	41,000	NA						540 J		
Anthracene	50,000	NA						710 J	580 J	
Benzo(a)anthracene	224	169 - 59,000	560 J	850 J	730 J	970 J		1,800	3,600	630 J
Benzo(a)pyrene	61	165 - 220	720 J	1,400	1,100 J	1,400 J		2,800	8,800	1,000 J
Benzo(b)fluoranthene	1,100	15,000 - 62,000	1,300 J	2,600	2,200	2,900		4,300	12,000	1,900
Benzo(g,h,i)perylene	50,000	900 - 47,000		1,600	1,200 J			3,200	9,800	1,500
Benzo(k)fluoranthene	1,100	300 - 26,000		950 J	800 J	930 J		1,100 J	3,400	
Chrysene	400	251 - 640	790 J	1,300	1,200 J			2,200	4,300	1,000 J
Dibenzo(a,h)anthracene	14	NA						850 J	2,300 J	430 J
Fluoranthene	50,000	200 - 166,000	530 J	670 J	670 J	800 J		2,800	3,800	640 J
Fluorene	50,000	NA						910 J	560 J	
Indeno(1,2,3-cd)pyrene	3,200	8,000 - 61,000	620 J	1,600	1,200 J	1,500 J		3,200	10,000	1,200 J
Naphthalene	13,000	NA						1,900	580 J	
Phenanthrene	50,000	NA						5,000	3,200	
Pyrene	50,000	145 - 147,000	710 J	650 J				4,100	4,000	620 J
Total BaP equivalent[5]	NA	NA		2,024	1,537			4,895	14,503	2,242
Total PAHs	500,000***	NA		11,620	9,100			36,160	69,720	8,920

Notes: (see page 3)

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TABLE 2-3
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - APRIL 2004 SAMPLING
SUBSURFACE INVESTIGATION
FORMER INGERSOLL RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (feet bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2]	SB-GT-03/04 2 to 10 4/9/2004	SB-X1 (SB-GT-03/04) 2 to 10 4/9/2004	SB-GT-05 2 to 8 4/9/2004	SB-GT-06/07 5 to 10 4/12/2004	SB-GT-07 1 to 5 4/12/2004	SB-GT-08 2 to 16 4/13/2004	SB-GT-09/10 2 to 10 4/14/2004	SB-GT-11 2 to 10 4/14/2004
pH										
pH	NA	NA	7.86	8.00	7.03	8.72	7.39	7.5	8.09	7.72
TAL Inorganic Analytes (mg/kg)										
Aluminum	SB	33,000	5,620	6,960	4,500	10,600	11,400	6,030	5,730	5,730
Antimony	SB	N/A	3.7 J	2.5 J	3.3 J	4.2 J	2.8 J	8.36 J	3 J	2.7 J
Arsenic	7.5 or SB	3 - 12	3.67 J	3.0 J	2.17	4.06	1.84	3.39	2.97	1.58
Barium	300 or SB	15 - 600	30.5	36.1	17.8 J	42.4	22.3	29.2	27.8	26.9
Beryllium	0.16 or SB	0 - 1.75	0.2 J	0.24 J	0.12 J	0.252 J	0.18 J	0.1 J	0.19 J	0.206 J
Cadmium	1 or SB	0.1 - 1	0.21 J	0.18 J	0.22 J	0.15 J	0.13 J	0.26 J	0.16 J	0.07 J
Calcium	SB	130 - 35,000	20,900	32,000	1020	47,700 J	1,620 J	3,010 J	69,400 J	1,460 J
Chromium	10 or SB	1.5 - 40	8.63	8.0	9.38	9.24	8.06	43.4 J	7.19	5.79
Cobalt	30 or SB	2.5 - 60	4.49	3.5	1.73	4.75	1.96 J	2.77 B	3.94 J	3.33 J
Copper	25 or SB	1 - 50	20.7	22.5	27.3	30.1 J	10.4 J	73 J	17.5 J	9 J
Iron	2000 or sb	2,000 - 550,000	12,000	14,400	28,800	14,200	8,900	18,100	10,600	10,300
Lead	400[4]	200-500	8.48	20.7	11.7	8.64 J	14.2 J	52.3 J	5.87 J	9.44 J
Magnesium	SB	100 - 5,000	5,580	8,220	587	12,100 J	721 J	674 J	28,000 J	1,180 J
Manganese	SB	50 - 5,000	432 J	406 J	260 J	531	95.6	322	465	184
Mercury	0.1	0.001 - 0.2	0.03		0.032 J			0.071	0.038 J	0.03 J
Nickel	13 or SB	0.5 - 25	13.2 J	14.5	22 J	15	6.4	46.7	10.2	10.1
Potassium	SB	8,500 - 43,000	620	726	421 J	683	544	306 J	668	705
Selenium	2 or SB	0.1 - 3.9	0.33 J	0.66 J	0.17 J	0.46 J	0.21 J	0.24 J	0.47 J	0.21 J
Silver	SB	N/A		0.69 J	0.6 J	0.88 J	0.82 J	1.07		
Sodium	SB	6,000 - 8,000	184 J	390 J	66 J	72.1 J	88.2 J	72.4 J	85.4 J	104 J
Thallium	SB	N/A								
Vanadium	150 or SB	1 - 300	9.43	12.0	9.91	10.2	12.8	7.98	7.95	10.7
Zinc	20 or SB	9 - 50	53.8	64.7	14.5	60.9 J	14.4 J	75.9 J	62.5 J	19.8 J
Polycyclic Aromatic Hydrocarbons (ug/kg)										
Acenaphthene	50,000	NA								
Acenaphthylene	41,000	NA								
Anthracene	50,000	NA	86 J	52 J						
Benzo(a)anthracene	224	169 - 59,000	100 J	180 J	4,700 JD	58 J	2,300 D	4,600		1,000 J
Benzo(a)pyrene	61	165 - 220	83 J	150 J	8,600 D		3,400 D	8,000		1,700
Benzo(b)fluoranthene	1,100	15,000 - 62,000	160 J	260	15,000 D	66 J	10,000 D	15,000		3,000
Benzo(g,h,i)perylene	50,000	900 - 47,000			11,000 D		7,000 D	8,200		2,000
Benzo(k)fluoranthene	1,100	300 - 26,000			4,800 JD		2,800 D	3,600		820 J
Chrysene	400	251 - 640	120 J	190 J	7,400 D	76 J	4,900 D	7,000		1,700
Dibenzo(a,h)anthracene	14	NA			2,800 JD		1,600 D	2,200		
Fluoranthene	50,000	200 - 166,000	226 J	360	4,500 JD		2,700 D	5,500		1,300
Fluorene	50,000	NA				93 J				
Indeno(1,2,3-cd)pyrene	3,200	8,000 - 61,000		110 J	8,700 D		6,400 D	8,000		1,800
Naphthalene	13,000	NA								
Phenanthrene	50,000	NA	190 J	170 J		190 J	520 JD	950 J		320 J
Pyrene	50,000	145 - 147,000	170 J	280	4,900 JD	140 J	1,900 D	5,200		1,300
Total BaP equivalent[5]	NA	NA			16,224		9,959	12,680		2,497
Total PAHs	500,000***	NA			72,400		43,520	68,250		14,940

Notes: (see page 5)

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TABLE 2-3
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - APRIL 2004 SAMPLING
SUBSURFACE INVESTIGATION
FORMER INGERSOLL RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Notes:

Shaded Sample locations represent samples taken of the fill materials. Unshaded sample locations represent samples of native soils.
Only those analytes detected at a minimum of one location are shown.
Blank space indicates analyte was not detected.
Shaded concentrations exceed TAGM values for Pest/PCBs, SVOCs, and VOCs.
Shaded TAL Inorganic Analytes exceed upper range of Eastern USA Background Concentrations and TAGM values.
Bold/Italic SVOC results exceed upper limit of Urban Soils Background Range for PAHs.
(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.
(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.

(3) SVOCs background from Background Soil Concentrations of Poly Aromatic Hydrocarbons (PAHs), Urban Soils (U.S. and other), Toxicological Profile for PAHs, US Dept. of Health and Human Services, August 1995.

(4) USEPA Region 3 Soil Screening Level.

(5) Total BaP equivalent - Benzo (a) pyrene equivalent is calculated by multiplying the following individual PAH concentrations by their multiplier (#) and summing the results. Benzo (a) pyrene (1.00); Dibenzo (a,h) anthracene (1.00); Benzo (a) anthracene (0.10); Benzo (b) fluoranthene (0.10); Ideno (1,2,3-cd) pyrene (0.10); Benzo (k) fluoranthene (0.01); Chrysene (0.01).
*** - The Soil Cleanup Objective refers to the sum of all SVOCs.
J - Indicates and estimated value.
B - Aanlyte detected in method or trip blank.
D - indicates a result detected in a secondary dilution factor.
NA indicates Not Applicable
- indicates Not Analyzed

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- Elevated concentrations (above TAGM cleanup objectives) of arsenic, cadmium, calcium, chromium, copper and mercury are located sporadically throughout the fill.

2.3 Risk Assessment Results

A human health risk assessment and a fish and wildlife impact analysis were performed for the Site to evaluate the impacts to receptor populations exposed, or potentially exposed to site COPECs. Based on existing conditions (without remediation), there is a potential for short-term exposure to contaminated surface soils via dermal contact or ingestion. Exposure to COPECs identified in foundry sands and subsurface soils is possible, if engaged in intrusive activities.

A risk assessment based on the proposed Site remediation identified construction workers as the only population that could be exposed to Site COPECs. Potential exposure to soils and groundwater could be expected during construction activities but would be mitigated with implementation of a site-specific health and safety plan (HASP).

Based on the fish and wildlife impact analysis described in the Remedial Investigation (RI), selected COPECs found in Site soils may potentially cause adverse effects to the Eastern cottontail rabbit which was used as the baseline ecological receptor. However, with the exception of arsenic the magnitude of risk based on the concentrations of the selected COPECs found in soils is not great. There was no risk associated with the Site groundwater due to attenuation and dilution as water recharges to the Cohoctan River.

2.4 Remedial Action Objectives

A qualitative human health and ecological risk assessment was performed to evaluate potential for exposure to Site contaminants. The primary remedial action objective for the Site is to evaluate and select a remedy for the Site that supports the planned redevelopment and reduces the potential risks posed by Site soils and fill.

Figure 2-2 illustrates the footprint for the structure and associated infrastructure proposed for the Site. Within the construction footprint, the risk assessment confirmed that surface and

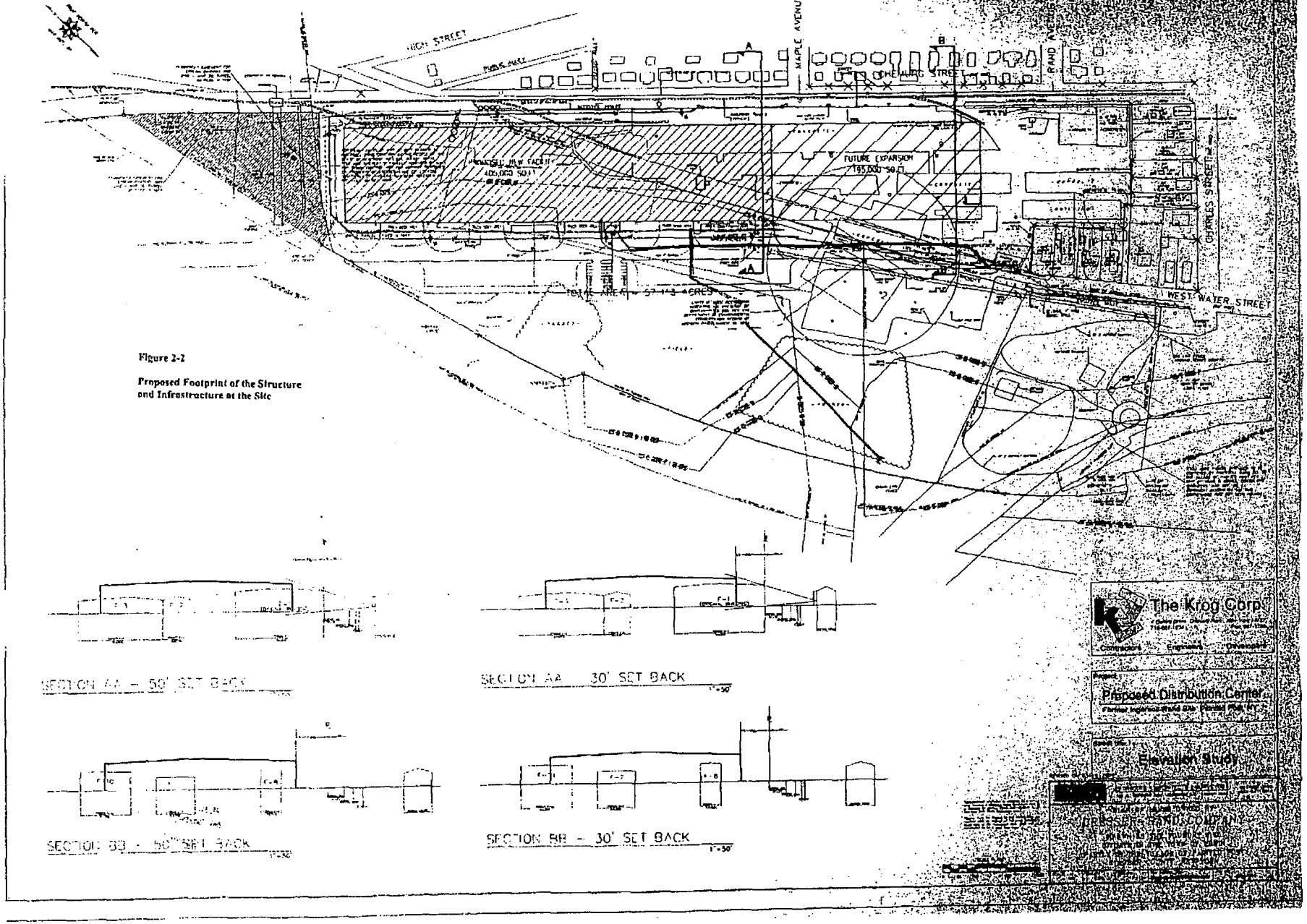

Figure 2-2

Proposed Footprint of the Structure and Infrastructure at the Site

subsurface fill material, which will be handled in grading the Site and excavating for footings or Site infrastructure, poses a potential risk for on-site workers. As a result, soil management protocols are necessary to limit the potential for exposure of on-site workers to contaminated fill materials. The proposed protocols are presented in Appendix A and include procedures for determining what materials will be returned to the Site for use once excavated and what must be sent for off-site disposal.

Outside the construction areas, surface soil sampling has confirmed that limited contamination is present in the northernmost treed area of the Site. Therefore, no remedial action is proposed in this area.

Results of soil and groundwater sampling has confirmed that contaminants present in the fill have not migrated into native soils or groundwater, therefore no remedial action is proposed for these media.

The risk assessment confirmed that direct contact with contaminated surface soils poses a risk to the public and/or on-site workers. Therefore, on-surface fill materials are identified as requiring remediation.

Based on proposed construction activities 25,600 cubic yards of fill material are affected. The following section describes the evaluation of potential remedial alternatives for this volume of fill.

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Identification of Remedial Alternatives

SECTION 3

3.1 General Response Actions

In accordance with the October 2003 legislation outlining Brownfields Cleanup Program requirements, until soil cleanup numbers are developed, site owners are required to evaluate both remedies that allow unrestricted site use as well as remedies that rely upon institutional controls or engineering controls (IC/ECs). Remedies available to provide unrestricted use of the site include excavation and off-site disposal of all fill materials on-site, off-site disposal of fill materials excavated during construction only, and in-situ or ex-situ treatment of the contaminated fill. Treatment technologies potentially applicable for the contaminants associated with site include: solidification/stabilization, bioremediation, phytoremediation, chemical oxidation, electrokinetic separation and soil flushing. Restricted use remediation of the site can be accomplished by providing soil cover over all areas of the site where direct contact will not be precluded by the presence of either proposed buildings or pavement. The following section describes each of these alternatives.

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Description of Remedial Alternatives

SECTION 4

4.1 Unrestricted Use Remedies

Excavation and Off-site Disposal

This alternative involves excavation of fill materials and off-site transport and placement in an appropriately permitted secure landfill. Two options exist under this alternative: excavation and off-site disposal of all fill materials, or disposal of only those fill materials encountered during construction for Site infrastructure. The cost for off-site disposal of all Site fill and then backfilling and regrading before Site construction activities begin would make the cost for Site development prohibitive, and thus will not be considered further.

Treatment Technologies

Solidification/Stabilization (S/S) involves physically binding or enclosing the site contaminants within a stabilized mass (solidification), or inducing chemical reactions between the stabilizing agent and the contaminants to reduce their mobility (stabilization). S/S can be applied in-situ or ex-situ. The target contaminant group for in-situ S/S is generally inorganics and thus would not address the PAHs. The In-Situ Vitrification (ISV) process can destroy or remove organics and immobilize most inorganics in contaminated soils, sludge, or other earthen materials. The process has been tested on a broad range of VOCs and SVOCs, other organics including dioxins and PCBs, and on most priority pollutant metals and radionuclides. However, future usage of the site may "weather" the materials and affect their ability to maintain immobilization of contaminants and most processes result in a significant increase in volume (up to double the original volume). In addition, the solidified material would hinder future site uses. As a result S/S is considered not applicable for remediation of this site and will not be further considered.

Bioremediation/Bio-augmentation describes the activity of naturally occurring or inoculated microbes stimulated by circulating water-based solutions through the contaminated soils to enhance in situ biological degradation of organic contaminants or immobilization of inorganic contaminants. Nutrients, oxygen, or other amendments may be used to enhance bioremediation and contaminant desorption from subsurface materials. The contaminant groups treated most often are PAHs, non-halogenated SVOCs (not including PAHs), and BTEX. Remediation of metals with microbial techniques is in the experimental stage, with limited data/guidance. Bioleaching uses microorganisms to solubilize metal contaminants either by direct action of the bacteria, as a result of interactions with metabolic products, or both. Bioleaching can be used in-situ or ex-situ to aid the removal of metals from soil. Because of bioremediation's limited applicability for treating recalcitrant PAHs and metals, and the potential for the on-site metals concentrations to be toxic to the microorganisms, this treatment technology is considered not applicable for remediation of this site and will not be considered further.

Phytoremediation is a process that uses plants to remove, transfer, stabilize, or destroy contaminants in soil, sediment, and groundwater. The mechanisms of phytoremediation include enhanced rhizosphere biodegradation, which takes place in soil or groundwater immediately surrounding plant roots; phytoextraction (also known as phytoaccumulation), the uptake of contaminants by plant roots and the translocation/accumulation of contaminants into plant shoots and leaves; phytodegradation, the metabolism of contaminants within plant tissues; and phytostabilization, the production of chemical compounds by plants to immobilize contaminants at the interface of roots and soil. Phytoremediation applies to all biological, chemical, and physical processes that are influenced by plants (including the rhizosphere) and that aid in cleanup of the contaminated substances. Plants can be used in site remediation, both through the mineralization of toxic organic compounds and through the accumulation and concentration of heavy metals and other inorganic compounds from soil into aboveground shoots. Phytoremediation may be applicable for the remediation of metals, pesticides, solvents, explosives, crude oil, PAHs, and landfill leachates. Some plant species have the ability to store metals in their roots. As the roots become saturated with metal contaminants, they can be harvested. Hyper-accumulator plants may be able to remove and store significant amount of metallic contaminants. Currently, trees are under investigation to determine their ability to remove organic contaminants from ground water, translocate and transpiration, and possibly

metabolize them either to CO2 or plant tissue. The depth of the treatment zone varies based on the plants used in phytoremediation, but in most cases, it is limited to shallow soils. High concentrations of some contaminants can be toxic to plants. In addition, the process occurs seasonally. Since different planting materials would be required for each group of site contaminants, this process likely requires many seasons to remediate to non-risk concentrations, may not consistently remove materials from across the site and with depth, and products may be mobilized into groundwater or bioaccumulated in animals. This treatment technology is considered not applicable for remediation of the site and will not be considered further.

Chemical Oxidation chemically converts hazardous contaminants to non-hazardous or less toxic compounds that are more stable, less mobile, and/or inert. The oxidizing agents most commonly used are ozone, hydrogen peroxide, hypochlorites, chlorine, and chlorine dioxide. This technology can be applied in-situ or ex-situ. In-situ chemical oxidation (ISCO) using permanganate for soil and groundwater treatment and has been demonstrated at a number of sites on the following organics: chlorinated solvents (such as trichloroethylene [TCE]), naphthalene, and pyrene. Fenton's Reagent can be used to treat a wide range of organic contaminants in soil and groundwater, including chlorinated solvents, petroleum hydrocarbons, semi-volatile organic compounds (SVOCs), and pesticides. ISCO has also been used to remediate polyaromatic hydrocarbons (PAHs), petroleum products, and ordnance compounds. Chemical treatment may be used to solubilize contaminants from the most contaminated fraction of the soil. Many processes manipulate the acid/base chemistry of the slurry to leach contaminants from the soil. Oxidizing and reducing agents (e.g., hydrogen peroxide, sodium borohydride) provide yet another option to aid in solubilization of metals since chemical oxidation/ reduction can convert metals to more soluble forms. Finally, surfactants may be used in extraction of the metals from soil. Because different chemicals would be required to treat each contaminant group, and application is limited by the ability of the oxidants to reach the contaminants, this treatment technology is considered not applicable for remediation of this site and will not be considered further.

Electrokinetic Separation relies upon the application of a low-intensity direct current through the soil between ceramic electrodes that are divided into a cathode array and an anode array. This mobilizes charged species, causing ions and water to move toward the electrodes. Metal

ions, ammonium ions, and positively charged organic compounds move toward the cathode. Anions such as chloride, cyanide, fluoride, nitrate, and negatively charged organic compounds move toward the anode. The current creates an acid front at the anode and a base front at the cathode. This generation of acidic condition in-situ may help to mobilize sorbed metal contaminants for transport to the collection system at the cathode. Concentrated (migrated) contaminants are then removed for treatment or can be treated in treatment walls as they migrate. The polarity of the electrodes is reversed periodically, which reverses the direction of the contaminants back and forth through treatment zones. Electrokinetics has been used for decades in the oil recovery industry and to remove water from soils, but in-situ application of electrokinetics to remediate contaminated soil is new. Recently, attention has focused on developing in-situ electrokinetic techniques for the treatment of low permeability soils, which are resistant to remediation with traditional technologies because of their low hydraulic conductivity. Because of its limited effectiveness for non-polar organic contaminants, such as PAHs, because they will not migrate with the current, this treatment technology is considered not applicable for remediation of this site and will not be considered further.

In-Situ Soil Flushing is used to mobilize metals by leaching contaminants from soils so that they can be extracted without excavating the contaminated materials. An aqueous extracting solution is injected into or sprayed onto the contaminated area to mobilize the contaminants, usually by solubilization. After being contacted with the contaminated material, the extractant solution is collected using pump-and-treat methods for disposal or treatment and reuse. Common extracting agents include acids/bases, chelating agents, oxidizing/reducing agents and surfactants cosolvents. This process can be applied in-situ or ex-situ (soil washing). The target contaminant groups for soil washing are SVOCs, fuels, and heavy metals. The technology can be used on selected VOCs and pesticides. The technology offers the ability for recovery of metals and can clean a wide range of organic and inorganic contaminants from coarse-grained soils. However, complex mixture of contaminants in the soil (such as a mixture of metals, nonvolatile organics, and SVOCs) and heterogeneous contaminant compositions throughout the soil mixture make it difficult to formulate a single suitable washing solution that will consistently and reliably remove all of the different types of contaminants. There is additionally limited data regarding flushing for PAHs. For these reasons, this treatment technology is considered not applicable for remediation of this site and will not be considered further.

4.2 Restricted Use Remedies

In order to eliminate potential exposure risks associated with direct contact with site fill material, the entire Site can be covered as part of site redevelopment. The cover system would be placed directly on top of the regraded on-site fill material and will include clean soil for outdoor, vegetated areas, asphalt for roads and parking lots, or concrete for sidewalks, buildings and heavy use areas. Responsibility for monitoring and maintenance of the site cover system is delineated in the Brownfield Cleanup Agreement. An Operation, Monitoring, and Maintenance (OM&M) Work Plan for implementation following remediation of the site is included in Appendix C.

The proposed cover system has been designed to be protective of human health and the environment. The primary exposure pathway for contaminants at the site (metals and PAHs in soil) is via direct contact. The proposed plan of covering the on-site fill material will eliminate the potential for direct contact with soil and is therefore protective of human health and the environment. Groundwater data indicate that the contaminants present at the site are not impacting groundwater quality.

Exposure to the soil fill piles during construction will be precluded for on-site workers and trespassers through covering. Exposure to fill at the surface would be precluded for future on-site workers through covering. The potential for exposure through invasive on-site construction activities would be managed by implementation of the protocols of the Soil/Fill Management Plan.

Following redevelopment, the site will not present a significant risk to wildlife because the site will be completely covered with clean fill, asphalt or concrete. Additionally, although some wildlife may occasionally use the site, the presence of human activities will inhibit significant use of the site by wildlife.

Preparation of Site Surface

The site will require grading prior to cover placement activities. The surface will be graded to a regular topographic surface as planned for redevelopment with grading completed such that precipitation events will not cause the formation of standing water. All trees, shrubs, stumps, roots, brush, masonry, rubbish, scrap, debris, pavement, curbs, fences and miscellaneous structures in the construction areas will either be buried, or removed and disposed of off-site at a permitted disposal facility. Prior to placement of the cover soil, all protruding material will be removed from the ground surface. Burning shall not be allowed on the site.

The placement of the cover material may occur as portions of the site are developed or after construction of the proposed structures. Under either scenario, the site will be hydroseeded to limit dust generation from the soil/fill that has not yet been covered.

Soil

In areas that will not receive significant equipment or vehicular use, the minimum cover system will be composed of documented clean off-site soil tested in accordance with Section A.4 of the Soil/Fill Management Plan and found to contain constituent concentrations less than those specified in NYSDEC TAGM 4046. The completed soil cover will be of a thickness required to maintain sufficient vegetative cover to prevent exposure to the on-site fill material. The minimum soil thickness must be 12 inches.

Berms or mounds may be composed of excavated soil/fill. In areas in which trees and shrubs will be planted, the berms or mounds will be of sufficient thickness to allow the excavation of only clean fill to a depth sufficient to plant the tree or shrub root ball. Unless additional soil is required for the plantings, the soil cover thickness will be 12 inches. The soil used to cover the berms or mounds will contain sufficient organic material to allow the growth of trees and/or shrubs and will be of sufficient strength to support trees and/or shrubs at their maximum height. Fill containing lumps, pockets, or concentrations of silt or clay, rubble, debris, wood or other organic matter will not be acceptable. Fill containing unacceptable material shall be removed and disposed appropriately.

Topsoil used for the final cover shall meet the following general specifications:

1. Fertile, friable, natural loam surface soil, capable of sustaining plant growth, and free of clods of hard earth, plants or roots, sticks or other extraneous material harmful to plant growth. The topsoil shall be well-graded with the following approximate analysis:

   a.

Sieve Size	Percent Passing by Weight
3-inch	100
No. 4	>75
No. 200	>30
0.002 mm	<20

   b. pH 5.5 to pH 7.6.

   c. Minimum organic content of 2.5 percent as determined by ignition loss.

   d. Soluble salt content not greater than 500 ppm.

2. Before delivery, soil samples will conform to the criteria specified in Sections 2.3 and 2.4 in the Soil/Fill Management Plan.

Grass seed used for final cover shall meet the following general specifications:

1. The grass seed mixture will be fresh, clean, new-crop seed complying with the tolerance for purity and germination established by the Official Seed Analysts of North America.

2. The entire ground surface disturbed by construction operations shall be seeded with 100 lbs/acre of seed conforming to the following:

   a.

Name of Grass	Application Rate (lbs/acre)	Purity (%)	Germination (%)
Perennial Ryegrass	10	95	85

Kentucky Bluegrass	20	85	75
Strong Creeping Red Fescue	20	95	80
Chewings Fescue	20	95	80
Hard Fescue	20	95	80
White Clover	10	98	75

b. Germination and purity percentages should equal or exceed the minimum seed standards listed. If it necessary to use seed with a germination percentage less than the minimum recommended above, the seeding rate will be increased accordingly to compensate for the lower germinations.

c. Weed seed content will be less than 0.25 percent and free of noxious weeds.

d. All seed shall be rejected if the label lists any of the following grasses:

   1) Sheep Fescue

   2) Meadow Fescue

   3) Canada Blue

   4) Alta Fescue

   5) Kentucky 31 Fescue

   6) Bent Grass

3. In addition to the seed mixtures listed above, one bushel per acre of oats or rye seed shall be sowed over the entire area, including drainage ditches, to provide a quick shade cover and to prevent erosion during turf establishment.

Asphalt

The cover system in areas that will become roads, sidewalks, and parking lots will consist of a minimum of two inches of asphalt that will be placed over the soil/fill material at the site. The asphalt will be placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area regraded to a regular surface.

Concrete

The cover system in areas that will become slab-on-grade structures will consist of a minimum of two inches of concrete that will be placed above the soil/fill material. The concrete will be placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence. Concrete may also be used instead of asphalt for roads, sidewalks, and parking lots. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area regraded to a sufficient regular surface.

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Remedial Evaluation Criteria

SECTION 5

The criteria used to evaluate the selected remedial technologies include the following:

- Short-term effectiveness and impacts
- Long-term effectiveness and permanence
- Implementability
- Reduction of toxicity, mobility and volume
- Conformance to standards, criteria and guidance
- Overall Protectiveness
- Cost

The issues considered for each critiera are discussed blow.

Short term Effectiveness and Impacts - The effectiveness of alternatives in protecting human health and the environment during construction and implementation of the remedial action is evaluated by this criterion. Short-term effectiveness is assessed by protection of the community, protection of workers, environmental impacts, and time until protection is achieved.

Long term Effectiveness and Permanence - This criterion evaluates the long-term protection of human health and the environment at the completion of the remedial action. Effectiveness is assessed with respect to the magnitude of residual risks; adequacy of controls, if

any, in managing residuals or untreated wastes that remain at the Site; reliability of controls against possible failure, and potential to provide continued protection.

Reduction of Toxicity, Mobility, and Volume - This evaluation criterion prioritizes those remedial actions that permanently and significantly reduce toxicity, mobility, or volume of the hazardous substances. This criterion is satisfied when the treatment is used to reduce the principal threats at a site through destruction of toxic contaminants, irreversible reduction in contaminant mobility, or reduction of total volume of contaminated media.

Implementability - This assessment criterion evaluates the technical and administrative feasibility of implementing alternatives and the availability of services and materials.

Compliance with Standards, Criteria, and Guidelines - This threshold addresses whether or not a remedy will meet regulatory environmental limits.

Overall Protection of Human Health and the Environment - This is a threshold assessment, which addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled. This evaluation allows for consideration of whether an alternative poses any unacceptable short term or cross-media impacts.

Cost - The estimated capital and operation and maintenance (O&M) costs.

These criteria serve to provide a basis of comparison and allow for ranking of the alternatives by preference and acceptability.

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Detailed Evaluation of Restricted Use Remedial Alternatives

SECTION 6

Potential remedial technologies that could reasonably be developed for the Site are identified and evaluated in this section. No unrestricted Site use alternatives are considered feasible for redevelopment of the Site. Only remedies that accomplish restricted Site use are evaluated in this detailed evaluation of remedial alternatives.

Alternative 1 – Restricted Site Use - Excavation and Off-Site Disposal – Cover System

Alternative 2 – Restricted Site Use – Excavation Using Soil/Fill Management - Cover System

6.1 Alternative 1 - Excavation and Off-Site Disposal – Cover System

This alternative involves the removal of all excavated fill and contaminated soils and off-site transport and placement in an appropriately permitted secure landfill, backfill placement and installation of a cover system of either asphalt, concrete or a minimum of one-foot of clean fill. A discussion of the evaluation criteria for this alternative follows.

Excavation of the waste and subsequent backfilling and re-grading would effectively eliminate the source of the contamination. Short-term risks of exposure to construction personnel could be adequately managed through the appropriate use of personal protective equipment (PPE), and health and safety protocols. Disposal of the removed material at an approved off-site facility would effectively eliminate the human health risks posed by the Site and would thus

provide a permanent remedy for the site. This alternative does pose a slight potential risk of exposure to the public during transport to the disposal facility if a truck were to spill its contents.

The time to implement this alternative (i.e., excavate and remove the site's contaminated fill/soil) would be reasonable and is not anticipated to appreciably extend the timeline for site development. Excavation of the Site's waste material could be accomplished using standard construction equipment and techniques. Some time will be required to sample and characterize the soil/fill and obtain appropriate approvals for disposal. This alternative would reduce the mobility of the contaminants, but not the toxicity or volume. Under this alternative SSALs would be achieved and no long-term monitoring or special maintenance of the site will be required.

Table 6-1 presents the capital cost of this alternative. While this alternative is implementable and effective in achieving the remedial action objectives, the transportation and disposal cost of the excavated materials would be approximately $4.3 million dollars.

6.2 Alternative 2 – Excavation Using Soil/Fill Management - Cover System

This alternative involves excavation of soil/fill using a soil/fill management plan followed by the installation of a cover system of either asphalt, concrete or a minimum of one foot of documented clean fill covering the entire Site. No long-term monitoring is required. A discussion of the evaluation criteria for this alternative follows.

Implementation of any of the cover types would require appropriate grading of the fill material. Any short-term risk of exposure to construction personnel could be adequately managed through the use of personal protective equipment (PPE) and appropriate health and safety protocols. Short-term risk of exposure to trespassers during construction activities would be addressed through covering stockpiled soil/fill, temporary seeding of graded soil/fill areas and site security. Once the construction is complete and the Site is fully covered, the risk to on-site workers and the public will be eliminated and sustained through adequate protections and maintenance of the cover systems. Exposure risks to future construction workers would be

Table 6-1
Alternative 1 - Restricted Site Use Scenario
Off-Site Disposal of Excavated Fill

ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT	ESTIMATED UNIT PRICE	ESTIMATED BID AMOUNT
1	Excavation and Off-Site Disposal of Fill Material (1)	38,400	Tons	$70	$2,688,000
2	Off-Site Backfill Material For Foundations	1,600	CY	$12	$19,200
3	6" clean soil cover material (2)	25,300	CY	$15	$379,500
4	Misc. Environmental costs (3)	1	LS	$50,000	$50,000
Sub-Total					$3,136,700
20% Contingency					$627,300
Total Project Cost					**$3,764,000**

1) Assumes fill contains non-hazardous concentrations of PAHs and metals, above the Site-Specific Action Limits (SSALs)

2) A 6" topsoil layer will also be required to be placed above the clean soil barrier layer. It is assumed that this cost along with landscaping and restoration, is a necessary development cost for any site.

3) Misc costs include PID screeninig, health and safety plan development, site safety officer, decontamination units, site access control, NYSDEC coordination, and construction certification report preparation.

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adequately managed through the Soil/Fill Management protocols and appropriate health and safety protocols. The time to implement this alternative does not materially affect the construction schedule and standard readily available construction equipment and techniques would be utilized. This alternative would reduce the mobility of the contaminants, but not their toxicity or volume. The SSAL's would be achieved through implementation of the Soil/Fill Management Plan, since no excavated fill or soils with concentrations in excess of the SSAL's would be returned to the Site. The resulting Site condition would not pose a potential risk to human health provided the cover systems are appropriately maintained. Table 6-2 presents the capital cost of this alternative. The cost to implement this alternative is approximately $1.4 million in capital cost.

Table 6-2
Alternative 2 - Restricted Site Use Scenario
On-Site Reutilization of Excavated Fill with Cover System

ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT	ESTIMATED UNIT PRICE	ESTIMATED BID AMOUNT
1	Excavation and Off-Site Disposal of Fill Material (1)	1,920	Tons	$70	$134,400
2	Analytical Soil Sampling	256	Samples	$500	$128,000
3	6" clean soil cover material (3)	25,300	CY	$15	$379,500
4	Misc. Environmental costs (4)	1	LS	$70,000	$70,000
Sub-Total					$711,900
20% Contingency					$142,400
Total Project Cost					**$854,300**

1) Assumes 5% of excavated soils contain non hazardous concentrations of PAHs and metals, above the Site-Specific Action Limits (SSALs)

2) 25, 600 CY of excavated material sampled every 100 cubic yards for TCL VOCs, SVOCs, pesticides and PCBs, metals, and pH

3) A 6" topsoil layer will also be required to be placed above the clean soil barrier layer. It is assumed that this cost along with landscaping and restoration, is a necessary development cost for any site.

4) Misc costs include polyethylene sheeting for stockpiles/stockpile management, PID screening, health and safety plan development, site safety officer, decontamination units, site access control, NYSDEC coordination, and construction certification report preparation.

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Comparative Analysis of Remedial Alternatives

SECTION 7

This comparison of the alternatives evaluates the relative performance of each alternative with respect to each of the evaluation criteria: short-term effectiveness and impacts; long-term effectiveness and permanence; reduction of toxicity, mobility, and volume; implementability; compliance with standards, criteria, and guidelines; overall protection of human health and the environment, and cost. The advantages and disadvantages of the alternatives are identified so that trade-offs between the alternatives can be appropriately evaluated. Tables 6-1 and 6-2 provide the capital costs for each alternative.

Short-term Effectiveness and Impacts – Equivalent levels of potential exposure for workers exist under both alternatives. Short-term exposure risk would be minimal for the public for the excavation and disposal alternative.

Long-term Effectiveness and Permanence – The cover systems alternative would not remove the contaminant source, but with routine maintenance would be effective in long-term containment of the waste. The excavation and removal alternative would remove the contamination from the Site and thus be considered a permanent remedy.

Reduction of Toxicity, Mobility, and Volume – Both the alternatives would reduce the mobility of the contaminants. Neither alternative would reduce the toxicity, or volume of the contaminated fill.

Implementability – Both the alternatives are readily implementable with standard construction equipment and techniques.

Compliance with Standards, Criteria, and Guidelines – Both alternatives would be expected to achieve compliance with SSAL's.

Overall Protection of Human Health and the Environment – Both alternatives provide equivalent protection of human health or ecological receptors.

Cost – Capital cost for implementing the excavation and disposal remedial action for the Site were estimated as $4.3 million, as compared to $1.4 million for the cover system alternative.

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Recommended Approach

SECTION 8

8.1 Proposed Approach

Both of the restricted use alternatives provide comparable long-term effectiveness and overall protection to human health and the environment, but excavation and disposal at a properly permitted landfill increases the cost for Site development by almost $3 million.

As a result, based on an evaluation of the criteria for each alternative and review of the capital cost impact, the Excavation Using Soil/Fill Management Cover System Alternative would provide the best overall remedy for the Site. This alternative is able to provide effective long-term contaminant containment and be protective of both on-site and off-site potential receptors at a lower overall cost.

8.2 Soil/Fill Management Plan (SFMP)

During construction activities at the site, excavation of soil/fill material will be necessary for the construction of utility corridors. Excavation may also be necessary during the construction of footings for structures and for other activities including the planting of trees. Although a number of environmental investigations have been conducted at the Site to characterize the nature and extent of contamination, the nature of investigations does not allow for a 100 percent complete or accurate characterization. Therefore, it is possible that some quantity of unsuspected contamination may be encountered during redevelopment activities.

Soil management protocols are necessary to limit the potential for exposure of on-site workers to contaminated fill material. The soil handling protocols will also be necessary for assisting with the determination of whether soil/fill removed during excavation activities may be reused on-site or must be disposed off-site. The Soil/Fill Management Protocols are included in Appendix A.

8.3 Health and Safety

Invasive work performed at the Site will be performed in accordance with all applicable local, state, and federal regulations to protect worker health and safety. The Soil/Fill Management Protocols (Appendix A) describes recommended Health and Safety procedures for intrusive work activities of the Site.

All contractors performing redevelopment or maintenance activities involving intrusive work at the Site will be required to prepare a site-specific, activity-specific Health and Safety Plan. In order to facilitate the creation of an appropriate Health and Safety Plan by the contractor(s) performing work, the ranges of concentrations of contaminants detected in soil and groundwater samples collected during previous site investigations conducted by Malcolm Pirnie are shown in Tables 2-1, 2-2, and 2-3 respectively.

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References

SECTION 9

Allwash. *Environmental Cleanup Final Report.* February 1987.

Capsule Environmental Engineers, Inc. (CEE). *Site Assessment Report*. December 1985.

CEE. *Planned Remediation.* July 1987.

CEE. *Final Report Environmental Remediation.* November 28, 1988.

CEE. *Final Analytical Review* November 1, 1989.

CEE. *Subsurface Investigation Report.* February 9, 1993.

CEE. *Report of the Subsurface Evaluation of MW-2B- Additional Groundwater Quality Assessment Investigation.* August 1993.

CEE. *Focused Feasibility Study.* February 1994.

CEE. *Sampling and Analysis Plan for the Long Term Monitoring of the Site Groundwater Quality.* August 1994.

CEE. *1997 Annual Ground Water Monitoring Report.* September 1997.

Law Environmental. *Interim Stratigraphy Report for a Phase I Groundwater Quality Assessment.* January 1992.

Malcolm Pirnie, Inc. *Citizen Participation Plan for the Brownfield Cleanup Program Investigation of the former Ingersoll-Rand Foundry Site.* July 2004.

References

State of New York Department of Environmental Conservation. *Order on Consent.* December 31, 1986

State of New York Department of Environmental Conservation. *Record of Decision* March 1994.

Wenck Associates, Inc. *Groundwater Quality Assessment*. September 1992.

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Soil/Fill Management Protocols

APPENDIX A

The objective of this Soil/Fill Management Plan (SFMP) is to set guidelines for management of soil material during any activities, which would breach the cover system. The SFMP is a portion of the overall remedy, which addresses disturbance/use of any residually contaminated soil fill left on the Site, after other elements of the remedy have been implemented. This SFMP addresses environmental concerns related to soil/fill management. This SFMP is not intended to serve as a design document for construction activities related to redevelopment activities. It is the developer's responsibility to prepare a design that incorporates the requirements for cover and soil management as set forth in this SFMP.

A.1 Excavation and Handling of On-Site Soil/Fill

No excavation, grading or disturbance of the final vegetated soil cover or existing subgrade soil/fill shall be initiated prior to a minimum of three working days notification to the NYSDEC Region 8, Division of Environmental Remediation. A Professional Engineer with remedial investigation experience, representing the subject property owner or developer will oversee soil/fill excavations or disturbances. The excavation activities will be conducted in accordance with the protocols detailed herein.

All on-site soil/fill will be presumed to contain metals and PAHs and will be handled in accordance with the provisions of this SFMP. Although a number of environmental investigations have been conducted at the Site to characterize the nature and extent of contamination, the nature of investigations does not allow for a 100 percent complete or accurate characterization. It is possible that some quantity of unsuspected contamination may be encountered during redevelopment activities. Therefore, as a safeguard for unknown or

unsuspected contamination presence, during excavation, all soil/fill will be visually inspected for staining and will be field screened for the presence of volatile organic compounds (VOCs). A photoionization detector (PID) will be used to check for VOCs. Visual observation will be sufficient to identify stained soils. Stained soil is soil that is discolored, tinted, dyed, unnaturally mottled, or contains a sheen. Attachment II contains a Standard Operating Procedure for Soil Screening. Excavated soil/fill that is visibly stained or produces elevated PID readings (i.e., sustained 10 PPM or greater) will be considered potentially contaminated and stockpiled separately on-site for further assessment. The potentially contaminated soil/fill will be stockpiled (in maximum 100 cubic yard piles) on polyethylene sheeting and then sampled to determine its ultimate disposition; viz., reuse or off-site disposal. The stockpiled potentially contaminated soil/fill will also be completely covered using polyethylene sheeting to reduce particle runoff and entrain dust. Sampling and analysis will be completed in accordance with the protocols delineated in Section A.2. Soil/fill containing one or more constituents in excess of the site-specific action levels (SSALs) shown in Table A-1 will be transported off-site to a permitted waste management facility. Soil/fill awaiting analytical results or awaiting transportation will be stored continuously on-site under polyethylene sheeting.

Any soil/fill with a pH higher than 12.5 is considered hazardous and therefore must be properly disposed off-site. Additionally, any soil/fill with a pH greater than 9.0 but less than 12.5 may be reused on-site but only to fill in areas below grade. This soil/fill may not be used as backfill in utility trenches or to create berms or other above grade mounds. This soil/fill must also be covered with clean material in accordance with Section 3.2 of the Remedial Work Plan.

If buried drums or underground storage tanks are encountered during soil excavation activities, excavation will cease and the NYSDEC will be immediately notified. All drums and/or underground storage tanks encountered will be evaluated and the Owner will submit a removal plan for NYSDEC approval. Appropriately trained personnel will excavate all of the drums and/or underground storage tanks while following all applicable federal, state, and local regulations. Removed drums and underground storage tanks will be properly characterized and disposed off-site. The soil/fill surrounding the buried drums or underground storage tanks will be considered as potentially contaminated and will be stockpiled and characterized.

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TABLE A-1
SITE SPECIFIC ACTION LEVELS
SOIL/FILL HANDING PLAN
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection D	NYSDEC TAGM 4046[1]	Eastern USA Background Concentrations[2]	Maximum Concentration Detected[3]	Average Concentration Detected	Frequency of Detections	Proposed Site Specific Action Level (SSAL)
TAL Inorganic Analytes (mg/kg)						
Arsenic	7.5 or SB	3 - 12	14.50	5.25	30 / 31	50[4]
Cadmium	1 or SB	0.1 - 1	2.80	0.59	31 / 31	20[4]
Chromium	10 or SB	1.5 - 40	554	48.3	31 / 31	500[4]
Copper	25 or SB	1 - 50	327	43.2	31 / 31	200
Mercury	0.1	0.001 - 0.2	0.33	0.06	26 / 31	1.0[4]
Nickel	13 or SB	0.5 - 25	164	26.2	31 / 31	100
Total Cyanide	NA	NA	1.67	0.08	1 / 22	50[4]
Zinc	20 or SB	9 - 50	216	76.1	31 / 31	500
Pest/PCBs (µg/kg)						
Total Pesticides	10	NA	0.0	0	0 / 22	10,000[4]
Total PCBs (Surface - 1.0')	1,000	NA	2,400	413	3 / 7	1,000[4]
Total PCBs (Subsurface > 1.0')	10,000	NA	480	91	4 / 15	10,000[4]
Semi-Volatile Organic Compounds - SVOCs (µg/kg)						
Total SVOCs	500,000	NA	143,700	25,969	51 / 54	500,000[4]
Volatile Organic Compounds - VOCs (µg/kg)						
Total VOCs	10,000	NA	19.5	4.1	15 / 22	10,000[4]

Notes:

(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.

(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.

(3) Maximum concentration detected during the subsurface investigation (MPI, April 2004) and the remedial investigation (MPI, October

(4) Site Specific Action Levels for Hanna Furnace former Railroad Yard Area (Subparcel 1), Soil Fill Handling Plan, as prepared by Malcolm Pirnie, February 2002. Action levels were negotiated and approved by NYSDEC.

NA - Not Avaialable.

ND - Not Detected

Created by: BW Date: 10/25/2004
Checked by: KRM Date: 10/26//2004

All excavations or disturbances must be backfilled as soon as the work allows. Backfilled excavations must be covered with suitable cover material defined in Section 4.2 of the Remedial Action Work Plan) within ten working days of backfilling or as otherwise approved by the NYSDEC.

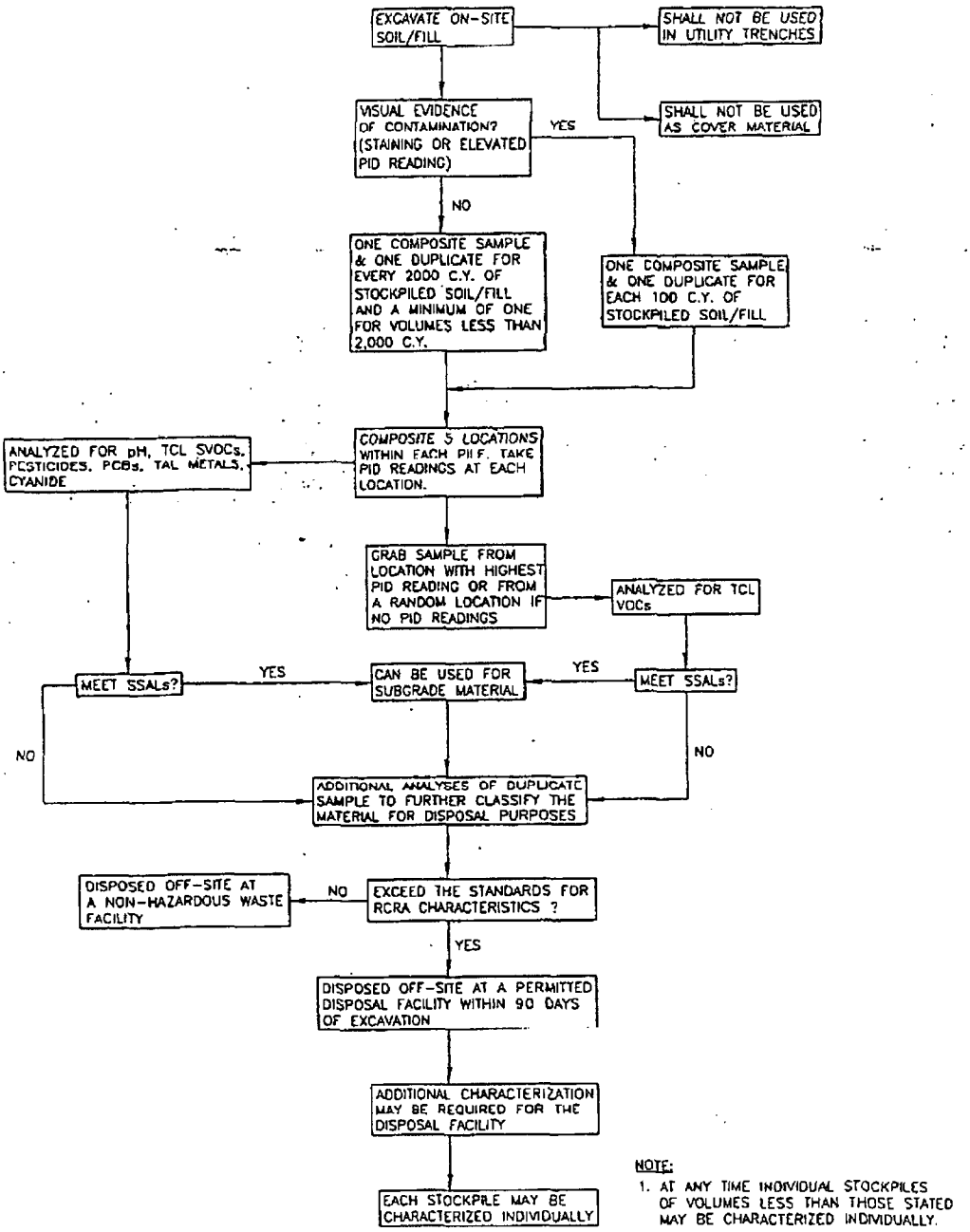
If no evidence of additional contamination is encountered through the screening during excavation activities, the excavated soil fill will be stockpiled as appropriate on site. No special provisions for separate handling are required other than the characterization defined in Section A.2.

Excavated or disturbed backfill may be used as subgrade, excavation backfill or berm construction following characterization performed in accordance with Section A.2 if it meets the SSAL's presented in Table A-1.

A.2 Soil/Fill Sampling and Analysis Protocol

A soil/fill characterization flow chart is provided as Figure A-1. As stated in Section A.1, all excavated soil/fill that exhibits evidence of additional contamination through screening (staining or elevated PID measurements) will be stockpiled separately and sampled and classified for reuse or disposal. One composite soil sample will be collected for each 100 cubic yards of soil. The composite sample will be collected in the manner described in the Standard Operating Procedures (SOPs) included in Attachment II from five locations within each stockpile. PID measurements will be recorded for each of the five composite sample locations, and one grab sample and one duplicate sample will be collected from the location with the highest PID measurement of the five composite locations. The composite sample will be analyzed by a NYSDOH ELAP-certified laboratory for Target Compound List (TCL) semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs), and the metals arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver plus cyanide using current NYSDEC Analytical Services Protocols (ASP). Additionally, pH will be analyzed using SW-846 Method 9045. The grab sample will be analyzed for TCL volatile organic compounds (VOCs).

FIGURE A-1
SOIL/FILL CHARACTERIZATION FLOW CHART



NOTE:

1. AT ANY TIME INDIVIDUAL STOCKPILES OF VOLUMES LESS THAN THOSE STATED MAY BE CHARACTERIZED INDIVIDUALLY.

Excavated soil/fill that exhibits no evidence of additional contamination (staining or elevated PID measurements) will also require characterization prior to use as subgrade or backfill at the site. Characterization samples will be collected and analyzed at a frequency of not less than one sample for 2000 cubic yards of soil/fill, and a minimum of one sample will be collected for volumes less than 2000 cubic yards. The characterization samples will be collected in accordance with the protocols described above; the sampling efforts shall consist of discrete samples for VOCs and composite samples collected from five locations for the remaining analytes.

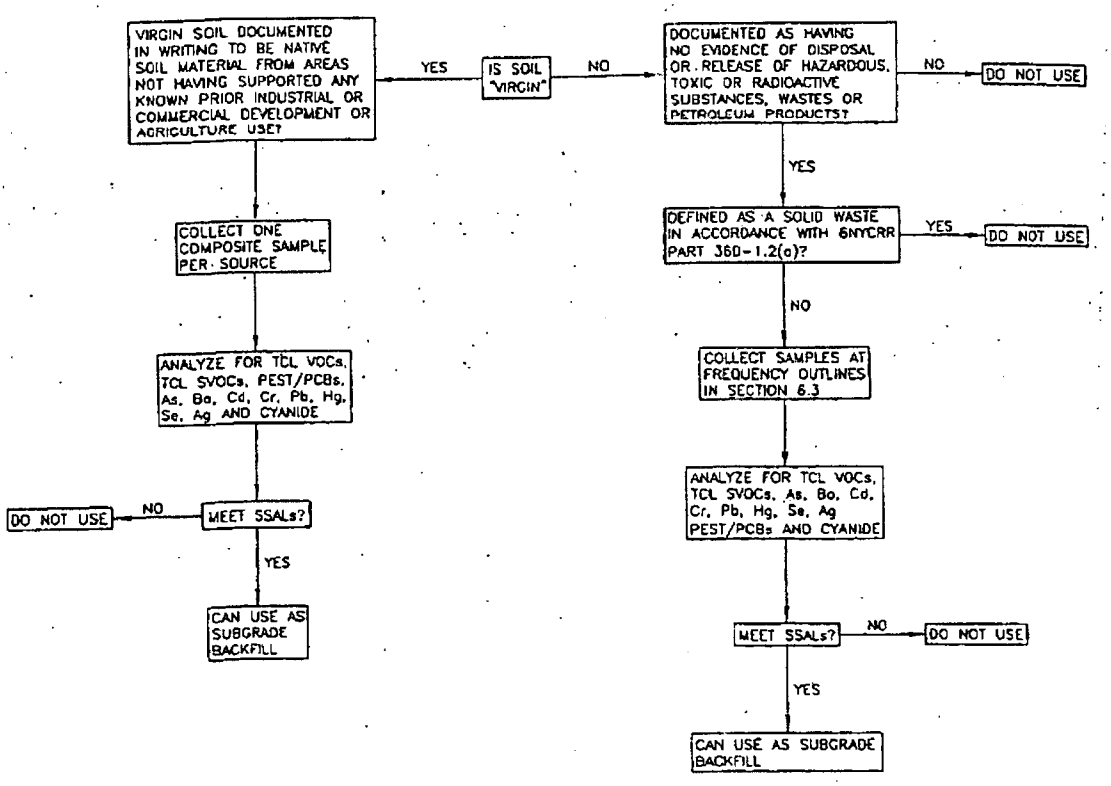
Any soil/fill that has been characterized and found to meet the SSALs may be reused as subgrade, excavation subgrade backfill, or for berm construction. If the analysis of the soil/fill samples reveals unacceptably high levels of any analytes (i.e., greater than one or more SSAL), additional analyses will be necessary to further classify the material for hazardous characteristics for disposal purposes. At a minimum, the duplicate sample will be analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) for the particular analytes that were detected at concentrations exceeding the SSALs. The duplicate sample may also be analyzed for RCRA Characteristics including reactivity, corrosivity, and ignitability. If the analytical results indicate that concentrations exceed the standards for either TCLP or RCRA Characteristic analysis, the material will be considered a hazardous waste and must be properly disposed off-site at a permitted disposal facility within 90 days of excavation. Additional characterization sampling for off-site disposal may be required by the disposal facility. To potentially reduce off-site disposal requirements/costs, the owner or site developer may also choose to characterize each stockpile individually.

A.3 Subgrade Material

Subgrade material used to backfill excavations or placed to increase site grades or elevation shall meet the following criteria (see Figure A-2):

- Excavated on-site soil/fill shall either exhibit no evidence of contamination (staining and/or elevated PID measurements) or, if evidence of contamination is present,

FIGURE A-2
SUBGRADE MATERIAL FLOW CHART



NOTE:
1. AT ANY TIME INDIVIDUAL STOCKPILES OF VOLUMES LESS THAN THOSE STATED MAY BE CHARACTERIZED INDIVIDUALLY.

analytical results of the soil/fill indicate that the contaminants are present at concentrations below the SSALs.

- Off-site borrow soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products.

- Off-site soils intended for use as site backfill cannot otherwise be defined as a solid waste in accordance with 6NYCRR Part 360-1.2(a).

- If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use.

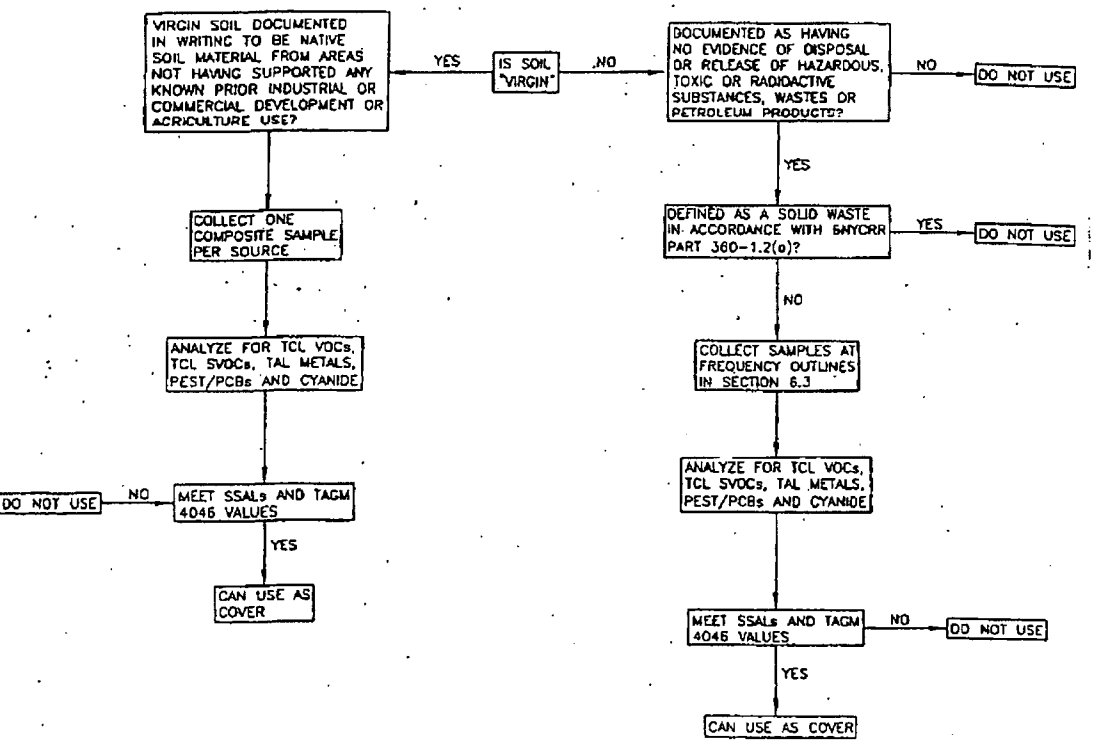
- Virgin soils should be subject to collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, SVOCs, pesticides, PCBs, and the metals arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver plus cyanide. The soil will be acceptable for use as backfill provided that all parameters meet the SSALs.

- Non-virgin source area soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are borrowed from a given off-site non-virgin soil source area and both samples of the first 1,000 cubic yards meet the SSALs, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the SSALs.

A.4 Final Cover

Surface coverage over the entire redeveloped parcel or subparcels will be required by the developer or owner as a pre-condition of occupancy. The purpose of the surface cover is to eliminate the potential for human contact with fill material. Surface coverage will consist of

FIGURE A-3
FINAL COVER MATERIAL FLOW CHART



NOTE:

1. AT ANY TIME INDIVIDUAL STOCKPILES OF VOLUMES LESS THAN THOSE STATED MAY BE CHARACTERIZED INDIVIDUALLY.

documented clean soil with vegetative cover, asphalt or concrete paving, or buildings with concrete floors.

The cover soil material shall meet the following criteria (see Figure A-3):

- Excavated on-site soil/fill shall not be used as cover material.
- Off-site borrow soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products.
- Off-site soils intended for use as site cover cannot otherwise be defined as a solid waste in accordance with 6NYCRR Part 360-1.2(a).
- If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use.
- Virgin soils should be subject to collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, SVOCs, pesticides, PCBs, and TAL metals plus cyanide. The soil will be acceptable for use as cover material provided that all parameters meet the NYSDEC recommended soil cleanup objectives included in TAGM 4046.
- Non-virgin source area soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are borrowed from a given off-site non-virgin soil source area and both samples of the first 1,000 cubic yards meet the TAGM 4046 criteria, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the TAGM 4046 criteria.
- To reduce the potential for disturbance of the soil cover material, berms or mounds composed of clean soil will be constructed in areas in which trees and shrubs will be planted.

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A.5 Erosion Controls

A.5.1 General Guidelines

When site development or remedial actions require the disturbance of more than five acres of land, federal and state laws[1] require that the project obtain coverage under the NYSDEC SPDES General Permit for Storm Water Discharges from Construction Activities that are classified as "Associated with Industrial Activity", Permit #GP-93-06 (Construction Storm Water General Permit). Requirements for coverage under the Construction Storm Water General Permit include the submittal of a Notice of Intent form and the development of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must fulfill all permit requirements and must be prepared in accordance with "Chapter Four: the Storm Water Management and Erosion Control Plan" in Reducing Impacts of Storm Water Runoff from New Development, NYSDEC, 1992. This Storm Water Management and Erosion Control Plan, in accordance with permit requirements, will provide the following information:

- A background discussion of the scope of the construction project.
- A statement of the storm water management objectives.
- An evaluation of post-development runoff conditions.
- A description of proposed storm water control measures.

[1] The Federal Water Pollution Control Act (as amended, 33 U.S.C. 1251 et. Seq.) and the New York State Environmental Conservation Law: Article 17, Titles 7 and 8 and Article 70.

- A description of the type and frequency of maintenance activities required to support the control measure.

The SWPPP will address issues such as erosion prevention, sedimentation control, hydraulic loading, pollutant loading, ecological protection, physical site characteristics that impact design, and site management planning. The SWPP will also include a contingency plan to be implemented in the event of heavy rain events. All descriptions of proposed features and structures at the site will include a description of structure placement, supporting engineering data and calculations, construction scheduling, and references to established detailed design criteria. The SWPPP will conform to all requirements as established by applicable regulatory agencies.

Proven soil conservation practices will be incorporated in the construction and development plans to mitigate soil erosion damage, off-site sediment migration, and water pollution from erosion. These practices combine vegetative and structural measures. Many of these measures will be permanent in nature and become part of the completed construction project (design features such as drainage channels and grading). Other measures will be temporary and serve only during the construction stage. The contractor will remove temporary measures at the completion of construction. The selection of erosion and sediment control measures will be based on several general principles, including:

- The minimization of erosion through project design (maximum slopes, phased construction, etc.).
- The incorporation of temporary and permanent erosion control measures.
- The removal of sediment from sediment-laden storm water before it leaves the site.

The generic erosion and surface water control plan included in Attachment III details typical methods of erosion control that must be followed during site redevelopment activities. As described in Attachment III, a specific erosion and surface water control plan must be created prior to implementation of redevelopment activities. The use of appropriate temporary erosion control measures such as silt fencing and/or hay bales will be required around all soil/fill

stockpiles and unvegetated soil surfaces during redevelopment activities. These methods are described below, and Attachment IV includes details for various erosion control measures that might be used during site redevelopment activities. Stockpiles shall be graded and compacted as necessary for positive surface water runoff and dust control. Stockpiles of soil/fill will be placed a minimum of fifty feet from the boundaries.

A.5.2 Temporary and Permanent Erosion Control Measures

A.5.2.1 Temporary Measures

Temporary erosion and sedimentation control measures and facilities will be employed during active construction stages. Prior to any construction activity, temporary erosion and sediment control measures shall be installed and maintained until they are no longer needed, or until such time that permanent erosion control measures are installed and effective. Additional sediment control measures may also be necessary. Structural measures, as described below, will be designed and installed to provide the required sediment and erosion control. The following temporary measures will be incorporated into construction activities:

- Silt fencing.
- Straw bales.
- Temporary vegetation/mulching.

A.5.2.1.1 Silt Fencing

Regrading and capping activities may result in sheet flow to various areas of the site; therefore, silt fencing will be used as the primary sediment control measure. Prior to extensive clearing, grading, excavation, and placement of cover soils, silt fences will be installed along all construction perimeter areas to prevent sedimentation in low areas and drainage areas. The location and orientation of silt fencing to be used during redevelopment operations will be field determined. There may be breaks and overlaps in the silt fencing to allow construction vehicles access to the construction areas.

Intermediate silt fencing will be used upslope of perimeter areas where phased construction activities are occurring. This measure will effectively lower sheet flow velocities and reduce sediment loads to perimeter fencing. In addition, silt fencing around soil stockpiles will be employed.

As sediment collects along the silt fences, they will be cleaned to maintain desired roval performance and prevent structural failure of the fence. Removed sediment will be disposed on-site as general fill in a designated area. The perimeter silt fences will remain in place until construction activities in the area are completed and vegetative cover or other erosion control measures are adequately established. Silt fences will be provided and installed in accordance with the details presented in Attachment IV.

A.5.2.1.2 Straw Bales

Straw bales will be used to intercept sediment-laden runoff from storm water channels as needed during various phases of construction. Additional straw bale dikes may be necessary in some areas during some phases of construction.

Use of straw bales will be limited to swales and/or diversion ditches where the anticipated flow velocity will not be greater than 5 feet per second (fps). Where flows may eventually exceed 5 fps along a swale or diversion ditch, an intermediate straw bale barrier will be installed upgradient of the final bale barrier. The intermediate bale barrier will effectively reduce flow velocities and sediment load to the final barrier.

As with the silt fencing, sediment will be removed to maintain performance and prevent overtopping or failure of the straw bale barrier. Removed sediment will be disposed of on-site as general fill in a designated area. Sediment laden straw bales that have lost their structural integrity and/or effectiveness will be disposed of off-site as a solid waste. Straw bale barriers will remain in place until construction activities contributing sediment to the barrier are complete and vegetative cover or other erosion control measures are adequately established. Straw bales will be provided and installed in accordance with the details presented in Attachment IV.

A.5.2.1.3 Temporary Vegetation and Mulching

As a result of phased construction and split construction schedule, portions of the site may be left in intermediate/incomplete conditions. Intermediate areas may include rough graded areas awaiting finer grading or areas awaiting topsoil placement. Intermediate areas where activities will not resume for a period in excess of two weeks shall be seeded with a quick germinating variety of grass or covered with a layer of straw mulch.

The temporary cover will act to stabilize the soil and reduce erosion. As construction progresses, areas containing temporary vegetation or straw mulch can be covered without removal of the temporary vegetation or mulch.

A.5.2.2 Permanent Control Measures

Permanent erosion control measures and facilities will be incorporated during cover construction and during site redevelopment for long-term erosion protection. Permanent measures and facilities will be installed as early as possible during construction phases. Parking and building systems associated with redevelopment shall not include dry wells or other subsurface injections/disposal piping or facilities.

A.5.2.2.1 Design Features

The remedial construction activities will involve the installation of cover system including asphalt, concrete, or clean fill over the entire site. Permanent erosion control measures incorporate a combination of design features to limit overall erosion and sediment problems to practical design limits, and the placement of permanent facilities during site restoration for long-term erosion protection. The soil cover system will be designed based on the following criteria:

- Maximum slope of 33% (3H: 1V) to limit erosion.
- Minimize the potential contact with, and migration of, waste fill.
- Provide a medium for the growth of vegetation to control erosion.

Dust suppression techniques will be employed at the site in accordance with NYSDEC TAGM 4031 (Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites). This TAGM describes guidance for dust monitoring, and includes a list of effective dust suppression techniques. Dust monitoring is more fully described in Section A.12.2 (Community Air Monitoring Program). As per TAGM 4031, dust suppression techniques that may be used at the site include applying water on roadways, wetting equipment, spraying water on buckets during excavation and dumping, hauling materials in properly covered or watertight containers, covering excavated areas and material after excavation activity ceases, establishing vegetative cover immediately after placement of cover soil, and reducing the excavation size and/or number of excavations.

A.7 Construction Water Management

Pumping of water (i.e., groundwater and/or storm water that has accumulated in an excavation) from excavations, if necessary, will be done in such a manner as to prevent the migration of particulates, soil/fill, or unsolidified concrete materials, and to prevent damage to the existing subgrade. Water pumped from excavations will be managed properly in accordance with all applicable regulations so as to prevent endangerment of public health, property, or any portion of the construction.

The groundwater in excavations will be field screened for VOCs and observed for any noticeable sheens. Water in the excavations will not be discharged to the ground surface if:

- Staining or PID measurements above background are observed in the excavation, or
- A sheen is present on the water surface.

If any of these conditions exist, the water pumped from the excavations will be containerized and analyzed in accordance with the Surface Water and Groundwater quality Standards set forth in 6 NYCRR Part 703.5 and the local sewer authority discharge permit. If the water meets the surface water and groundwater quality standards, it may be discharged to the ground surface. If the water does not meet the surface water and groundwater quality standards, it may

be discharged to the local sewer authority under a discharge permit. If the water quality is such that the local sewer authority discharge permit requirements will be exceeded, or the local sewer authority will not approve the discharge to a sewer, it will be transported off-site for proper disposal or treated on-site via a treatment system that has been approved by NYSDEC.

Runoff from surface discharges shall be controlled. No discharges shall enter a surface water body without proper permits.

A.8 Fencing And Access Control

Access to soil/fill on the site must be controlled until final cover is placed to prevent direct contact with subgrade materials. To better control site access, obvious access points will be gated. All gates and existing fencing will be posted with "No Trespassing" signs. The majority of the site will be covered with clean fill or vegetated via hydroseeding to limit dust generation.

A.9 Property Use Limitations

The use of the property will be restricted through verbiage in the Brownfield Cleanup Agreement, to which this Remedial Action Work Plan will be attached.

A.10 Notification and Reporting Requirements

The following minimum notification and reporting requirements shall be followed by the property owner prior to and following site development, as appropriate:

- The NYSDEC and NYSDOH will be notified that subgrade activities are being initiated a minimum of five working days in advance of construction.
- A construction certification report stamped by a New York State licensed Professional Engineer, will be prepared and submitted to the NYSDEC and NYSDOH within 90 days after development of each parcel or subparcel. At a minimum, the report will include:

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- An area map showing the parcel or subparcel that was developed and the property's tax map number.
- A topographic map of the developed property showing actual building locations and dimensions, roads, parking areas, utility locations, berms, fences, property lines, sidewalks, green areas, contours and other pertinent improvements and features. The topographic map will be stamped by a New York State licensed surveyor.
- Plans showing areas and depth of fill removal.
- Description of erosion control measures.
- A text narrative describing the excavation activities performed, health and safety monitoring performed (both site specified and Community Air Monitoring), quantities and locations of soil/fill excavated, disposal locations for the soil/fill, soil sampling locations and results, a description of any problems encountered, location and acceptability test results for backfill sources, and other pertinent information necessary to document that the site activities were carried out properly.
- Plans showing before and after survey elevations on a 100-foot grid system to document the thickness of the clean soil cover system.
- A certification that all work was performed in conformance with the SFMP.

A.11 Quality Assurance and Quality Control (QA/QC)

A.11.1 Analytical Methods

All site soil/fill characterization samples collected during site redevelopment activities will be analyzed using EPA-approved analytical methods using the most recent edition of the EPA's "Test Methods for Evaluating Solid Waste" (SW-846). Methods for Chemical Analysis of Water and Wastes "(EPA 600/4-79-020), Standard Methods for Examination of Waste and Wastewater" (prepared and published jointly by the American Public Health Association, American Waterworks Association and Water Pollution Control Federation).

A.11.2 Laboratory

The laboratory proposed to perform the analyses will be certified through the New York State Department of Health Environmental Laboratory Approval Program (ELAP) to perform Contract Laboratory Program (CLP) analysis and Solid Waste and Hazardous Waste Analytical testing on all media to be sampled during this investigation. The laboratory will maintain this certification for the duration of the project.

A.11.3 Data Submittal

The laboratory will perform the analysis of samples in accordance with the most recent (year 2000) NYSDEC Analytical Services Protocol (ASP). Analytical data will be submitted in complete ASP Category B data packs including documentation of laboratory QA/QC procedures that will provide legally defensible data in a court of law. If requested, the Category B data packs will be submitted to the NYSDEC.

Procedures for chain of custody, laboratory instrumentation calibration, laboratory analyses, reporting of data, internal quality control, and corrective actions shall be followed as per SW-846 and as per the laboratory's Quality Assurance Plan. Where appropriate, trip blanks, field blanks, field duplicates, and matrix spike, matrix spike duplicate shall be performed at a rate of 10% and will be used to assess the quality of the data. The laboratory's in-house QA/QC limits will be utilized whenever they are more stringent than those suggested by the EPA methods.

A.11.4 Data Usability Summary Reports

After receipt of analytical results, the data package will be sent to a qualified, third party, data validation specialist for evaluation. A Data Usability Summary Report (DUSR) will be prepared. The DUSR will provide a determination of whether or not the data meets the project specific criteria for data quality and data use.

A.12 Health and Safety Procedures for Intrusive or Maintenance Activities

A.12.1 Construction Personnel Protection

Contractors engaged in subsurface (invasive) construction or maintenance activities (e.g., foundation and utility workers) will be required to implement appropriate health and safety procedures. These procedures will involve, at a minimum, donning adequate personal protective equipment, performing appropriate air monitoring, and implementing other engineering controls as necessary to mitigate potential ingestion, inhalation and contact with residual constituents in the soils. A site-specific, activity-specific health and safety plan must be prepared by the contractor prior to on-site construction activities. Recommended health and safety procedures include the following:

- While conducting invasive work at the site, the Contractor shall provide working conditions on each operation that shall be as safe and healthful as the nature of that operation permits. The Contractor shall comply with all New York State Department of Labor regulations and published recommendations and regulations promulgated under the Federal Occupational Safety and Health Act of 1970 and the Construction Safety Act of 1969, as amended, and with laws, rules, and regulations of other authorities having jurisdiction. Compliance with governmental requirements is mandated by law and considered only a minimum level of safety performance. The Contractor shall insure that all work is performed in accordance with recognized safe work practices.

- The Contractor shall be responsible for the safety of the Contractor's employees, the public and all other persons at or about the site of the work. The Contractor shall be solely responsible for the adequacy and safety of all construction methods, materials, equipment and the safe prosecution of the work.

- The Contractor shall have a written health and safety plan (HASP) prepared, signed and sealed by a safety professional; a safety professional and/or a trained safety representative(s) active on the job whenever the work is in progress; an effective and documented safety training program; and a safety work method check list system.

- The Contractor shall stop work whenever a work procedure or a condition at a work site is deemed unsafe by the safety professional or his trained safety representative(s).

- The Contractor shall employ a properly qualified safety professional whose duties shall be to initiate, review and implement measures for the protection of health and prevention of accidents. The Contractor shall also employ safety representative(s) whose duties, working under the direct supervision of the safety professional, shall include the implementation the safety program for the work at the site.

- Recognition as a safety professional shall be based on a minimum of certification by the Board of Certified Safety Professionals as a Certified Safety Professional and 5 years of professional safety management experience in the types of construction and conditions expected to be encountered on the site.

- The safety representative(s) who will work under the direction of the safety professional will have appropriate qualifications. The required qualifications shall include a minimum of: five years of relevant construction experience, two years of which were exclusively in construction safety management; successful completion of a 30-hour OSHA Construction Safety and Health training course; 40-hour training as per 29 CFR 1926.65, Hazardous Waste Operations and Emergency Response; and, if confined space entry is required, training as per 29 CFR 1910.146, Permit-Required Confined Spaces.

- The safety professional shall visit and audit all work areas as often as necessary but at least once each week and shall be available for consultation whenever necessary.

- The safety representative(s) must be at the job site full-time (a minimum of 8 hours per working day) whenever intrusive work is in progress. When multiple shift work is in progress more than one safety representative may be required.

- The safety professional and his safety representative(s) shall be responsible for ensuring Contractor compliance with governing laws, rules and regulations as well as of good safety practice.

- The safety staff shall maintain and keep available safety records, up-to-date copies of all pertinent safety rules and regulations, Material Safety Data Sheets, and the Contractors' site specific health and safety plans (HASPs) and the site emergency response plan with emergency and telephone contacts for supportive actions.

- The responsible safety professional shall sign and seal the Contractor's written site-specific HASP and the Plan shall be available to workers on site. The Contractor shall provide copies of the HASP to the Contractors' insurer, if required.

- The HASP will identify and define the following: the hazards anticipated for each major invasive task; the engineering, administrative and/or personal protective equipment control measures that will be implemented; the surveillance methods, and schedules of both walk through surveys and in-depth safety audits to be performed on site; medical monitoring and screening methods; the Contractors' pre-start-up and continuous safety-training program; emergency response equipment, notification, training and procedures; and include copies of safety inspection check-off sheets, specific to the work methods and crews performing work at the various job locations, to be used on a regular basis in evaluating the site and work methods.

- The safety professional and/or his trained safety representative(s) shall as a minimum:

    - Schedule and conduct safety meetings and safety training programs as required by law, the health and safety plan, and good safety practice. A specific schedule of dates of these meetings and an outline of materials to be covered shall be provided with the health and safety plan. All employees shall be instructed on the recognition of hazards, observance of precautions, of the contents of the health and safety plan and the use of protective and emergency equipment.

    - Determine that operators of specific equipment are qualified by training and/or experience before they are allowed to operate such equipment.

    - Develop and implement emergency response procedures. Post the name, address and hours of the nearest medical doctor, name and address of nearby clinics and hospitals, and the telephone numbers of the appropriate ambulance service, fire, and the police department.

    - Post all appropriate notices regarding safety and health regulations at locations that afford maximum exposure to all personnel at the job site.

    - Post appropriate instructions and warning signs in regard to all hazardous areas or conditions that cannot be eliminated. Identification of these areas shall be based on

experience, on site surveillance, and severity of hazard. Such signs shall not be used in place of appropriate workplace controls.

- Ascertain by personal inspection that all safety rules and regulations are enforced. Make inspections at least once a shift to ensure that all machines, tools and equipment are in a safe operating condition; and that all work areas are free of hazards. Take necessary and timely corrective actions to eliminate all unsafe acts and/or conditions, and submit to the Engineer each day a copy of his findings on the inspection check list report forms established in the health and safety plan.

- Provide safety training and orientation to authorized visitors to ensure their safety while occupying the job site.

- Perform all related tasks necessary to achieve the highest degree of safety that the nature of the work permits.

- The Contractor shall have proper safety and rescue equipment, adequately maintained and readily available, for foreseeable contingencies. This equipment may include such applicable items as: proper fire extinguishers, first aid supplies, safety ropes and harnesses, stretchers, water safety devices, oxygen breathing apparatus, resuscitators, gas detectors, oxygen deficiency indicators, combustible gas detectors, etc. This equipment should be kept in protected areas and checked at scheduled intervals. A log shall be maintained indicating who checked the equipment, when it was checked, and that it was acceptable. This equipment log shall be updated monthly and be submitted with the monthly report. Equipment that requires calibration shall have copies of dated calibration certificates on site. Substitute safety and rescue equipment must be provided while primary equipment is being serviced or calibrated.

- All personnel employed by the Contractor or his subcontractors or any visitors whenever entering the job site, shall be required to wear appropriate personal protection equipment required for that area. The Contractor may remove from the site any person who fails to comply with this or any other safety requirement.

- Because water with elevated pH may act as a skin irritant, care must be taken to inhibit dermal contact when handling any groundwater at the site. Actions to inhibit

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contact with groundwater may include the use of latex or other waterproof gloves by on-site workers.

A.12.2 Community Air Monitoring Program

Ambient air monitoring will be conducted by the Professional Engineer monitoring the work on a real-time basis during all subsurface construction activities using a minimum of a photoionization detector and a dust meter. Battery charge level for each instrument will be checked at the beginning and end of each day. The instruments will be calibrated at a frequency recommended by the manufacturer. All air monitoring readings will be recorded in a logbook and will be available for review by the NYSDEC and New York State Department of Health (NYSDOH).

Baseline conditions will be measured at proposed intrusive activity locations prior to commencement of operations. Air quality within the work zone will be monitored in accordance with the site-specific health and safety plan created by the site developer or contractor. In addition to monitoring the work area for worker health and safety, volatile organic compounds will be monitored at the downwind perimeter of the work area every hour. If downwind perimeter organic vapor levels exceed five parts per million (ppm) above the upwind work area perimeter concentrations, the Vapor Emission Response Plan will be implemented.

As described in Section A.6, appropriate dust suppression techniques will be employed at all times during site redevelopment activities. Using a dust meter, particulates will be continuously monitored immediately downwind in the work area and integrated over a period not to exceed 15 minutes. If the downwind particulate level is more than 150 ug/m^3, then upwind (background) levels must be measured immediately. If the downwind levels are more than 100 ug/m^3 above background, additional dust suppression measures must be taken.

A.12.1.1 Vapor Emission Response Plan

If the downwind area perimeter air concentrations of organic vapors exceed the upwind work area perimeter concentration by 5 ppm but less than 25 ppm, the following actions will be taken:

- Every 30 minutes monitor the perimeter work area location.
- Every 30 minutes monitor the organic vapor concentration 200 feet downwind of the work area perimeter or half the distance to the nearest receptor, whichever is less. If this reading exceeds the perimeter work area upwind organic vapor concentration by 5 ppm, all work must halt and monitoring increased to every 15 minutes. If, at any time, this reading exceeds the perimeter work area upwind concentration by 10 ppm, the Major Vapor Emissions Response Plan will be initiated.
- If organic vapor levels 200 feet downwind of the perimeter work area or half the distance to the nearest downwind receptor, whichever is less, exceeds by 5 ppm the work area perimeter upwind concentration persistently, then air quality monitoring must be performed within 20 feet of the nearest downwind receptor (20-foot zone). If the readings in the 20-foot zone exceed the perimeter work area upwind concentration by 5 ppm for more than 30 minutes, then the Major Vapor Emissions Response Plan will be implemented.
- Work activities can resume only after the downwind 200-foot reading and the 20-foot zone reading are less than 5 ppm above the perimeter work area upwind concentration. In addition, the downwind perimeter work area concentration must be less than 25 ppm above the perimeter work area upwind concentration.

A.12.2.2 Major Vapor Emission Response Plan

If the downwind work area perimeter organic vapor concentration exceeds the upwind work area perimeter concentration by more than 25 ppm, then the Major Vapor Emission Response Plan will be activated. Upon activation, the following activities will be undertaken:

1. All work will halt.
2. All Emergency Response Contacts as listed in the Health and Safety Plan will be contacted.

3. The NYSDEC, NYSDOH, and the Steuben County Health Department will be notified and advised of the situation.

4. The local police and fire department authorities will immediately be contacted by the Safety Officer and advised of the situation.

5. Frequent air monitoring will be conducted at 30-minute intervals within the 20-Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer and work may resume

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Operation, Monitoring and Maintenance Work Plan

APPENDIX

B

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OPERATION, MONITORING AND MAINTENANCE WORK PLAN FOR THE FORMER INGERSOLL-RAND FOUNDRY SITE

VILLAGE OF PAINTED POST
STEUBEN COUNTY, NEW YORK

AUGUST 2005

MALCOLM PIRNIE, INC.

40 Centre Drive
Orchard Park, NY 14127

3198-004/rawp/omwp

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MALCOLM PIRNIE

1.0 INTRODUCTION

This Operation, Monitoring and Maintenance (OM&M) Work Plan has been prepared for the former Ingersoll-Rand Foundry Site in Painted Post, New York (the Site). The Site is the subject of a Voluntary Cleanup Agreement in accordance with New York State Department of Environmental Conservation (NYSDEC) Brownfields Cleanup Program guidance. The Agreement requires that the Site owner maintain the institutional and physical components that shall comprise the completed voluntary cleanup. This OM&M Work Plan describes the conditions and procedures for maintaining the physical components of the completed Site voluntary cleanup, and as an appendix to the Remedial Work Plan (RWP), it shall be an enforceable part of the Agreement.

The owner (Owner) of the Site (or any portion thereof) should evaluate the criteria presented in this plan and should recommend changes to the NYSDEC, as appropriate, depending on actual post-closure site conditions. As a minimum, this plan should be reviewed annually during the post-closure period and updated when necessary.

Prior to initiation of the OM&M Work Plan, the Owner shall prepare and submit appropriate organizational documents to the NYSDEC for review and approval. The organizational documents shall include:

- An organizational chart outlining the responsible party's personnel (with qualifications) who will be responsible for implementing the post-closure operation, maintenance and monitoring program.
- A health and safety plan.
- Example inspection report forms.
- A schedule for the annual inspections and reporting.

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2.0 BACKGROUND

The Site is a former foundry plant facility situated on approximately 57-acres of land at the northwest end of West Water Street in the northwestern portion of the Village of Painted Post, Steuben County, New York. The Site is approximately 1,200 feet east of the south-flowing Cohocton River. The Site is surrounded by an open field to the west, a parking lot to the south and residential housing to the east and north. Two rail spurs once serviced the Site. The facility began operations in 1848 as a machine shop and foundry owned by the Weston Engine Company. In 1898, the Imperial Engine Company, a subsidiary of the Rand Drill Company, purchased the facility. In 1905 Rand merged with the Ingersoll-Sergeant Drill Company to become Ingersoll-Rand (IR). The facility remained under IR's ownership until December 31, 1986 when Dresser Industries merged with IR to become the Dresser-Rand Company (Capsule, 1988).

During its active use, the foundry contained 287,000 square feet of industrial buildings, most of which were located along the northeastern side of the Site. The foundry produced gray iron castings used in assembling air compressors. In 1972, the foundry began producing gray iron in continuous pour from electric-melt furnaces. At that time operations included pattern construction, sand mold lines, casting, shakeout, casting cleaning, and pattern and casting storage (Capsule, 1988). IR ceased production operations at the Painted Post foundry site on January 1, 1986.

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3.0 REMEDIAL WORK PLAN

The Remedial Work Plan (RWP) for the site was prepared in October 2004 to be implemented during the voluntary cleanup of the Former Ingersoll-Rand Site.

According to the RWP, in order to eliminate potential exposure risks associated with direct contact with site fill material, the entire site will be covered as part of site redevelopment. The cover system will be placed directly on top of the re-graded on-site fill material and will include clean soil for outdoor, vegetated areas, asphalt for roads and parking lots, or concrete for sidewalks, buildings and heavy use areas. Surface coverage over the entire redeveloped parcel or subparcel will be required by the site owner or developer as a pre-condition of occupancy.

The proposed cover system has been designed to be protective of human health and the environment. The primary exposure pathway for contaminants at the site (metals and polycyclic aromatic hydrocarbons) in soil is via direct contact. The proposed plan of covering the on-site fill material will eliminate the potential for direct contact with soil and is therefore protective of human health.

The Qualitative Risk Assessment performed as part of the Supplemental Investigation (Malcolm Pirnie, 2004) evaluated the risk posed by chemicals of potential concern ("COPCs") to human health and wildlife. The Risk Assessment also evaluated the adequacy of the cover system planned for placement during site redevelopment and determined that the above-described cover system would protect human health and wildlife from these COPCs.

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4.0 SUMMARY OF THE REMEDIAL CLOSURE DESIGN

4.1 PREPARATION OF SITE SURFACE

The Site will require grading prior to cover placement activities, in accordance with the Remedial Work Plan (RWP) and appended Soil/Fill Management Plan (SFMP). Any fill material will be graded to a regular topographic surface as planned for redevelopment. All trees, shrubs, roots, brush, masonry, rubbish, scrap, debris, pavement, curbs, fences and miscellaneous structures will either be removed and disposed of off-site at a permitted disposal facility. Prior to placement of the cover system, all protruding material will be removed from the ground surface. Burning shall not be allowed on the Site.

4.2 COVER SYSTEM

4.2.1 *Soil*

In areas that will not receive significant equipment or vehicular use, the cover system will be composed of soil fill from a NYSDEC-approved borrow source and tested in accordance with the Soil/Fill Management Plan and found to contain constituent concentrations less than those specified in NYSDEC TAGM 4046. The soil cover will be placed in accordance with the RWP.

It will be the responsibility of the Owner to annually verify that the soil cover has remained in good condition (e.g., grass or other vegetation is maintained) and sufficiently covers the soil/fill material at the Site (i.e., eroded areas are repaired and the soil cover is maintained). Certification as to this verification is included on the site inspection form on Attachment A.

4.2.2 Asphalt

The cover system in areas that will become roads, sidewalks, and parking lots will consist of a minimum of two inches of asphalt that will be placed over the soil/fill material at the site. The

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asphalt will be placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence, in accordance with the RWP. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area re-graded to a regular surface.

It will be the responsibility of the Owner to annually verify that the asphalt has remained in good condition and sufficiently covers the soil/fill material.

4.2.3 Concrete

The cover system in areas that will become structures will consist of a minimum of two inches of concrete that will be placed above the soil/fill material. The concrete will be placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence. Concrete may also be used instead of asphalt for roads, sidewalks, and parking lots. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area re-graded to a sufficient regular surface.

It will be the responsibility of the Owner to annually verify that the concrete has remained in good condition and sufficiently covers the soil/fill material at the Site as per Attachment A.

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4.3 EROSION CONTROL MEASURES

In accordance with the SFMP, design and permanent construction features shall be incorporated into the site construction plans to control erosion. It will be the responsibility of the Owner to annually certify that storm water channel slopes, vegetation and any synthetic erosion control fabrics placed in such channels remain in good condition.

4.4 FENCING AND ACCESS CONTROL

In accordance with the RWP and the SFMP, fencing shall be constructed and signs posted around all areas with exposed soil/fill or areas where excavation will occur. If the entire Site is completely hydroseeded or completely graded and covered at the same time, fencing the entire Site will not be necessary, but gates shall be installed across obvious access points to limit the potential for illegal dumping. It will be the responsibility of the Owner to annually certify that fences, gates and signs are in place and that access is restricted, to the best of the Owner's ability.

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5.0 INSPECTION PROCEDURES

The physical components of the cover system shall be inspected annually by a representative of Owner (or its delegated agent) qualified to carry out such inspections. The inspector should be, at minimum, a certified industrial hygienist or a person with a four-year college degree in environmental sciences. The inspection will be coordinated with facility personnel at least one week prior to ensure that most, if not all, of the paved areas will be accessible for inspection. Indoors, in office spaces with floor coverings, the inspection should at minimum make note of areas with settled or uneven surfaces, seepage or flooding. Arrangements to repair those areas that the inspector requires to be maintained, if any, will be initiated as may be required by the inspector.

The annual inspection shall include, but not be limited to, those matters set forth on the Environmental Inspection Form, attached hereto as Exhibit A. These inspection reports, which shall include a map that shows areas of damage or required maintenance, shall be kept on file by the Owner. If the inspections reveal that maintenance is necessary, then the Owner shall notify the NYSDEC, and arrange to complete the repairs. The NYSDEC shall be informed by Owner when repairs are complete.

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6.0 FINAL COVER SYSTEM CONDITION

The final cover system shall be observed by traversing the cover on foot and making appropriate observations, notes and photographic records as necessary, for inclusion with the report. It is anticipated that some maintenance activities will be necessary during the closure period. The following characteristics shall be looked for during the observation of the cover system, fencing and signs, and erosion control features:

- Sloughing.
- Cracks.
- Settlement (depression and puddles).
- Erosion features.
- Distressed vegetation/turf.
- Damaged fencing, gates and signs.

The following paragraphs describe actions that should be taken to address the conditions described above. Maintenance and repairs that are typically necessary during the closure period are also described.

6.1 SLOUGHING

Sloughing of the soil cover may occur. Areas where sloughing has occurred shall be repaired. Cover soil shall be placed in accordance with the requirements of the Remedial Work Plan (RWP), and of the Soil/Fill Management Plan (SFMP).

6.2 CRACKS

The locations of any cracks in the soil, asphalt or concrete cover should be noted on the inspection log and site map, including width, length and depth of the crack. The appropriate maintenance

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procedure will be determined by the inspector. Small willow cracks in the soil cover can be repaired by minor re-grading of the cracked area and re-seeding the area. Larger cracks that appear to extend into the fill material shall be filled with soil similar to that used for construction of the cover soil layer prior to re-seeding, in accordance with the RWP. Repairs to the asphalt and/or concrete will be completed when and in the fashion deemed necessary by the inspector.

6.3 SETTLEMENT

Settlement features such as depressions or areas of ponding water shall be re-graded by placing additional soil cover so that surface water drains in the appropriate direction.

6.4 EROSION FEATURES

Erosion features shall be repaired by backfilling to the original grade with soil and re-seeding. Torn or displaced synthetic erosion control fabric in storm water channels shall be repaired or replaced as directed by the inspector.

6.5 DISTRESSED VEGETATION/TURF

Areas of distressed turf shall be re-seeded and a starter fertilizer applied. Large-root growth may also compromise the integrity of the soil cover and shall be discouraged with regular mowing. Reasonable efforts shall be taken to avoid damage to the turf from traffic and other unintended uses.

6.6 FENCING AND ACCESS CONTROL

To the best of owner's ability, physical discontinuities in fence material shall be repaired; fence posts and foundations that show evidence of structural weakness shall be repaired or replaced as necessary; gates and locks shall be maintained to deter unauthorized entry; and warning signs shall be kept secured in place and trees shall be trimmed to ensure the signs are visible.

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7.0 INSPECTION REPORTING

Annual inspection reports shall be forwarded by the Owner to the NYSDEC. If the inspection finds that corrective action is required, a followup inspection will be made after the repairs have been completed. If the inspector determines that corrective action is required, the Corrective Action Form will be included with the inspection report, confirming that the repairs were completed, and in accordance with the Remedial Work Plan.

Any analytical data that may be gathered during the course of the inspection or corrective action shall also be included with the inspection report and submitted to the NYSDEC within 21 days of the inspection. The inspection reports will be submitted by the Site Owner with an attached Annual Certification form, signed and notarized by the Site Owner, certifying that the specified engineering and institutional controls are in place and functioning.

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ATTACHMENT A

ENVIRONMENTAL INSPECTION FORM

Painted Post, NY – Former Ingersoll-Rand Foundry Site

Property Name: _____ Inspection Date: _____

Property Address: _____

City: _____ State: _____ Zip Code: _____

Property ID: (Tax Assessment Map)

Section:_____ Block:_____ Lot(s):_____

Total Acreage: _____

Weather (during inspection): Temperature: _____ Conditions:

SIGNATURE:

The findings of this inspection were discussed with appropriate personnel, corrective actions were identified and implementation was mutually agreed upon:

Inspector: _____ Date: _____

Next Scheduled Inspection Date: _____

SECURITY AND ACCESS

	Yes	No
1. Access controlled by perimeter fencing?	____	____
Are there sections of the fence material damaged or missing?	____	____
Are the fence or gate post foundations structurally sound?	____	____
2. "No Trespass" signs posted in appropriate languages?	____	____
Are the signs securely attached to the fencing or posts?	____	____
Are there sufficient signs; are the signs adequately spaced around the perimeter of the property?	____	____
3. Is there evidence of trespassing?	____	____
Is there evidence of illegal dumping?	____	____

COVER & VEGETATION

4. Final cover in acceptable condition?	____	____
Is there evidence of sloughing, erosion, ponding or settlement?	____	____
Is there evidence of unintended traffic; rutting?	____	____
Is there evidence of distressed vegetation/turf?	____	____

	Yes	No
5. Final cover sufficiently covers soil/fill material?	____	____
Are there cracks visible in the soil or pavement?	____	____
Is there evidence of erosion in the stormwater channels or swales?	____	____
Is there damage to the synthetic erosion control fabric in the channels or swales?	____	____

ACTIVITY ON SITE

6. Any activity on site that mechanically disturbed soil cover?	____	____

ADDITIONAL FACILITY INFORMATION

Development on or near the site? (Specify size and type: e.g., residential, 40 acres, well and septic)

COMMENTS

Item #

ATTACHMENTS

1. Site Sketch
2. Photographs
3. Laboratory Report (s)

33)

Annual Certification of Institutional/Engineering Controls

Painted Post, NY – Former Ingersoll-Rand Foundry Site

Property Name:
Property Address:

County: Erie
City/Town: Buffalo
Property ID: (Tax Assessment Map)
Section:_____ Block:_____ Lot(s):_____

I (name), residing at (address), as owner of the property(ies) listed above which are located wholly or partially within the boundaries of the Voluntary Cleanup Site named above; do certify that the engineering and/or institutional controls, as specified in the Declaration of Covenants and Restrictions for the Voluntary Cleanup Site are in-place and functioning as designed within the property(ies) listed above.

Signature:_____

(This area for notary public)

33)

CORRECTIVE ACTION FORM

Painted Post, NY – Former Ingersoll-Rand Foundry Site

Property Name: _____

Property Address:

City: _____ State: _____ Zip Code: _____

Property ID: (Tax Assessment Map)

Section:_____ Block:_____ Lot(s):_____

Total Acreage: _____

Weather (during inspection): Temperature: _____ Conditions:

An inspection of the subject property on (date) identified the need for corrective action.

CORRECTIVE ACTION TAKEN

Description: (attach site sketch and photographs)

Date Completed:

SIGNATURE:

The corrective action described above was completed in accordance with all relevant requirements of the Remedial Action Work Plan.

Inspector: _____ Date: _____

ATTACHMENTS

1. Site Sketch
2. Photographs
3. Laboratory Report (s)

PHASE II ENVIRONMENTAL SITE ASSESSMENT

FORMER INGERSOLL-RAND FOUNDRY
WEST WATER STREET
TOWN OF ERWIN,
STEUBEN COUNTY, NEW YORK
Moody Job No. 15-107-TE
October 12, 2015

Submitted to:

Larry Smith
Village of Painted Post
261 Steuben Street
P.O. Box 110
Painted Post, NY 14870

Chuck Miller
Monroe Tractor
110 Old Ithaca Road
Horseheads, NY 14845

Prepared by:

Matthew P. Caldwell, G.I.T.
Geologic Technician II

Reviewed by:

Timothy M. Eriksen, P.G.
Senior Associate

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APPENDIX C: Laboratory Analytical Report Forms

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TABLE 1: Analytical Detection Summary

PHASE II ENVIRONMENTAL SITE ASSESSMENT
FORMER INGERSOLL-RAND FOUNDRY
WEST WATER STREET,
VILLAGE OF PAINTED POST,
STEUBEN COUNTY, NEW YORK

INTRODUCTION

Moody and Associates, Inc. ("Moody") has completed a Phase II Environmental Site Assessment ("ESA") of the Former Ingersoll Rand Foundry property, located at West Water Street, Town of Erwin, Steuben County, New York. FIGURE 1 is a site location map.

The facility that was on the property began operations as a machine shop and foundry in 1848. During its active use the property contained 287,000 square feet of buildings and produced gray iron castings used in the assembly of air compressors. In 1972 the foundry started producing gray iron in continuous pour form from electric melt furnaces. During that time of production, operations included pattern construction, sand mold lines, casting, shakeout, casting cleaning, and pattern and casting storage. Production operations ended at the facility on January 1, 1986 (Malcolm Pirnie, 2005).

Since January 1986, there have been multiple environmental investigations and remedial actions performed at the site. Previous environmental investigations have shown the presence of contaminated soil within the three-hundred foot (300 ft.) radius of monitoring well 2B ("MW-2B"). In 2001, under the recommendation of the New York State Department of Environmental Conservation ("NYSDEC"), a deed restriction was placed on the MW-2B area of the property. In 2005, Malcolm Pirnie of Orchard Park, NY conducted a remedial work plan for Painted Post Development, LLC. A copy of the Bargain and Sale Deed, including the Malcolm Pirnie report, is attached as APPENDIX A.

This Phase II ESA was conducted on behalf of the Village of Painted Post and Monroe Tractor. The intent is to identify any soil issues in the proposed major areas of disturbance to allow for the appropriate budgeting of construction, and to minimize any unforeseen conditions.

ENVIRONMENTAL EVALUATION

The environmental investigation of the property was performed on March 26, 2015. Ten (10) soil borings were advanced on the property using direct push equipment. Based on field detections with a photo ionization detector ("PID") and visual and olfactory evidence, one (1) soil sample was collected from each of the soil borings.

NYEG Drilling, LLC ("NYEG") was contracted by Moody to perform the advancement of soil borings using a 4x4 truck mounted GeoProbe®. Moody provided oversight of field activities and performed the sampling. Soil boring locations were placed in locations where the most disturbances are expected during the proposed future development of the site. Soil boring locations are shown in FIGURE 2.

Soil was sampled continuously using a 1.25-inch by 4-foot macro corer with disposable polyethylene sleeve. Descriptions of lithology encountered are included as APPENDIX B. The soil borings were advanced to 12 feet or until native material was encountered, whichever occurred first. One (1) soil sample was collected from each of the borings. The sample interval was determined by volatile organic compound ("VOC") field screening using a PID, and visual and olfactory evidence of contamination.

- TB-1: 12.0 feet below ground surface ("bgs") – No PID detection. Sample collected at 4 feet.
- TB-2: 12.0 feet bgs – No PID detection. Sample collected at 6 feet.
- TB-3: 12.0 feet bgs – Max PID reading of 0.7 PPM. Sample collected at 9 feet.
- TB-4: 4.5 feet bgs – Refusal. Max PID reading of 4.6 PPM. Sample collected at 4.5 feet.
- TB-5: Not advanced due to access issues.
- TB-6: 12 feet bgs – No PID detection. Sample collected at 7 feet.
- TB-7: 12 feet bgs – No PID detection. Sample collected at 4.5 feet.
- TB-8: 12 feet bgs – Max PID reading of 0.2 PPM. Sample collected at 7.5 feet.

- TB-9: 12 feet bgs – Max PID reading of 0.6 PPM. Sample collected at 8 feet.
- TB-10: 8 feet bgs – Refusal. No PID detection. Sample collected at 7 feet.
- TB-11: 12 feet bgs – Max PID reading of 0.3 PPM. Sample collected at 5 feet.

Samples were submitted to Microbac Laboratories Inc. in Sayre, Pennsylvania for laboratory analysis for semivolatile organic compounds ("SVOCs") according to NYSDEC 8270 STARS list, Resource Conservation and Recovery Act ("RCRA") metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver), Polychlorinated Biphenyls ("PCBs"), and percent solids. Samples were placed into appropriate sample containers and placed on ice in a cooler for shipment to the laboratory for analysis. Appropriate chain-of-custody was maintained during sample handling. Laboratory analytical reports for soil analyses are included in APPENDIX C. Soil results and corresponding standards are located in TABLE 1.

Soil boring logs, which include PID detections and visual/olfactory evidence of contamination, are included as APPENDIX B.

A summary of detections is:

- Detected SVOC concentrations were below the respective NYSDEC Commercial Use Standards ("NYSDEC CUS"), except for Benzo(a)pyrene in TB-10. Also note that the detection limit for TB-11 was higher than the NYSDEC CUS for two (2) parameters, Benzo(a)pyrene and Dibenz(a,h)anthracene due to matrix interference in the sample.
- Metals were detected below the respective NYSDEC CUS.
- Detected PCBs concentrations were below the respective NYSDEC CUS.

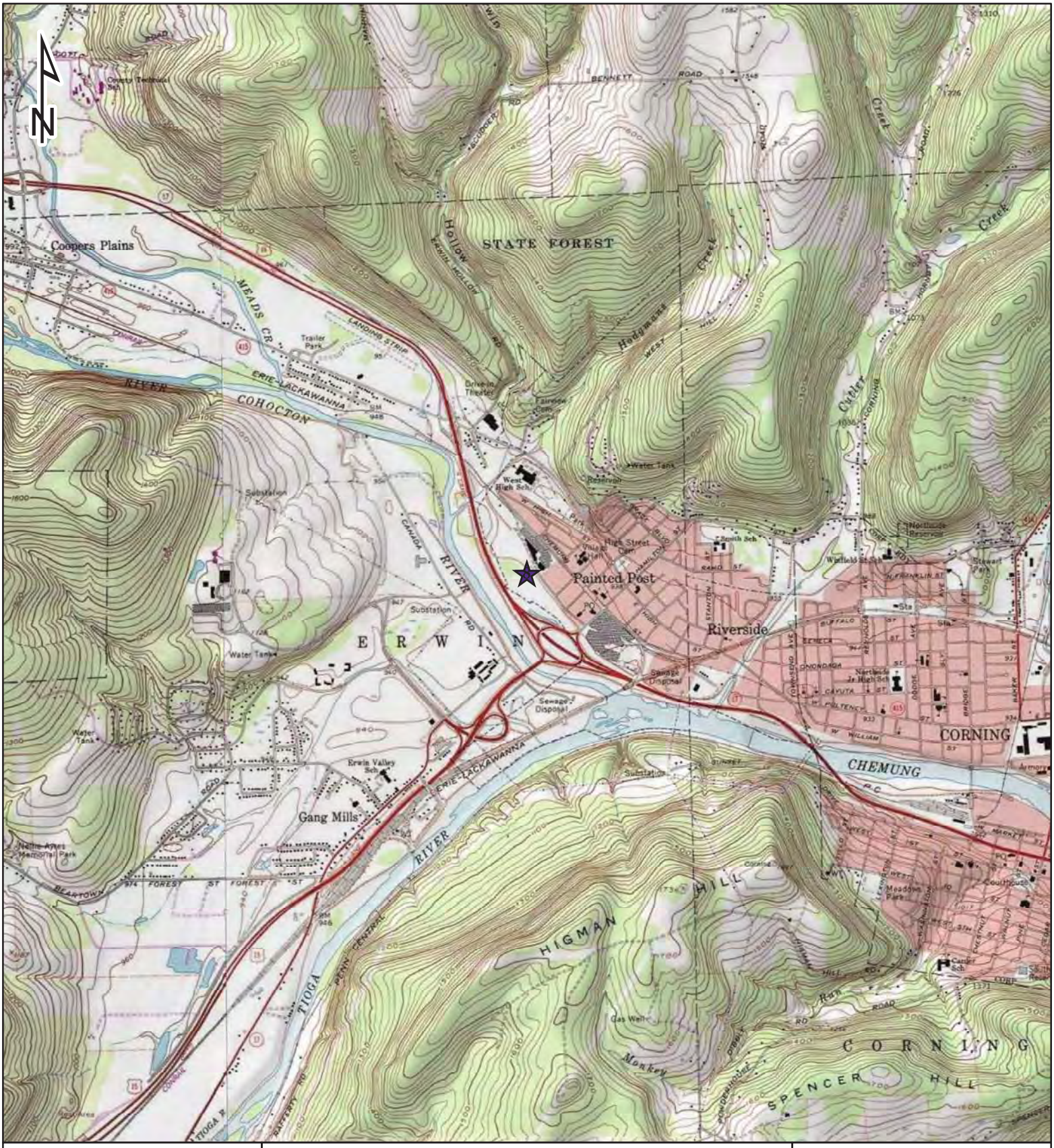
CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this Phase II ESA investigation, targeted compounds of concern were detected in soil below the NYSDEC CUS except for Benzo(a)pyrene in TB-10 at seven (7) feet BGS.

Moody recommends keeping excavation to within six (6) feet of the ground surface in the area of TB-10. Moody further recommends that dust control and particulate monitoring prescribed in APPENDIX A be followed as required during soil disturbance activities at the site.

The conclusions, recommendations and statements presented in this report are based on available information and have been prepared to the best of the knowledge and ability of Moody. Because of uncertainties inherent in any Phase II ESA, Moody can not and will not offer any guarantee that potential environmental liabilities do not exist on the property.

FIGURES



Scale: 1 in = 3,000 ft

0 750 1,500 3,000 4,500 Feet

Project #: 15-107-TE

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Moody and Associates, Inc.

Drawn by:	Checked by:	Date:	Revision:
EDC	------	10/7/2015	0

Legend

★ Approximate Site Location

Map Reference:

Copyright:© 2011 National Geographic Society, i-cubed

FIGURE 1
Site Location Map

Former Ingersoll-Rand Foundary
Town of Erwin
Steuben County, New York

Prepared For:

MONROE TRACTOR

Label	Boring Depth (feet)	Sample Depth (feet)	PID (ppm)
TB-1	12	4	0.0
TB-2	12	6	0.0
TB-3	12	9	0.7
TB-4	6	4.5	4.6
TB-5	No Soil Boring at TB-5		
TB-6	12	7	0.0
TB-7	12	4.5	0.0
TB-8	8	7.5	0.2
TB-9	12	8	0.6
TB-10	8	7	0.0
TB-11	12	5	0.3

Scale: 1 in = 150 ft

0 37.5 75 150 225 Feet

Project #: 15-107-TE

685 Broad Street Ext.
Suite 1
Waverly, New York 18892
607.565.8800 voice
607.565.8805 fax
www.moody-s.com

Moody and Associates, Inc.

Drawn by:	Checked by:	Date:	Revision:
EDC	TME	10/12/2015	2

Legend

MW-2B (referenced in deed - Appendix A)

Soil Borings

Soil Boring Completed

Soil Boring Not Completed

Map Reference:
NYS Division of Homeland Security and Emergency Services - Office of Cyber Security
Steuben_12in_2012

FIGURE 2
Soil Boring Map

Former Ingersoll-Rand Foundary
Town of Erwin
Steuben County, New York

Prepared For:

MONROE TRACTOR

APPENDIX A

Bargain and Sale Deed – Malcolm Pirnie Report

BARGAIN AND SALE DEED
FORMER INGERSOLL-RAND FOUNDRY SITE
STEUBEN COUNTY
PAINTED POST, NEW YORK

THIS INDENTURE, made as of the 1st day of August 2005, by and between **INGERSOLL-RAND COMPANY**, a New Jersey corporation, having an address at 155 Chestnut Ridge Road, Montvale, New Jersey 07645 (the "Grantor") and **PAINTED POST DEVELOPMENT, LLC**, a New York limited liability company, having an address at 5 East Market Street, Suite 301, Corning, New York 14830 (the "Grantee"), and acknowledged by the **VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK** (the "Village") and the **NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION** (the "DEC").

WITNESSETH, that Grantor is the owner of certain real property containing approximately forty-nine (49) acres with certain improvements thereon and located in the vicinity of 450 West Water Street in the Village of Painted Post, Steuben County, New York (the "Foundry Premises" or the "Premises"), as more particularly set forth and described in SCHEDULE "A" attached hereto and made a part hereof, and including a portion of the Premises indicating the presence of contaminated soil within the three-hundred foot (300 ft.) radius of monitoring well 2B (the "MW-2B Area") as depicted on Schedule A attached to the Declaration (as defined below);

WITNESSETH, that the history of prior environmental investigations and remediation conducted at the Premises is described more fully in SCHEDULE C attached hereto and made a part hereof;

WITNESSETH, that part of the selected remedial actions selected by the DEC, in the form of an institutional control, required the Grantor to record a deed restriction on the MW-2B Area identifying the presence of contaminated soil and to minimize the potential for future human exposure to certain environmental conditions by restricting certain uses and activities at the Premises and pursuant thereto the Grantor recorded a Declaration of Conditions, Covenants and Restrictions on the Premises in the Steuben County Clerk's Office on January 10, 2001 at Liber 1697, Page 312 (the "Declaration");

WITNESSETH, that the Grantor has released the Premises from the Declaration pursuant to that certain Release of Property From Declaration of Conditions, Covenants and Restrictions, dated as of August 1, 2005 and to be recorded in the Steuben County Clerk's Office (the "Release") and the DEC acknowledges such Release;

WITNESSETH, that Grantor, in consideration of One And More Dollars lawful money of the United States, the use restrictions contained herein and other good and valuable consideration paid by Grantee, does hereby grant and release unto Grantee, its successors and assigns forever, the Premises;

TOGETHER with the appurtenances and all the estate and rights of Grantor in and to the Premises;

SUBJECT TO all matters of public record, including, but not limited to, all covenants, easements, rights of entry, liens, encumbrances and restrictions of record affecting the Premises and subject to all laws, statutes, ordinances, codes, rules and regulations;

BEING a portion of the parcel conveyed to Grantor by deed recorded on July 26, 2000 at the Steuben County Clerk's Office in Liber 1667 of Deeds at Page 312;

TO HAVE AND TO HOLD the Premises herein granted unto Grantee, its heirs, successors and assigns forever subject to the terms, restrictions and covenants set forth herein and all matters of public record, including, but not limited to all covenants, easements, rights of way, liens, encumbrances and restrictions of record affecting the Premises and subject to all laws, statutes, ordinances, codes, rules and regulations;

AND Grantor and Grantee covenant and agree as follows:

A. Restrictions on Use

FIRST, that in order to protect human health and the environment the Department of Environmental Conservation has required that the uses of the Premises be restricted to industrial uses and/or restricted commercial uses, excluding uses for child care, day care or health care. The Village, in order to promote community objectives, has required the use of the Premises be further restricted to the following uses currently authorized in an "Industrial District" under Section 280.18, entitled "USE REGULATIONS - SCHEDULE OF USES TABLE", of the Village of Painted Post Zoning Law ("the Village Zoning Law"): commercial vehicle; low-profile business; offices-general; offices - one practicing professional in existing building; offices - more than one practicing professional; planned commercial districts (consistent with the restrictions contained herein); retail business or service not otherwise specially mentioned under the Village Zoning law (consistent with the restrictions contained herein); wholesale business or service not otherwise specifically mentioned under the Village Zoning Law; manufacture, fabrication, extraction, assembly warehousing and other handling of material; research laboratories; storage facility indoor; trucking/wholesale warehouse terminals (with approval by a majority of the Village of Painted Post Planning Board); accessory use/building/structure on same or separate lot; communication tower (new or co-location on existing tower) public utility or transportation use - office; public utility or transportation use - repairs, service or storage; satellite dish; and mixed use (more than one of the above permitted uses); provided, however, the following uses, otherwise authorized in an "Industrial District" under the Village Zoning Law, shall be prohibited hereunder: automobile repair garage; bowling alley; car washing station; convenience/mini-markets (with or without gas); day-care center; drive-in movie; equipment rental or sales yard; gasoline filling station; grocery store; laundry or dry cleaning plant; newsrack; newspaper offices and printing shops; restaurant; roadside stand; storage yards for equipment; theater or concert hall; veterinary office, animal hospital or kennels; contractors yard and equipment; storage facility, outdoor; nursing or convalescent home; agricultural use for

crops; agricultural use for manufacture; cemetery; church or other places of worship; club, membership; crematory; cultural facilities (library, art gallery, museum, etc.); golf course or country club; hospital or sanitarium; institutional or philanthropic use; and/or private, public or parochial school. All other uses including, but not limited to, day care center, adult entertainment uses and all uses under the category "Residential Uses" in the "SCHEDULE OF USES TABLE" contained in the Village of Painted Post Zoning Law are strictly prohibited. A copy of the current version of Section 280.18 of the Village of Painted Post Zoning Law along with a copy of the relevant definitions from the Village of Painted Post Zoning Law are attached hereto as SCHEDULE "B" and incorporated herein.

B. Restrictions and Conditions on Activities

SECOND, that certain Notices are given and required to be given before the undertaking of certain physical activities consistent with the uses of the Premises in order to prevent or mitigate exposure of individuals and/or the public from residual contamination as follows:

1. Notice and warning is hereby provided that polynuclear aromatic hydrocarbons ("PAHs"), which are semi-volatile organic compounds, are located in soils at and below the ground surface of the Premises. Notice and warning is hereby provided that such PAHs may pose a risk to humans in a scenario where future use of the Premises includes invasive activities at or below the surface of the Premises, and appropriate precautions should be taken.

2. No disturbance or excavation of surface or subsurface soils or other materials at or below the Premises shall be conducted without prior notification thereof to or consent by the DEC. Any disturbance or excavation of surface or subsurface soils or other materials at or below the Premises shall be conducted (i) consistent with the Remedial Work Plan and the Soil Fill Management Protocol attached thereto, all as more particularly described in SCHEDULE "D" attached hereto and made a part hereof and as may the same may be amended by and between DEC and the Grantee from time to time, or (ii) as otherwise permitted by the DEC.

3. The Grantee, its successors and assigns, shall prohibit the use of ground water underlying the Premises (unless the Grantee, or its successors and assigns, first obtains permission to do so from the DEC), but such responsibility to prohibit such use shall be strictly limited to ground water withdrawn from within the boundaries of the Premises, and the Grantee, its successors and assigns, shall only be responsible to prohibit such use for those individuals that have title to the Premises, or to those individuals that have a legally enforceable leasehold interest in the Premises.

THIRD, that the Grantee is contemplating the acquisition, construction, installation, equipping and operation of a large-scale warehousing and distribution facility of approximately 400,000 square feet at the Premises (the "Development Project") and

(A) Grantee, its successors and assigns, shall notify Grantor in writing sixty (60) days, but not more than one hundred and twenty (120) days, prior to the onset of construction activities as related to the Development Project or Alternate Project (as defined below). Upon receipt of such

written notice, Grantor shall seek to secure environmental insurance for the benefit of Grantor and as related to the Property, in a form, coverage, content (as outlined in Exhibit I to the Transfer Agreement (as defined below)) and a carrier acceptable to Grantor in its sole reasonable discretion, with Grantee named as an additional insured (the "Environmental Insurance"). Grantee, its successors and assigns, shall be solely responsible for the cost and expense of such Environmental Insurance, and any and all such cost and expense in an amount in excess of $70,000 and arising out of the Development Project, Alternate Project or changes in insurance market conditions, shall be deemed part of and added to the consideration for the conveyance of the Premises pursuant to that certain Settlement and Real Property Transfer Agreement, dated as of August 1, 2005 (the "Transfer Agreement"), by and between the Grantor, Grantee and the Village, and shall be paid to Grantor promptly upon submission by Grantor to Grantee, its successors and assigns, of an invoice pertaining to such Environmental Insurance;

(B) notwithstanding anything contained herein to the contrary, (a) the Grantee, its successors and assigns, shall provide to Grantor (i) reasonable written notice of its intention or desire to pursue a commercial redevelopment project other than the Development Project (such commercial redevelopment project other than the Development Project hereinafter referred to as the "Alternate Project") and (ii) drawings, layouts, plans and other relevant information (collectively, the "Concept Plan") detailing the Alternate Project and (b) the Grantor shall (i) have a reasonable opportunity to review the Concept Plan and may request other reasonable and relevant information in connection with the Alternate Project, (ii) determine whether the Alternate Project is consistent with the uses permitted herein, (iii) have the right to approve the Alternate Project, which approval shall not be unreasonably withheld, delayed or conditioned and (iv) seek to secure the Environmental Insurance at the sole cost and expense of Grantee, its successors and assigns as provided in the foregoing paragraph and

(C) in the event Grantor exercises such right to secure the Environmental Insurance and such Environmental Insurance is unable to be secured, Grantor may withhold any approval of the Alternate Project as provided in the foregoing paragraph.

C. Enforcement

FOURTH, the restrictions and covenants contained herein are binding on the Grantee, its successors and assigns, and shall run with the Premises, and are forever enforceable by the DEC (the "Beneficiary"). Said restrictions and covenants herein shall bind all owners, lessees, users and occupiers of the Premises or any part thereof, and their respective successors and assigns, as well all parties claiming by, through, or under them or any of them. All of the parties referred to in the immediately preceding sentence agree and covenant, for themselves and for their respective successors and assigns, to conform and observe said covenants and restrictions.

1. As it may be impossible to measure monetarily the damages which may accrue to the Beneficiary by reason of a violation of the provisions hereof, the Beneficiary shall be entitled to relief by way of injunction or specific performance, as well as any other relief available at law or in equity, to enforce the provisions hereof. The failure of the Beneficiary to enforce any provision hereof shall in no event be construed as a waiver of the right of the Beneficiary to

enforce any provision of this Deed as to the same or similar violation occurring prior to or subsequent to any such failure to enforce. No liability shall attach to the Grantor or any parent, subsidiary or other affiliate of Grantor, or any officer, director, shareholder, employee, member, manager, partner, agent, committee or committee member of any of them, (excepting, however, Grantee, its successors and assigns, and any subsequent owner, lessee, user or occupier of the Premises, or any part thereof, in breach hereof) or to the Beneficiary for failure to enforce the provisions hereof. If the Beneficiary successfully brings an action to extinguish a breach or otherwise enforce the provisions hereof, the costs of such action, including legal fees, shall become a binding, obligation of the owner, lessee, user and/or occupier of the Premises, or any part thereof, in breach hereof. Neither Grantee (its successors and assigns) nor any subsequent owner, lessee, user or occupier of the Premises, or any part thereof, may circumvent the remedies provided for herein or be relieved of their obligations and/or liabilities hereunder by conveying, transferring, or leasing the Premises, or any part thereof, or by assigning any rights or obligations hereunder.

2. The restrictions and covenants contained herein shall be inserted by Grantee, its successors and assigns, and any and all future owners of the Premises, in any deed, lease, easement, right of way or other legal instrument by which Grantee, its successors and assigns, and any and all future owners of the Premises, divests itself of either the fee simple title or any other lesser estate in the Premises or any portion thereof. Notwithstanding this provision, failure to include the restrictions and covenants contained herein in subsequent conveyances does not abrogate the status of such restrictions and covenants as binding upon the parties, their successors and assigns.

3. Grantee, for itself, its successors and assigns, and any and all future owners, lessees, users or occupiers of the Premises or any portion thereof, (i) covenants that it will not undertake or allow any activity on or use of the Premises that would violate the use restrictions and covenants contained herein and (ii) will indemnify, defend and hold harmless the Grantor, its successors and assigns for breach of the aforementioned covenant.

4. Grantor and Grantee agree and understand that the Grantee, by its acceptance of this Deed, agrees that, as part of the consideration for this Deed, the Grantee covenants and agrees for itself, its successors and assigns, forever, that this Deed is made and accepted upon each of the restrictions and covenants contained herein which restrictions and covenants shall be binding upon and enforceable against the Grantee, its successors and assigns, and any and all future owners, lessees, users and occupiers of the Premises or any part thereof, in perpetuity; and the covenants and restrictions set forth herein are a binding servitude on the Premises herein conveyed.

D. Modification and Termination

FIFTH, any modification or termination of the provisions hereof affecting any part of the Premises shall require the written consent of the DEC which consent shall not be unreasonably withheld, conditioned or delayed. Any modification or termination of the provisions hereof shall not become effective until the instrument evidencing such modification or termination has been

duly recorded in the Steuben County Clerk's Office.

1. Neither the provisions hereof nor any modification thereof shall be interpreted as permitting any action or thing prohibited by the applicable laws, ordinances, rules or regulations of any governmental authority having jurisdiction over the part of the Premises affected or by specific restrictions imposed by any other instrument relating to the Premises or to such part of the Premises.

2. No change of conditions or circumstances shall operate to amend the provisions hereof, and the provisions hereof may be modified or terminated only in the manner provided herein. The determination by any court of competent jurisdiction that any provision hereof is unenforceable, invalid or void shall not affect the enforceability or validity of any other provision hereof.

SIXTH, that Grantor covenants that Grantor has not done or suffered anything whereby the Premises have been encumbered in any way whatsoever and that Grantor, in compliance with Section 13 of the Lien Law, will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of any improvement and will apply the same first to the payment of any cost of any improvement before using any part of the total of the same for any other purpose.

SEVENTH, Grantee accepts the Premises in its "As Is" condition "with all faults" pursuant to the terms of the Transfer Agreement, the terms of which are incorporated herein by reference.

EIGHTH, any and all references herein to Grantee, and/or Grantee's successors and assigns, shall be deemed to include, and the covenants and restrictions herein shall be binding upon, any and all (i) owners, grantees, transferees, lessees, sublessses, users and occupiers of the Premises or any portion thereof, (ii) licensees, invitees, contractors, easement holders, mineral rights holders, employees, guests and other parties who may enter the Premises (or any portion thereof) or may have right to enter the Premises (or any portion thereof) and (iii) all parties claiming by, through or under any of the aforementioned parties referred to in this paragraph Eighth.

[THE REMAINDER OF THIS PAGE LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, Grantor has executed this Deed the day and year first above written.

INGERSOLL-RAND COMPANY

By: Barbara A Santoro
Name: Barbara A. Santoro
Title: Secretary

Agreed to and Accepted
this _____ day of August, 2005 by:

PAINTED POST DEVELOPMENT, LLC

By: _____
Jack E. Benjamin, Manager

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION

By: _____
David A. Munro, Assistant Attorney General
New York State Department of Law, Environmental Protection Bureau
on behalf of New York State Department of Environmental Conservation

VILLAGE OF PAINTED POST

By: _____
Edward A. Franklin, Jr., Mayor

PLEASE RECORD AND RETURN TO:

John A. Pappano, Esq.
Phillips Lytle LLP
3400 HSBC Center
Buffalo, New York 14203
Tel. (716) 847-5404

IN WITNESS WHEREOF, Grantor has executed this Deed the day and year first above written.

INGERSOLL-RAND COMPANY

By: _____
Name: _____
Title: _____

Agreed to and Accepted
this 29th day of August, 2005 by:

PAINTED POST DEVELOPMENT, LLC

By: _____
Jack E. Benjamin, Manager

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION

By: _____
David A. Munro, Assistant Attorney General
New York State Department of Law, Environmental Protection Bureau
on behalf of New York State Department of Environmental Conservation

VILLAGE OF PAINTED POST

By: _____
Edward A. Franklin, Jr., Mayor

PLEASE RECORD AND RETURN TO:

John A. Pappano, Esq.
Phillips Lytle LLP
3400 HSBC Center
Buffalo, New York 14203
Tel. (716) 847-5404

IN WITNESS WHEREOF, Grantor has executed this Deed the day and year first above written.

INGERSOLL-RAND COMPANY

By: _____
Name: _____
Title: _____

Agreed to and Accepted
this 29th day of August, 2005 by:

PAINTED POST DEVELOPMENT, LLC

By: _____
Jack E. Benjamin, Manager

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION

By: David A Munro
David A. Munro, Assistant Attorney General
New York State Department of Law, Environmental Protection Bureau
on behalf of New York State Department of Environmental Conservation

VILLAGE OF PAINTED POST

By: _____
Edward A. Franklin, Jr., Mayor

PLEASE RECORD AND RETURN TO:

John A. Pappano, Esq.
Phillips Lytle LLP
3400 HSBC Center
Buffalo, New York 14203
Tel. (716) 847-5404

STATE OF _____)

STATE OF New Jersey)
COUNTY OF Bergen) ss.:

On the 12th day of October in the year 2005, before me, the undersigned, a Notary Public in and for said State, personally appeared Barbara A. Santoro, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Meryl J. Miller
Notary Public

MERYL J. MILLER
Notary Public of New Jersey
My Commission Expires Jan. 19, 2006

STATE OF NEW YORK)
COUNTY OF STEUBEN) ss.:

On the ____ day of _____ in the year 2005, before me, the undersigned, a Notary Public in and for said State, personally appeared Jack E. Benjamin, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public

STATE OF NEW YORK)
COUNTY OF _____) ss.:

On the ____ day of _____ in the year 2005, before me, the undersigned, a Notary Public in and for said State, personally appeared David A. Munro, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public

STATE OF _____)
COUNTY OF _____) ss.:

On the ____ day of _____ in the year 2005, before me, the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public

STATE OF NEW YORK)
COUNTY OF STEUBEN) ss.:

On the 29th day of August in the year 2005, before me, the undersigned, a Notary Public in and for said State, personally appeared Jack E. Benjamin, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

MUNESH PATEL
Notary Public, State of New York
No. 02PA6109397
Qualified in Monroe County
Commission Expires 05/10/2008

_____
Notary Public

STATE OF NEW YORK)
COUNTY OF _____) ss.:

On the ____ day of _____ in the year 2005, before me, the undersigned, a Notary Public in and for said State, personally appeared David A. Munro, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public

COUNTY OF _____) ss.:

On the ____ day of _____ in the year 2005, before me, the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public

STATE OF NEW YORK)
COUNTY OF STEUBEN) ss.:

On the ____ day of _____ in the year 2005, before me, the undersigned, a Notary Public in and for said State, personally appeared Jack E. Benjamin, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public

STATE OF NEW YORK)
COUNTY OF ALBANY) ss.:

On the 11TH day of OCTOBER in the year 2005, before me, the undersigned, a Notary Public in and for said State, personally appeared David A. Munro, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Lawrence A. Rappoport
Notary Public

LAWRENCE A. RAPPOPORT
Notary Public, State of New York
Qualified in Albany County
No. 4513713
My Commission Expires March 30, 19--
DECEMBER 31, 2005

STATE OF NEW YORK)
COUNTY OF STEUBEN) ss.:

STATE OF NEW YORK)
COUNTY OF STEUBEN) ss.:

On the 29th day of August in the year 2005, before me, the undersigned, a Notary Public in and for said State, personally appeared Edward A. Franklin, Jr., personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public

MUNESH PATEL
Notary Public, State of New York
No. 02PA6109397
Qualified in Monroe County
Commission Expires 05/10/2008

SCHEDULE A
DESCRIPTION OF PREMISES
(Ingersoll-Rand Foundry Parcel)

ALL THAT TRACT OR PARCEL OF LAND, situate in the Town of Erwin and Village of Painted Post, Steuben County, New York and being more particularly bounded and described as follows:

Beginning at a concrete highway monument on the easterly highway limit of Interstate Route 86-State Route 17 at its intersection with the southwesterly limit of Chemung Street; thence in a southeasterly direction along the last mentioned limit of Chemung Street, following a curve to the right having a radius of 3787.00 feet, an arc length of 200.99 feet and producing a chord of S 45º 05' 58" E, 200.97 feet to a point of tangency; thence S 43º 25' 14" E, continuing along said southwesterly limit of Chemung Street, passing through a concrete monument at a distance of 443.94 feet, a total distance of 2956.69 feet to an iron pin set, said iron pin being the northeasterly corner of lands now or formerly owned by "Rutledge" (L.1351, P. 290) and located 195.00 feet northwesterly, as measured along said Chemung Street from its intersection with the northwesterly limit of Charles street; thence in a southwesterly direction along said lands of "Rutledge" and lands now or formerly owned by "Strong", "Hamel", "Law", "Leipold" and "Winters", as more fully shown on the subject map of which this description is written and stated at the end, the following three (3) courses and distances:

1) S 46º 15' 27" W, a distance of 173.87 feet to an iron pin found;

2) S 49º 16' 15" W, a distance of 93.54 feet to an iron pin found;

3) S 51º 02' 10" W, a distance of 42.46 feet to an iron pin found on a line of lands now or formerly owned by "Emo" (L. 1123, P. 196); thence along said lands of "Emo" the next two (2) courses and distances:

1) N 39º 46' 19" W, a distance of 18.00 feet to an iron pin found;

2) S 49º 11' 20" W, a distance of 77.08 feet to an iron pin found on a line of lands now or formerly owned by "Smith & Miraglia" (L. 1394, P. 303); thence N 40º 46' 24" W, along said "Smith & Miraglia" lands and lands now or formerly owned by "Schirmer" (L.796, P.547), "Gestwicki" (L. 839, P.53) and "Kenyon" lands (L. 844, P. 555) a distance of 275.10 feet to an iron pin found; thence S 51º 23' 30" W, along the northwesterly line of "Kenyon", a distance of 147.07 feet to a concrete monument on the northeasterly limit of West Water Street; thence N 26º 18' 11" W, along said West Water Street, a distance of 229.05 feet to a point, said point determined to be in line with the "Foundry Gate" which is reportedly where the public ownership of West Water Street terminates per documentation on file with the Village of Painted Post Offices; thence S 63º 41' 49" W, along the terminus of West Water Street as stated, a distance of 60.00 feet to a point on the southwesterly limit of said West Water Street; thence S 26º 18' 11" E, along said West Water Street, a distance of 239.61 feet to a point; thence S 71º20'18" W, through lands now or formerly owned by Ingersoll-Rand Company (L.1667, P.312), a distance of 673.87' to a point on the first above mentioned highway limit of Interstate Route 86-State Route 17; thence along said highway limit the following four (4) courses and distances:

1) Along a curve to the right having a radius of 4453.66 feet, an arc length of 1167.00 feet and producing a chord of N 25º 18' 15" W, a distance of 1163.67 feet to a concrete highway monument;

2) N 16º 12' 50" W, a distance of 343.28 feet to a point;

3) N 13º 16' 12" W, a distance of 1262.34 feet to a point;

4) thence N 09º 48' 10" W, continuing along said highway limits, a distance of 59.59 feet to the point or place of beginning, containing 48.772 acres of land, more or less.

SCHEDULE B
VILLAGE ZONING LAW SECTION 280.18 AND DEFINITIONS

Attached hereto

PLANNED DISTRICT - One or more commercial, residential or industrial uses proposed as a unit, in conformance with Article VI.

§ 280.15 **NAMES OF ZONING DISTRICTS**

B. The following floating zones shall be applicable anywhere that the stated conditions and criteria are met:

APOD - Aquifer Protection Overlay District
FPPD - Flood Plain Protection District
PRD - Planned Residential District
PCD - Planned Commercial District
PDD - Planned Development District

M. Planned Development District (PDD) Intent: See Article VI.

§ 280.18 **USE REGULATIONS - SCHEDULE OF USES TABLE**

The following use regulations apply to the principal and accessory uses as listed in the Schedule of Uses Table.

SCHEDULE OF USES TABLE

Abbreviations:

P - Permitted
SP - Site Plan Approval Required
SU - Special Use Permit Required
Blank - Not Permitted

LDR - Low density residential
MDR - Medium density residential
UCR - Urban Center residential
UC - Urban Center
B - Business
I - Industrial
PD - Planned District

BUSINESS USES	LDR	MDR	UCR	UC	B	I	PD
Arcade					SU		
Automobile repair garage					SP	SP	
Automobile sales area					SU	SU	
Bar or night club					SP		
Bowling alley					SP	SP	
Car washing station						SU	
Commercial vehicle					P	P	SP

Convenience/Mini-market w/ gas					SU	SU	
Convenience/Mini-market w/o gas			SP	SP	SP	SP	SP
Day care center	SU	SU	SU	SU	SU	SU	SU
Day care, family home	SU	SU	SU	SU	SU		SU
Drive-in movie						SP	
Equipment rental or sales yard					SU	P	
Funeral home		SU	SU	SU	SU		SU
Gasoline filling station					SU	SU	
Grocery store			SP	SP	SP	SP	
Home occupation - Off-site	P	P	P	P	P		SP
Home occupation - On-site	SU	SU	SU	SU	SP		SU
Laundry or dry cleaning plant					SU	SU	
Newsrack	SU	SU	SU	SU	SU	SU	SU
Low-profile business				SU	SP	SP	SP
Mixed use	SU	SU	SU	SU	SU	SU	SU
Newspaper offices and printing shops					SU	SU	
Offices - general				SU	SP	SP	SP
Offices - one practicing professional in existing building	SU	SU	SU	SU	SP	SP	SP
Offices - more than one practicing professional				SP	SP	SP	SP
Personal service establishments				SU	SU		SU
Planned commercial districts					SP	SP	SP
Restaurant					SP	SP	SU
Retail business or service, not otherwise specifically mentioned herein					SP	SP	
Riding academy							
Roadside stand with peddler's license					P	P	
School conducted for profit					SU		
Self-service laundry					SU		
Storage yards for equipment					SP	SP	
Theater or concert hall					SP	SP	
Veterinarian office, animal hospital or kennels					SP	SP	
Wholesale business or service, not otherwise specifically mentioned herein					SP	SP	SU

INDUSTRIAL USES	LDR	MDR	UCR	UC	B	I	PD
Contractors yard and equipment						SP	
Manufacture, fabrication, extraction, assembly, warehousing and other handling of material						SP	SP
Mining							
Mixed use	SU	SU	SU	SU	SU	SU	SU
Research laboratories					SP	SP	SP
Storage facility, indoor					SP	SP	SU
Storage facility, outdoor					SU	SU	
Trucking, wholesale warehouse terminals						SP	SU
RESIDENTIAL USES	LDR	MDR	UCR	UC	B	I	PD
Mixed use	SU	SU	SU	SU	SU	SU	SU
Housing, Non-Transient							
Dwelling, one-unit, detached includes Residential Designed Manufactured Home, Modular Home, Sectional Home	P	P	P	P			SP
Cluster Development	SP	SP	SP	SP			SP
Dwelling, one-unit, attached	P	P	P	P			SP
Dwelling, two-unit	P	P	P	P			SP
Dwelling, multi-unit			SU	SU			SP
Group home	SP	SP	SP	SP			SP
Manufactured home park							
Manufactured home, substandard							
Planned Residential District	SP	SP	SP	SP			SP
Rooming house			SU	SU			SU
Shared housing	P	P	P	P			SP
Standard Designed Manufactured Home ("single-wide")			SU				
Housing, Transient							
Bed & Breakfast	SU	SU	SU				SU
Hotel					SP		SU
Motel					SP		SU
Nursing or convalescent home		SP	SP	SP	SP	SP	SP
Vacation Resort							

GENERAL USES	LDR	MDR	UCR	UC	B	I	PD
Accessory use/building/structure on the same lot	P	P	P	P	P	P	SP
Accessory use/building/structure on a separate lot	SU	SU	SU	SU	SU	SU	SU
Agriculture, for crops					SU	SP	
Agriculture, manufacture						SU	SU
Agriculture, nursery					SP		
Animals, raising or keeping of							
Cemetery		SP	SP	SP	SP	SP	SP
Church or other place of worship		SP	SP	SP	SP	SP	SP
Club, membership					SU	SU	
Communication Tower (new)						SP	SP
Communication Tower (co-location on existing tower)	SU	SU	SU	SU	SU	SP	SP
Crematory					SP	SP	SP
Cultural facilities (library, art gallery, museum, etc.)		SP	SP	SP	SP	SP	SP
Golf course or country club		SP	SP	SP	SP	SP	SP
Hospital or sanitarium		SP	SP	SP	SP	SP	SP
Institutional or philanthropic use		SP	SP	SP	SP	SP	SP
Nursery school		SU	SU	SU	SU		SU
Private, public or parochial school		SU	SU	SU	SU	SU	SU
Public utility or transportation use							
a) office					P	P	SP
b) repair, service and storage					SU	P	SP
Satellite dish (<3' in diameter ground-mounted installations)		P	P	P	P	P	SP
Satellite dish (>3' in diameter and/or roof-mounted installations)		SU	SU	SU	P	P	SU

VILLAGE OF PAINTED POST
280.28 Density Control Schedule* (Area bulk Schedule)

ARTICLE II
INTERPRETATION AND DEFINITIONS

§ 280.7 INTERPRETATION AND APPLICATION

A. **LEGISLATIVE INTENT.** In their interpretation and application, the provisions of this Zoning Law shall be held to be minimum requirements adopted to achieve the intent of this Law as set forth in Article I.

B. **ANNULMENT OF PREVIOUS ORDINANCES.** This Zoning Law shall annul and supercede any previously adopted zoning laws and ordinances of the Village of Painted Post.

C. **NON-INTERFERENCE AND PRECEDENCE.** Except as noted in Section 280.7B of this Law, this Zoning Law shall not interfere with, abrogate, annul, or repeal any ordinance or any rule, regulation, or permit previously or hereafter enacted, adopted, or issued pursuant to law; provided that, unless specifically excepted, where this Zoning Law imposes greater restrictions its provisions shall control.

D. **SEPARATE VALIDITY.** If any section, subsection, paragraph, clause, or other provisions of this Law shall be held to be invalid, the invalidity of such section, subsection, paragraph, clause, or other provision shall not affect any of the other provisions of this Law.

E. The following rules of construction of language shall apply to the text of this Law.

1. Words used in the present tense include the future tense.
2. Words used in the singular include the plural, and words used in the plural include the singular.
3. The word "lot" includes the word "plot" or "parcel."
4. The word "person" includes an individual, firm or corporation.
5. The word "shall" is always mandatory; the word "may" is always permissive.
6. The words "used" or "occupied" as applied to any land or building shall be construed to include the words "intended, arranged or designed to be used or occupied."
7. A "building" or "structure" includes any part thereof.
8. The phrases, "to erect," "to construct," and "to build" a building, all have the same meaning and includes to excavate for a building and to relocate a building by moving it from one location to another.

§ 280.8 DEFINITIONS

The words or phrases as used in this Law are defined as follows:

ACCESSORY BUILDING: See "BUILDING, ACCESSORY."

ACCESSORY USE: See "USE, ACCESSORY."

AGRICULTURE, FOR CROPS: Any parcel of land used commercially for the raising of fruits, vegetables and the like, but not for the raising or keeping of animals.

AGRICULTURE, MANUFACTURE: Any parcel of land used for the processing of crops and livestock, such as a cheese factory, tannery, food processing, and the like.

AGRICULTURE, NURSERY: A wholesale or retail business which sells primarily trees, shrubs, plants and other landscaping materials and may sell related lawn and garden supplies and ornaments as an accessory use.

ANIMALS, RAISING OR KEEPING OF: Any parcel of land used for the raising of animals for commercial purposes, including livestock, horses, poultry, dairy cattle, bees, fur-bearing animals, and other such farm animals, OR for the raising and keeping of wild animals including poisonous animals, skunks, pigeons, fox, mink, birds and the like, BUT excluding pets and kennels.

ALTERATION: As applied to a building or structure, a change or rearrangement in the structural parts or existing facilities of such building or structure, or any enlargement thereof, whether by extension on any side or by any increase in height, or the moving of such building or structure from one location to another.

ANTENNA: A system of electrical conductors that transmit or receive telephone, television or radio frequency waves. Such devices shall include cellular, paging and personal communication services(PCS) and satellite dishes.

AQUIFER: An underground water bearing volume of permeable rock, sand or gravel.

AQUIFER PROTECTION OVERLAY DISTRICTS: Those areas as defined below which contribute water to the Village of Painted Post public and community water supply.

APOD #1: WELL HEAD PROTECTION AREA: The land area immediately around a well which contributes water to the public and community wells as shown on the Aquifer Protection Overlay District Map. For all community wells and existing public wells, this area is defined as a circle centered on the well with a two hundred (200) foot radius. For new public wells, water at the outermost boundary of the Wellhead Protection Area will reach the wells within a minimum of one-hundred (100) days.

APOD #2: AQUIFER RECHARGE AREA: The remaining aquifer area outside APOD #1 Wellhead Protection Area which contributes water to the Village of Painted Post public wells or other municipal wells.

APOD#3: WATERSHED TRIBUTARY AREA: The upland watershed which contributes water to APOD #2 Aquifer Recharge Areas as shown on the Aquifer Protection Overlay District Map.

ARCADE: A business offering one or more mechanical, electrical or electronic machine(s) or device(s) used or designed to be operated for entertainment or as a game, and either activated by the insertion of a coin, or for the operation or use of which a charge is made.

AREA, BUILDING: The total of covered areas taken on a horizontal plane at the main grade level of the principal building and all accessory buildings exclusive of terraces, and uncovered steps.

ATTIC: That space in a building which is immediately below and wholly or partly within the roof framing. An attic with a finished floor shall be counted as a half story in determining the permissible number of stories. (Also see "STORY, HALF").

AUTOMOBILE SALES AREA: A premises, including open areas other than a street or road and showrooms enclosed within a building, used for the storage, display or sale of new or used automobiles, trucks and cargo trailers.

AZIMUTH: The angular distance between true south and the point on the horizon directly below the sun. Values to the east of south (in the morning) shall be negative. Values to the west os south (in the afternoon) shall be positive.

BASEMENT: A story partly below finished grade, but having at least one-half of its height measured from floor to ceiling, but no less than four feet, above average finished grade. A basement shall be counted as one story determining the height of a building in stories. (Also see "CELLAR").

BUILDING: Any structure which is permanently affixed to the land, has one or more floors and a roof, and is intended for the shelter, housing or enclosure of persons, animals or chattel. A building includes attached deck(s) and porch(es).

BUILDING, ACCESSORY: A building detached from and subordinate to a principal building and used for purposes customarily incidental to those of the principal building. For example, a garage for one or two cars is permitted wherever residences (the principal use) are allowed.

BUILDING, DETACHED: A building surrounded by open space on the same lot.

BUILDING, PRINCIPAL: A building in which is conducted the main or principal use of the lot on which said building is situated.

BUILDING, SEMI-DETACHED: A building attached by a party wall to another building normally of the same type on another lot, but having one side yard.

BUILDING GROUP: A group of two or more principal buildings and any buildings accessory thereto, occupying a lot in one ownership and having any yard in common.

BUILDING HEIGHT: The vertical distance measured from the average finished grade to the highest point of such building or structure.

BUILDING LINE: The rear line of the required front yard setback.

BUILDING, PRINCIPAL: A building in which is conducted the main or principal use of the lot on which said building is situated.

BUILDING, SEMI-DETACHED: A building attached by a party wall to another building normally of the same type on another lot, but having one side yard. See "HOUSING, NON-TRANSIENT."

BULK: A term used to describe size, volume, area, and shape of buildings and structures. Included in such description is the physical relationship of exterior walls or a building or structure's location to lot lines, other buildings and structures or other walls of the same building. All open spaces required in connection with a building, other structure or tract of land are also included in this term.

BULK, NONCONFORMING: That part of a building, other structure or tract of land which was lawfully existing prior to the adoption or amendment of this chapter but which does not conform to one (1) or more of the applicable building regulations of this Zoning Law by reason of such adoption or amendment.

CARRIER: A provider of communications service.

CELLAR: Any space in a building the structural ceiling level of which is less than four feet above average finished grade where such grade meets the exterior walls of the building. A cellar shall not be counted in determining the permissible number of stories. A cellar shall not be occupied as a dwelling unit. (Also see "BASEMENT").

CLUB, MEMBERSHIP: An organization catering exclusively to members and their guests, or premises and buildings for social, educational, recreational or athletic purposes, which are not conducted primarily for gain, providing there are not conducted any vending stands, merchandising or commercial activities except as required generally for the purposes of such club.

CO-LOCATION: The use of a communications tower by more than one carrier.

COMMERCIAL VEHICLE: A vehicle of more than one and one half ton capacity used for the transportation of persons or goods primarily for gain; or a vehicle of any capacity carrying any sign or lettering of a commercial nature exceeding one square foot in area.

COMMUNICATIONS TOWER: A structure on which transmitting and/or receiving antennae are located. This includes but is not limited to freestanding towers, guyed towers, monopoles, and similar structures.

A. FREESTANDING COMMUNICATIONS TOWER - Freestanding lattice tower onto which antennas are affixed.

B. GUYED TOWER - Lattice tower supported by wire anchors.

C. MONOPOLE - A single pole of variable cross section onto which antennas are affixed.

COMMUNITY POLE: A sign owned and maintained by the Village Board or by a group of business owners as approved by the Village Planning Board and which sign contains several directional signs for the purpose of directing persons to business and community establishments within the Village. Includes "monument sign."

CONTIGUOUS PARCEL: A tract of land under the control of the applicant or his agent that is not divided by any natural or manmade barriers such as existing roads, highways, railroad tracks, areas with slopes greater than thirty-five (35%), and rivers, and that is not totally bisected by any other water bodies.

CONTRACTOR'S YARD: Any space, whether inside or outside a building, used for the storage or keeping of construction equipment, machinery, or vehicles, or parts thereof, which are in active use by a construction contractor.

COVERAGE: That lot area or percentage of lot area covered by buildings or structures, including accessory buildings and structures, but not including detached solar collectors used by solar energy systems.

DAY CARE CENTER: A facility duly permitted by the New York State Office of Children and Family Services or successor for the care of three (3) or more persons away from their homes for more than three (3) but less than twenty-four (24) hours each day with or without compensation. This definition includes "children's day care center" and "adult day care center." A DAY CARE CENTER is also a facility providing day care services under an operating certificate issued by the NYS Department of Mental Health or successor. This does not include "family day care," "nursery school," or "day camp" as defined by the New York State Sanitary Code, a school program operated for the primary purpose of religious education, or a facility operated by a public school district.

DAY CARE, FAMILY HOME: A one family dwelling in which day care is provided for persons in accordance with NYS Office of Children and Family Services or successor definitions and regulations.

DISTRIBUTOR: The person, entity or agent or representative thereof responsible for placing and maintaining a newsrack in a public right-of-way including, without limitation, the grassed or paved curb area and sidewalks.

DRIVE-IN MOVIE: An open lot or part thereof, which appurtenant facilities devoted primarily to the showing of moving pictures, on a paid admission basis, to patrons seated in automobiles or on outdoor seats.

DWELLING, ONE-FAMILY: See " HOUSING, NON-TRANSIENT."

DWELLING, TWO-FAMILY: See "HOUSING, NON-TRANSIENT."

DWELLING, MULTI-FAMILY: See "HOUSING, NON-TRANSIENT."

DWELLING GROUP: See "HOUSING, NON-TRANSIENT."

DWELLING UNIT: One or more rooms connected together consisting of a , separate, independent housekeeping establishment for owner occupancy, rental or lease, that contains independent cooking, sanitary and sleeping facilities for one family. This shall include sectional, modular and standard designed manufactured home units, and residential designed manufactured home units provided they meet the standards of this law and the New York State Building and Fire Prevention Code. It shall not include motel, hotel or lodging establishments for transient occupancy, substandard mobile homes or trailers.

EASEMENT: A vested or acquired right to use land other than as a tenant for a specific purpose, such right being held by someone other than the owner who holds title to the land.

FAMILY: Any single person or group of persons who live together in a one dwelling unit and maintain a common household.

FINISHED GRADE: The elevation at which the finished surface of the surrounding lot intersects the walls or supports of a building or other structure. If the line of intersection is not reasonably horizontal, the finished grade - in computing height of buildings and other structures or for other purposes - shall be the average elevation of all finished grade elevations around the periphery of the building, except that this average shall not exceed one-half (½) of the floor-to-ceiling height.

FLOOR AREA: The aggregate sum of the gross horizontal areas of the several floors of the building or buildings, measured from the exterior walls or from the centerlines of walls separating the buildings as defined by the NYS Fire Protection and Building Code.

GARAGE, SERVICE AND REPAIR: An enclosed building for the indoor repair of motor vehicles including painting and the sale of parts and accessories. A junkyard or auto salvage yard is not to be construed as a garage.

GASOLINE FILLING STATION: An area of land, including structures thereon, or any building or part thereof, with pumps and storage tanks that is used primarily for the storage and retail sale of gasoline or any other motor vehicle fuel and for other uses accessory thereto. The sale of lubricants, motor vehicle accessories, washing (which does not require mechanical equipment), or otherwise servicing motor vehicles, are permitted accessory uses.

GRAVEL PIT: See "MINING."

HAZARDOUS SUBSTANCES: All substances defined in 6NYCRR Part 597 and all hazardous wastes as defined in 6NYCRR Part 371.

HOME OCCUPATION: A business use conducted as an accessory use which is clearly incidental to or secondary to the residential use of a dwelling unit and does not change the character thereof, and is carried on wholly within the enclosed walls of a dwelling unit or accessory building by the occupant(s) of such dwelling unit, and in which not more than one (1) person not residing in such dwelling unit is employed on site. Home Occupations are either "off site" or "on site."

> HOME OCCUPATION, OFF SITE SERVICE: A home occupation in which the owner meets customers off premises or electronically and, thus, does not generate additional traffic. A distributorship whose primary function is the processing of orders for merchandise and which does not involve retail sales or a high volume of stock and merchandise on the premises may be deemed an off site home occupation, provided such use meets the intent and all standards of this section.
>
> HOME OCCUPATION, ON SITE SERVICE: A home occupation in which the owner meets customers on premises or receiving a high volume of stock and merchandise and, thus, the business generates additional traffic.

HOSPITAL: A building containing beds for four or more patients, and used for the diagnosis, treatment, or other care of ailments, and shall be deemed to be limited to places for the diagnosis, treatment, or care of human ailments.

HOTEL: See "HOUSING, TRANSIENT."

HOUSE TRAILER: See "MOBILE HOME, SUBSTANDARD."

HOUSING, NON-TRANSIENT: A building designed or used principally as the permanent living quarters for one or more families. Such housing is also known as a "residence" but shall not be deemed to include a motel, or hotel or other accommodations used for transient occupancy and shall include the following:

A. DWELLING, ONE-UNIT DETACHED - A building containing one (1) dwelling unit only on one lot.

B. DWELLING, ONE-UNIT ATTACHED - A building containing two (2) dwelling units on separate lots. This includes "zero-lot line" one unit homes.

C. DWELLING, TWO-UNIT - A building containing two (2) dwelling units on one lot. This includes "duplex."

D. DWELLING, MULTI-UNIT- A building or series of buildings comprising three (3) or more dwelling units with shared entrances and other essential facilities and services on one lot.

E. DWELLING GROUP - A group of three (3) or more, but not over ten (10), attached one - or two-unit dwellings with common walls between.

F. GROUP HOME - A one unit dwelling in which resides a group of mentally and/or physically challenged persons, not related by blood, marriage or adoption who maintain a common household as governed by state law. "Group home" includes "community residence."

G. ROOMING HOUSE - A one unit dwelling containing a common kitchen and dining facility, in which at least three (3) sleeping rooms are offered for rent, with or without meals. A "lodging house"and "boarding house"shall be deemed a "rooming house."

H. SHARED HOUSING -A one unit dwelling in which persons not related by blood, marriage or adoption live together and maintain a common household.

I. TOWNHOUSE - A building consisting of three or more attached one unit dwellings each having separate entrances and common vertical walls on separate lots.

HOUSING, TRANSIENT - Any buildings that serve as principle lodging or residence for more than one transient individual that occupies the such building briefly and temporarily. Such housing shall include the following:

A. BED & BREAKFAST- A one unit dwelling in which sleeping rooms are provided by the owner for compensation, for the accommodation of 15 or fewer transient guests and the entire service is included in one stated price. A "tourist home" shall be deemed a "bed & breakfast."

B. HOTEL - A building, or any part thereof, which contains living and sleeping accommodations for more than fifteen (15) transient occupancy for compensation, has a common exterior entrance or entrances and which may contain one (1) or more dining rooms.

C. MOTEL - A building or group of buildings not over two stories in height containing individual living and sleeping accommodations for hire, each of which is provided with a separate exterior entrance and a parking space and is offered for rental and use principally by motor vehicle travelers. The term "motel" includes but is not limited to "auto court," "motor hotel," "motor court," "motor inn," "motor lodge," "tourist court,""tourist cabin" or "roadside hotel."

D. VACATION RESORT - Any area of land on which are located two or more cabins, cottages or group of buildings, containing living and sleeping accommodations hired out for compensation, which has a public lobby serving the guests, and may contain one or more dining rooms and recreation facilities of a design and character suitable for seasonal or temporary living purposes, regardless of whether such structures or other accommodations actually are occupied seasonably or otherwise.

JUNK YARD: An area of land with or without buildings used for or occupied by the storage, keeping, or abandonment of junk, including scrap metals or other scraps, used or salvaged building materials, or the mantling, dismantling, demolition, or abandonment of automobiles or other vehicles or machinery or parts thereof. This includes "auto salvage yard," "dump," "auto junkyard,"and "solid waste disposal facility."

KENNEL: Any place at which there are kept four or more dogs or cats more than four months of age or any number of such animals that are kept for the primary purpose of sale or for the boarding, care or breeding for which a fee is charged or paid.

LANDFILL, SANITARY: A designated area, where solid waste may be placed for disposal, under the direction and supervision of a designated person; which area is located and operated in compliance with the requirements of the State.

LOT: A contiguous parcel of land considered as a unit, devoted to a specific use or occupied by a building or group of buildings that are united by a common interest, use or ownership, and the customary accessories and open spaces belonging to the same. A lot shall abut and be accessible from a public or private street.

LOT, CORNER: A lot situated at the junction of and adjacent to two or more intersecting streets when the interior angle of intersection does not exceed 135 degrees.

LOT COVERAGE: See "COVERAGE."

LOT, DEPTH OF: The mean distance from the lot frontage to its rear line.

LOT LINE, FRONT: A lot line which is coincident with the right-of-way line of a public street or which is measured twenty (20) feet from the edge of the road surface of a private road.

LOT LINES: The lines bounding a lot as defined herein.

LOT, THROUGH: A lot which faces on two streets at opposite ends of the lot and which is not a corner lot.

LOT WIDTH - The width along the building line.

LOW-PROFILE BUSINESS: A small business which is compatible with a residential area in the following respects:

A. Is carried on by the proprietor and not more than three (3) paid employees.

B. Has no more than three (3) clients or customers at one time, usually by appointment.

C. Does not operate during the nighttime hours 10:00 p.m. to 8:00 a.m.

D. Does not create undue traffic or parking problems.

E. Does not require more frequent trash or garbage collection than residences in the same district.

F. Does not create excessive noise, dirt, odor or electrical interference.

MANUFACTURED HOME, RESIDENTIAL DESIGNED: A single family dwelling built according to the Federal Manufactured Housing Construction and Safety Standards (24 CFR 3280) HUD Code, which meets or exceeds the following criteria. This includes the term "double-wide."

A. The manufactured home has a minimum width over twenty (20) feet (multi-section)

B. The manufactured home has a minimum of nine hundred (900) square feet of enclosed living area.

C. The pitch of the roof has a minimum nominal 3/12 pitch; and has a type of shingle commonly used in standard residential construction.

D. The exterior siding consists of vinyl or aluminum lap siding, wood, masonite, or other materials similar to the exterior siding commonly used in standard residential construction.

E. All towing devices, wheels, axles, and hitches must be removed.

F. The front of the dwelling is parallel to the street.

G. Permanent landing and steps with handrails are required at each exterior doorway. The structure must include steps which lead to the ground level.

MANUFACTURED HOME, STANDARD DESIGNED: A single family dwelling built according to the Federal Manufactured Housing Construction and Safety Standards (24 CFR 3280) HUD Code, which does not meet the criteria of a Residential Designed Manufactured Home. This includes the term "single-wide."

MOBILE HOME, SUBSTANDARD: A single family dwelling that is wholly, or in part, fabricated in an off-site manufacturing facility for installation or assembly at the building site, designed to be a permanent residence, and built prior to the enactment of the Federal Manufactured Housing Construction and Safety Standards Act of June 15, 1976.

MANUFACTURED/MOBILE HOME PARK: A contiguous parcel of land, which is planned and improved specifically for such a purpose, on which two (2) or more manufactured/mobile homes (with or without the wheels and axles in place) are located. Such a park consists entirely of manufactured/mobile homes, each located on a site leased or rented to its occupants who either own, rent, or lease the living unit as a permanent residence.

MINING: Excavation of earth materials for commercial purposes such as gravel pits, rock quarrying, stripping of topsoil, subsoil removal and/or the removal of such materials for sale other than what may be required in the erection of buildings on site.

MIXED USE: A building or a lot used for more than one permitted principal use.

MODULAR HOME: A dwelling unit constructed off-site, consisting of two or more segments and designed to be permanently anchored to a foundation, to become a fixed part of the real estate and which meets all State requirements. This includes the term "sectional home."

MOTEL: See "HOUSING, TRANSIENT".

NEWSRACK: Any self-service or coin-operated box, container, storage unit or other dispenser installed, used or maintained for the display and distribution or sale of newspapers or other news or informational periodicals. This includes "honor box, " "newspaper box," or "real estate box."

NON-CONFORMING BULK: See "BULK, NONCONFORMING."

NONCONFORMING USE: See "USE, NONCONFORMING."

NURSERY SCHOOL: A non-public school organized for the purpose of providing regular daytime care or instruction for three or more children less than seven years of age for less than three hours per day, (two sessions may be held daily), as registered and certified by the NYS Education Department. This includes "day nursery" or "kindergarten" but does not include "day care center."

NURSING OR CONVALESCENT HOME: A building where persons are lodged and furnished with meals and long-term or permanent nursing care as defined by the NYS Department of Social Services or successor. This definition includes "assisted care living units," "health care services facility," and "home for the aged" but does not include "hospital," or "halfway home."

PARKING SPACE: An off-street space available for the parking of one motor vehicle exclusive of passageways and driveways appurtenant thereto and giving access thereto, and having direct access to a street or alley.

PERSONAL SERVICE ESTABLISHMENTS: Establishments which provide services to an individual consumer for compensation including but not limited to barber shops, beauty shops, shoe repair shops and other uses of a similar nature.

PETROLEUM BULK STORAGE REGULATIONS: New York State's standards and regulations of petroleum administered by the New York State Department of Environmental Conservation as defined in 6NYCRR Parts 611 through 614.

PLANNED RESIDENTIAL DISTRICT - A form of residential development characterized by a unified site design and providing density increases, a mix of building types and common open space. It permits the calculation of densities over the entire parcel and involves additional requirements as set forth in Article V.

PREMISES: A lot together with all the buildings and uses thereon.

PROFESSIONAL OFFICE: An office operation involving the practice of or associated with medicine, dentistry, law, architecture, engineering and similar fields.

RESIDENCE: A building, or any part of a building, which contains living and sleeping accommodations for permanent occupancy. "Residence," therefore, includes all. non-transient housing. However, "residence" shall not include the following:

A. Transient housing, such as hotels, and motels.

B. That part of a mixed use which is used for any non-residential uses.

RIDING ACADEMY: Any establishment where horses are kept for riding, driving or stabling for compensation.

RIGHT-OF-WAY: The property under ownership or easement normally used for the movement of vehicles, including but not restricted to the pavement area.

ROADSIDE STAND: A light structure with a roof, either attached to the ground or movable, used for the sale of local produce on a seasonal basis.

SATELLITE DISH: An antenna capable of receiving communications from space. Includes "satellite dish."

SETBACK: The required distance in feet between any building and any lot line of the lot on which it is located.

SIGN: Any structure or part thereof, or any device attached to a structure or painted or represented on a structure which shall display or include any lettering, wording, model, drawing, picture, banner, flag, insignia, device, marking, or representation used as, or which is in the nature of, an announcement, direction or advertisement. A "sign" includes a billboard, but does not include the flag or insignia of any nation or of any governmental agency or of any political, educational, charitable, philanthropic, civic, professional, religious or similar organizations, campaign, drive, movement, or event which is temporary in nature.

This definition shall not include official notices issued by a court or public body or officer, or directional, warning or information signs or structures required by or authorized by law or by federal, state, county, town or Village authority.

SIGN, BUSINESS: A "sign" which directs attention to a business or profession conducted on the premises. A "For Sale" sign or a "To Let" sign relating to the property on which it is displayed shall be deemed a "business sign."

SIGN, DIRECTIONAL: A "sign" which directs attention to a business, commodity, service or entertainment conducted, sold, or offered elsewhere than on the premises.

SIGN, DIRECTLY ILLUMINATED: A sign which incorporates any artificial lighting as an inherent part or feature or which depends for its illumination on transparent or translucent material or electricity or radio activated or gaseous material or substance.

SIGN, FLASHING: An illuminated sign on which the artificial lighting is not maintained stationary or constant in intensity and color at all times while in use.

SIGN, INDIRECTLY ILLUMINATED: A sign illuminated with an artificial light which is separated from or is not an intrinsic part of the sign itself.

SIGN, REPRESENTATIONAL: Any three-dimensional sign which is built so as to physically represent the object advertised.

SIGN AREA: The area within the shortest lines that can be drawn around the outside perimeter of a sign including all decorations and lights, but excluding the supports if they are not used for advertising purposes. All faces of the sign shall be counted in computing the area.

SIGN TEMPORARY: A sign which directs attention to a special activity or entertainment to be conducted for a limited time only.

SINGLE OWNERSHIP: Possession of land under single or unified control, whether by sole, joint, common or other ownership or by a lease having a term of not less than thirty years, regardless of any division of such land into parcels for the purpose of financing.

SOLAR COLLECTOR: A device, or combination of devices, structure, or part of a device or structure that transforms direct solar energy into thermal, chemical or electrical energy, that contributes significantly to a structure's energy supply, and components for containing and supporting such device.

SOLAR COLLECTOR, DETACHED: A solar collector, as defined herein, physically detached from the structure for which solar energy is to be supplied.

SPECIAL USE PERMIT: The authorization of a particular land use which is permitted in the Village of Painted Post Zoning Law, subject to requirements as described in Article XII to assure that the proposed use is in harmony with the Zoning Law and will not adversely affect the neighborhood if such requirements are met.

STORAGE FACILITY, INDOOR: A building or grouping of buildings designed and constructed for the common, long-term and/or seasonal interior storage of individual or business property by persons other than the property owner The wholesale storage and/or transfer of goods by commercial enterprises is not included this definition. See also "TRUCKING TERMINAL" and "WAREHOUSE."

STORAGE FACILITY, OUTDOOR: A lot designed for and/or used for the common, long-term and/or seasonal outdoor storage of individual or business property by persons other than the property owner.

STORAGE YARDS FOR EQUIPMENT: A lot designed for and/or used for the long-term and/or seasonal outdoor storage of business property by the property owner.

STORY: That part of a building comprised between a floor and the floor or roof next above it. (See "ATTIC", "BASEMENT", and "CELLAR").

STORY, HALF: That portion of a building situated above a full story and having a least two opposite exterior walls meeting a sloping roof at a level not higher above the floor than a distance equal to one-half the floor-to-ceiling height of the story below.

STREET, DEAD-END - A street or portion of a street with only one vehicular access.

STREET, PRIVATE - A road, serving not more than two residential lots, built to Village specifications and that remains in the ownership of and is maintained by the developer or development association and is not dedicated to the Village. This includes "private road."

STREET, PUBLIC - A right-of-way for vehicular traffic, whether designated as a road, highway, thoroughfare, parkway, street, avenue, boulevard, lane, place, alley, or however otherwise designated, that is built to Village specifications and dedicated to the Village for maintenance, but not including a private street This includes "road."

STREET WIDTH: The width of the right-of-way or the distance between property lines on opposite sides of a street.

STRUCTURE: A static construction of building materials, including buildings, stadiums, platforms, towers, sheds, display stands, storage bins, signs, reviewing stands, gasoline pumps, mobile dwellings (whether mobile or stationary at the time), and the like.

STRUCTURE, ACCESSORY - A structure detached from and subordinate to a principal building on the same lot used for purposes customarily incidental to those of the principal building. Accessory structures include but are not limited to, portable, demountable or permanent detached enclosures, shade structures, carports, garages, and storage sheds. Accessory structures are non-habitable, have no sewer or water utilities and exceed 120 sq. ft.

SWIMMING POOL: An artificial pool of water having a depth at any point of more than eighteen (18) inches and a surface area of greater than one hundred (100) square feet, designed or intended for the purpose of bathing or swimming and including all appurtenant equipment.

TOWN HOUSE: See, "HOUSING, NON-TRANSIENT."

TRAILER, HOUSE: See, "MOBILE HOME, SUBSTANDARD."

TRAILER - A structure that is:

A. Intended to be transported over the streets and highways (either as a motor vehicle or attached to or hauled by a motor vehicle), and

B. is designed for temporary use as sleeping quarters, but does not satisfy one or more of the definition criteria of a manufactured home as defined in this law. This includes "travel trailer" and "camper."

USE: This term is employed in referring to:

A. The purpose for which any buildings, other structures or land may be arranged, designed, intended, maintained, or conducted.

B. Any occupation, business activity, or operation conducted in a building or other structure, or on land.

USE, ACCESSORY : A use customarily incidental and subordinate to the principal use or building. Accessory uses may occur as an open land use, as a separate building(s) or within the principal building. An accessory use does not have any greater impact on the environment than the principal use.

USE, NONCONFORMING: . Any use of a building, other structure or tract of land which was lawfully existing prior to the adoption or amendment of this chapter but which does not conform to the use regulations for the district in which such use is located by reason of such adoption or amendment.

USE, PRINCIPAL - The main or primary permitted use of the lot or structure.

VACATION RESORT: See "HOUSING, TRANSIENT."

VARIANCE, AREA: The authorization by the Zoning Board of Appeals for the use of land in a manner which is not allowed by the dimensional or physical requirements of the applicable zoning regulations.

VARIANCE, USE: The authorization by the Zoning Board of Appeals for the use of land for a purpose which is otherwise not allowed or is prohibited by the applicable zoning regulations.

VETERINARY HOSPITAL: A building for the treatment of animal illness including kennels or other similar facilities for boarding animals.

WAREHOUSE : A structure or premises, for storing of goods, wares, and merchandise, whether for the owner or for others, prior to shipment to final retail sale operation, whether it is in public or private ownership and use.

WAY: A thoroughfare, however designated, permanently established for passage of persons or vehicles.

YARD, FRONT: A yard extending along the full length of the front lot line between the side lot lines, not including any land within the right-of-way of public or private streets.

YARD, REAR: A yard extending along the full-length of the rear lot line, between the side lot lines, not including any land within the right-of-way of public or private streets.

YARD, REQUIRED: That portion of the open area of a lot extending open and unobstructed from the ground upward, along a lot line for a depth or width as specified by the bulk regulations of the district in which the lot is located. No part of such yard shall be included as part of a yard or other open space similarly required for buildings on another lot.

YARD, SIDE: A yard situated between the building and the side line of a lot and extending from the front yard rear line (or from the front lot line, if there is no required front yard) to the rear yard front line (or rear lot line).

Section 280.9	(Reserved)
Section 280.10	(Reserved)
Section 280.11	(Reserved)
Section 280.12	(Reserved)
Section 280.13	(Reserved)

SCHEDULE C

HISTORICAL INVESTIGATIONS AND REMEDIAL ACTIONS

The Premises consist of approximately forty-nine (49) acres of land upon which there existed a 287,000+/- square foot foundry. The Foundry operated from approximately 1920 through December 1985, and produced gray iron castings principally for Ingersoll-Rand Company's ("I-R") compressor plant located at a separate site in Painted Post, New York. The operations consisted of pattern construction, sand mold lines, melt furnaces, castings, shakeout, casting, clearing and pattern and casting storage. After the foundry was idled in December 1985, an environmental evaluation and cleanup was conducted by I-R as part of its facility closure activity. In addition, pursuant to an Order on Consent with the DEC, I-R has performed further investigation and remediation activities at the Premises.

Documentary information with respect to the environmental investigations and cleanup that have taken place at the Premises, and any areas of the Premises that may have been impacted by releases of hazardous wastes, substances or constituents, can currently be obtained from documents submitted to DEC at its Albany, New York office (currently at 625 Broadway, Albany, New York 12233), and its Region 8 office at Avon, New York (currently at 6274 East Avon-Lima Road, Avon, New York 14414). Further information with respect to past activities at the Premises, including the use of foundry sand as backfill throughout wide portions of the MW-2B Area of the Premises, current activities, previous environmental investigations, information and investigations concerning the foundry sand at the Premises, groundwater quality, soil contamination, areas of possible environmental concern, topography, geology, hydrogeology, human health and environmental impacts can be obtained from the documentary information and other documents submitted to the DEC at the above-identified locations.

Such documentary information includes, but is not limited to, DEC's Record of Decision, dated March 1994 ("ROD") entitled "Ingersoll-Rand Foundry Inactive Hazardous Waste Site; Site Number 8-51-012, Village of Painted Post, Steuben County, New York". That ROD, in part, summarizes environmental sampling data which identified polynuclear aromatic hydrocarbons ("PAHs") near the MW-2B Area. Soil samples collected from within the fill material in this area confirmed that the PAHs in the fill were stationary and not migrating. The PAHs in the fill material appear to be petroleum based, and are commonly found in creosote, coal tar, and heavy oil-type products. The PAHs have been detected in an approximately three hundred (300) foot radial area surrounding the MW-2B Area, at a depth of approximately three (3) to six (6) feet below ground surface. Subsequent environmental investigations, as identified below, have detected PAHs in other areas of the Premises.

The DEC has determined that the PAHs at the Premises may pose a risk to humans in a scenario where future use includes invasive activities at the Premises. To address this concern, as part of the DEC's selected remedy under the ROD, a restriction was placed on the Premises indicating the presence of in-place soils contaminated by PAHs. The declarations by I-R in the Declaration satisfied and the restrictions, covenants and notices contained in this Deed are intended to satisfy the elements of the ROD's selected remedy and minimize the potential for

future human exposure.

In April, 2004, the Grantee, as part of its due diligence investigation in connection with acquisition of the Premises, performed supplemental environmental investigations. Soil borings were installed to delineate and characterize the extent of PAHs within the MW-2B Area. Samples of the soil fill material were also collected as part of a pre-construction geotechnical study. Results of the investigations indicated that fill material contained elevated concentrations of PAHs that exceed the NYSDEC TAGM soil clean-up objectives. The fill material also contained elevated nickel, magnesium and zinc at concentrations that exceeded typical background soils concentrations. Documentary and further information with respect to such environmental investigation can be obtained from DEC's Region 8 office in Avon, New York.

In June 2004 through November 2004, Grantee caused to be conducted additional environmental investigations at the Premises, including a remedial investigation in connection with Grantee's application to DEC in regard to the DEC's Brownfield Cleanup Program. The remedial investigation included surface and subsurface soil/fill sampling and groundwater sampling at the Premises. Documentation and further information with respect to such investigations can be obtained from DEC's Region 8 Office in Avon, New York. The deed restrictions which are a part hereof are intended to supplant the above referenced restriction and contemplates a certain level of development at the Premises, in concert with a remedial action plan and related soil management plan, all of which is in connection with the DEC's Brownfield Cleanup Program and consents and approvals related thereto.

SCHEDULE D - REMEDIAL WORK PLAN

Attached hereto

MALCOLM PIRNIE

REMEDIAL WORK PLAN

Former Ingersoll-Rand Foundry Site Village of Painted Post Steuben County, New York

Prepared For:

PAINTED POST DEVELOPMENT, LLC.

AUGUST 2005

Submitted by:
Malcolm Pirnie, Inc.
40 Centre Drive
Orchard Park, NY 14127

MALCOLM PIRNIE

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B	Operation, Monitoring and Maintenance Work Plan

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SECTION 1

Introduction

1.1 Purpose and Scope

Painted Post Development, LLC plans to redevelop the former Ingersoll-Rand Foundry Site in Painted Post, New York for use as a warehousing and distribution center. Malcolm Pirnie has prepared this Remedial Action Work Plan to support a New York State Department of Environmental Conservation (NYSDEC)-sponsored Brownfields Cleanup Program (BCP) remediation of the Site appropriate for its intended use. This Work Plan summarizes the conclusions of site investigations performed on the site and describes the remedy selection process for the site.

Section 2.0 summarizes the results of investigations performed on the site and presents the remedial action objectives established for the site based on the human health risk assessment performed from the investigation data collected. Section 3.0 describes the range of potentially applicable remedies available and presents the evaluation of each alternative against NYSDEC criteria. Section 4.0 presents the conceptual design and proposed implementation schedule of the selected remedial alternative

1.2 Background

The Site is a former foundry plant facility situated on approximately 49-acres of land at the northwest end of West Water Street in the northwestern portion of the Village of Painted Post, Steuben County, New York. The Site is approximately 500 feet east of the south-flowing Cohocton River. The Site is surrounded by an open field to the west, a parking lot to the south and residential housing to the east and north. Two rail spurs once serviced the Site. The facility

began operations in 1848 as a machine shop and foundry owned by the Weston Engine Company. In 1898, the Imperial Engine Company, a subsidiary of the Rand Drill Company, purchased the facility. In 1905 Rand merged with the Ingersoll-Sergeant Drill Company to become Ingersoll-Rand (IR). The facility remained under IR's ownership until December 31, 1986 when Dresser Industries merged with IR to become the Dresser-Rand Company (Capsule, 1988).

During its active use, the foundry contained 287,000 square feet of industrial buildings, most of which were located along the northeastern side of the Site. The foundry produced gray iron castings used in assembling air compressors. In 1972, the foundry began producing gray iron in continuous pour from electric-melt furnaces. At that time operations included pattern construction, sand mold lines, casting, shakeout, casting cleaning, and pattern and casting storage (Capsule, 1988). IR ceased production operations at the Painted Post foundry site on January 1, 1986.

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SECTION 2

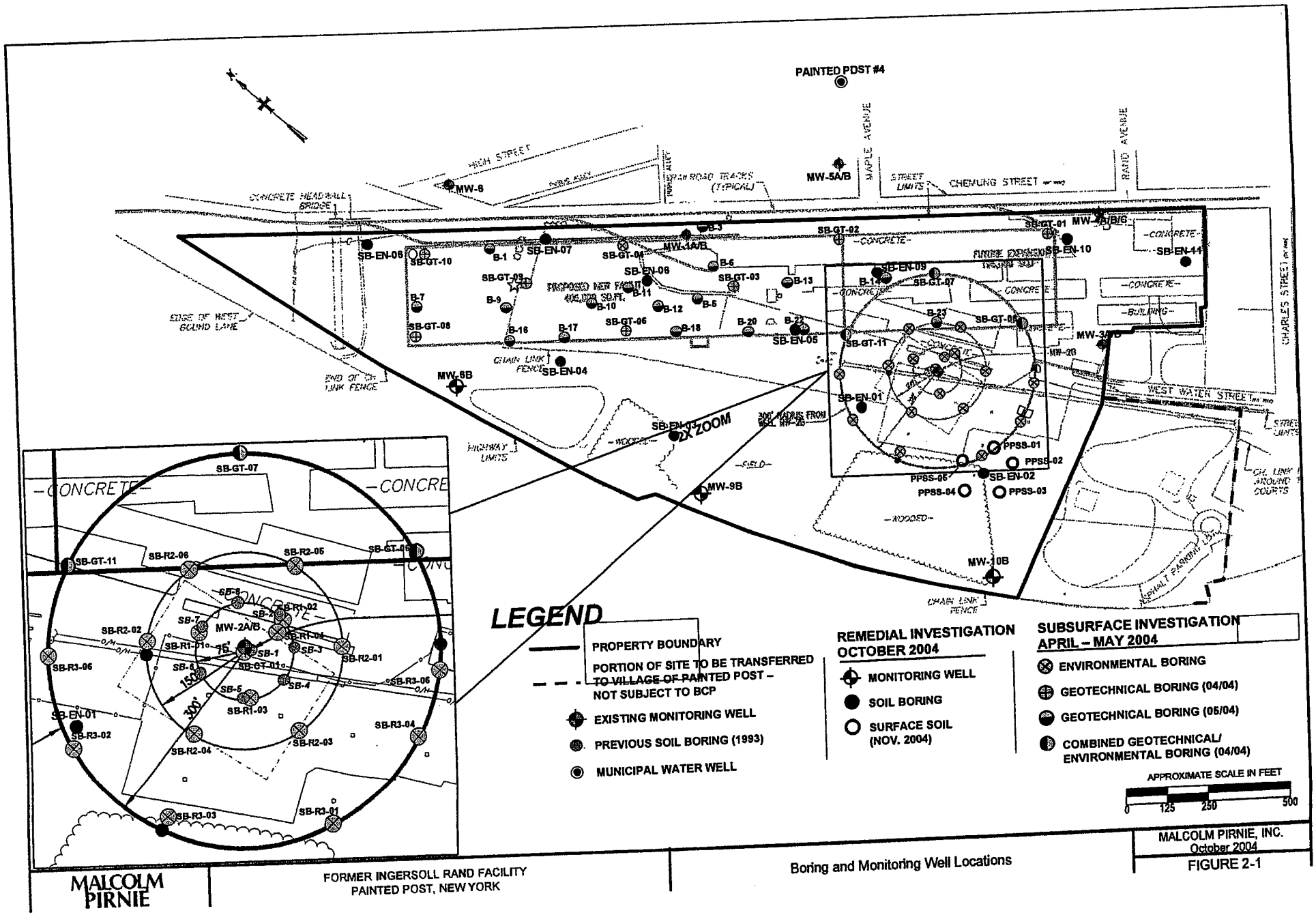
Summary of Site Conditions

2.1 Summary of Previous Investigations

The following is a general summary of previous environmental investigations and remedial actions performed at the Site. Information for this summary was obtained from copies of reports, or portions of reports, made available by the New York State Department of Environmental Conservation (NYSDEC) Region 8 office under a Freedom of Information Law (FOIL) request # 04289. This summary is intended to provide a general idea of the previous and current Site conditions and should not be considered a complete presentation of past environmental activities at the Site. Figure 2-1 illustrates boring and monitoring well locations.

December 1985 – As part of the Site closure, IR contracted Capsule Environmental Engineers, Inc. (CEE) to identify areas on Site that may contain PCBs. CEE conducted a site assessment and preliminary sampling for PCBs. Based on the results of these activities, CEE prepared a cleanup specification for removal of underground storage tanks, equipment cleaning, removal of spent raw materials, removal of wastes generated during the cleanup operations, and initial studies to determine if further remedial work was necessary.

June 25, 1986 to August 12, 1988 – Allwash of Syracuse was awarded the initial PCB cleanup contract and completed the work in two "divisions". Division I activities included further evaluation of contaminated areas and the characterization of waste materials for subsequent disposal. Division II activities included the cleaning and removal of numerous underground storage tanks containing products including, Linocure A.W., Linoil 742, kerosene, gasoline, and diesel fuel. Also completed during Division II was the cleaning and removal of



MALCOLM PIRNIE

FORMER INGERSOLL RAND FACILITY
PAINTED POST, NEW YORK

Boring and Monitoring Well Locations

MALCOLM PIRNIE, INC.
October 2004

FIGURE 2-1

contaminated machinery and equipment and the excavation of contaminated soil. Soil contaminants included PCBs, oil and grease, and lead.

January 1992 – Law Environmental, of Albany, New York prepared (for CEE on behalf of IR) an Interim Stratigraphy Report for a Phase I Groundwater Quality Assessment. Two soil borings were drilled and sampled to the depth of 82 feet to determine subsurface conditions and finalize monitoring well construction details for the subsequent groundwater quality assessment.

September 1992 – Wenck Associates, Inc. of Maple Plain Minnesota (for CEE on behalf of IR) completed a Groundwater Quality Assessment. The purpose of the GQA was to satisfy requirements of Section VII of an Order on Consent between IR and the NYSDEC that was signed on October 2, 1987. Section VII addresses the question of whether or not past practices on site have led to impacts to groundwater. As part of this GWA, 13 groundwater monitoring wells were installed at seven locations. Some of the wells were installed in groups of two or more with each grouped well monitoring one of three unique water-production depths. Some wells monitored the 80-foot depth and were designated as "A" wells, others monitored the water table and were designated "B" wells. At well location 4, a third well was installed to monitor above an aquitard of limited extent at the 35-foot depth. The geology of the overburden was characterized, as were the chemical characterizations of the soil and groundwater flow and quality. The effects of pumping nearby municipal supply wells were also mapped to show a local effect at the Site. Samples of fill material at well number MW-2 contained elevated PAHs (up to 11 PPM total PAHs) and the presence of toluene. At MW-4A, soils and groundwater samples contained constituents of a petroleum product and benzene was present in the groundwater from well MW-4B at a concentration above the NYSDEC groundwater standard. Recommendations of the GQA report included confirmation sampling and further evaluation of the elevated PAHs at the MW-2B location.

February 9, 1993 – At the request of the NYSDEC, CEE completed a Subsurface Investigation on behalf of IR, in response to a citizen allegation regarding the disposition of drums at the Site. A soil trenching and sampling program was performed. Four trenches were excavated. Two drums were encountered, sampled and removed. One of the two drums contained ash-like material and was suspected to have been used for trash burning. Excavated

material primarily consisted of black and tan sands with treated wood and miscellaneous debris. Treated wood included small bits to full size railroad ties. The report concluded that no material found in the trenches would indicate that IR improperly disposed of hazardous materials in drums through burial on site and recommended no further subsurface investigation.

1993 Quarterly Groundwater Monitoring - Quarterly groundwater quality monitoring was performed beginning in the second quarter of 1993. References to this monitoring data (see 2/25/94 FS report described below) indicate that sample results since beginning the quarterly monitoring through the subsequent two years resulted in no exceedances of NYS groundwater standards or Federal MCLs.

August 2, 1993 – Per the recommendations made in the September 1992 Groundwater Quality Assessment Report, CEE, on behalf of IR, prepared a report titled "Report of the Subsurface Evaluation of MW-2B–Additional Groundwater Quality Assessment Investigation." CEE drilled eight soil borings at and around well MW-2B to further delineate the area of elevated PAHs. One boring was placed adjacent to well MW-2B, four borings were placed around the center boring at a distance of 40 feet and two were placed at a distance of 75 feet. Where conditions allowed, samples were collected at the three-foot depth and directly below the fill, which ranged in thickness between six and 13 feet. All samples were analyzed for semivolatile organic compounds. All samples from the three-foot depth contained PAHs with a maximum of 25 PPM. Samples of the native soils beneath the fill contained no significant PAHs. Stated conclusions of the report were that significant levels of PAHs are not vertically migrating and impacting the natural soils at the Site and that previous groundwater sampling data for wells MW-2A and MW-2B indicate that PAHs have not impacted the groundwater at this well location. Additional evaluation of the PAHs was not deemed warranted.

February 25, 1994 – CEE, on behalf of IR, prepared a Focused Feasibility Study (FFS) for the Site in February 1994. As part of the FFS, a Risk assessment was performed that focused on the presence of TCA in one of the nearby municipal supply wells (Well #4). The risk assessment concluded that the groundwater beneath the Site is in compliance with state and federal MCLs and that groundwater beneath the Site is unlikely to pose any health concerns to the community. The FS recommended the following:

- Limited groundwater monitoring at the Site
- Fencing of the Site to limit access, and
- A deed restriction to notify future property owners of the presence of contaminants in the vicinity of MW-2B.

August 25, 1994 – In accordance with a Record of Decision (ROD) signed in March 1994, CEE, on behalf of IR, submitted a Sampling and Analysis Plan for long-term monitoring of Site groundwater quality. The SAP outlined plans for the sampling of six on-site and two near off-site monitoring wells for VOCs five times over a period of three calendar years (1994, 1995 and 1996).

September 9, 1997 – CEE, on behalf of IR, prepared a 1997 Annual Ground Water Monitoring Report. Presumably the long-term groundwater monitoring was performed uninterrupted since beginning in 1994. The report presents results of VOC analysis of the eight wells specified in the 1994 SAP. The report documents very low concentrations (less than 1 ug/l) of several VOCs with only 1,1,1 – TCA present above 1 ug/l, ranging up to 6 ug/l.

May 2004 – Malcolm Pirnie performed a supplemental environmental investigation on behalf of the Painted Post Development, LLC in April 2004 in support of a due diligence effort for property acquisition. Soil borings were installed to delineate and characterize the extent of polycyclic aromatic hydrocarbons (PAHs) within the deed restricted radius of monitoring well MW-2B. Samples of the soil and overburden material were also collected as part of a pre-construction geotechnical study. Results of the investigation confirmed that fill material does contain elevated concentrations of PAHs that exceed the NYSDEC TAGM soil clean-up objectives. The fill material also contained elevated nickel, magnesium, and zinc at concentrations that exceeded typical background soils concentrations. The soil sample analytical results from this investigation were summarized in the RI Work Plan.

September 2004 – Malcolm Pirnie conducted RI sampling in September and October 2004. This sampling included drilling and sampling of 14 soil borings. From these borings, seven

surface soil, 17 subsurface soil/fill and three groundwater samples were collected. All samples from the RI sampling event were analyzed for Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), Polychlorinated biphenyls (PCBs), pesticides, TAL metals, cyanide, and pH. Tables 2-1A, 2-2, and 2-3 provide a summary of the analytical results of the RI.

November 2004- On November 12, 2004 as part of a pre-construction supplemental characterization study, five surface soil samples (0-2" depth) were collected to further delineate the lateral extent of elevated PCB concentrations detected at a single point sampled during the RI. The five samples were collected in a circular pattern approximately 100 feet from soil boring SB-EN-02 and analyzed for PCBs. Table 2-1B provides a summary of analytical results of the surface soil samples collected for PCBs.

2.2 Site Investigation Results Summary

Overall, the results of the 2004 investigations confirmed:

- On-site subsurface fill contains individual PAHs (benzo(a) pyrene and chrysene) above TAGM cleanup objectives, although total PAHs and total SVOCs were both below TAGM guidelines for total SVOCs.
- On-site surface soils in the northernmost treed area of the Site does not contain PAHs or metals above TAGM values; however, surface fill in other areas of the Site does contain individual PAHs above TAGM values. Elevated PCB concentrations were found in surface soils at one location on-site.
- Ground water at the Site has not been impacted by the contaminants present in Site fill.
- Native soils at the Site have not been significantly impacted by the contaminants present in Site fill.
- No "source area" of contamination exists.
- Very low concentrations of PCBs exist sporadically in the fill.

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TABLE 2-1A
SUMMARY OF ANALYTICAL RESULTS - WESTERN PERIMETER SURFACE SOIL
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	MW-8B 0-2" 10/4/2004	MW-9B 0-2" 9/30/2004	MW-10B 0-2" 9/29/2004	SB-EN-01 0-2" 9/30/2004	SB-EN-02 0-2" 9/30/2004	SB-EN-03 0-2" 10/1/2004	SB-EN-04 0-2" 10/1/2004
General Chemistry/Physical Characteristics									
Percent Solids	NA	NA	78.7	96.6	82.3	90.7	75.2	83	79.4
pH	NA	NA	6.08	6.5	6.39	6.87	6.81	7.11	6.03
TAL Inorganic Analytes (mg/kg)									
Aluminum	SB	33000	10,600	1,740	10,300	4,210	9,250	4,740	11,700
Antimony	SB	N/A				1.4 J	3.5 J	1.4 J	
Arsenic	7.5 or SB	3 - 12	6.5 J		6.2	3.4	6.6	3.3	6.8
Barium	300 or SB	15 - 600	128	9.9 J	138	49.2	114	56.2	141
Beryllium	0.16 or SB	0 - 1.75	0.41 J		0.33 J		0.1 J	0.04 J	0.38 J
Cadmium	1 or SB	0.1 - 1	0.27 J	0.5 J	0.55 J	0.49 J	2.8	0.59 J	0.56 J
Calcium	SB	130 - 35,000	1,490	232 J	2,820	2,500	3,910	1,650	1,400
Chromium	10 or SB	1.5 - 40	14.1 J	3	13.5	19.1	22.3	19.3	15.6
Cobalt	30 or SB	2.5 - 60	8.3 J	7 J	7.8 J	6.9 J	7.9 J	5 J	8.7 J
Copper	25 or SB	1 - 50	14.9 J	3.2 J	16.3	25.8	67.2	29.6	14.8
Iron	2000 or SB	2,000 - 550,000	19,600	2,620	18,600	14,000	19,200	13,300	20,900
Lead	400 [4]	200-500	22.4 J	136 J	25.9 J	117 J	365 J	57.9 J	25.1 J
Magnesium	SB	100 - 5,000	2,910	286 BJ	2,820 J	1,090 J	1,660 J	1,550 J	2,980 J
Manganese	SB	50 - 5,000	558	38.8	608	388	618	312	626
Mercury	0.1	0.001 - 0.2	0.04 B	0.01 J	0.04 J	0.04 J	0.33	0.05 J	0.05 J
Nickel	13 or SB	0.5 - 25	19.7	5 J	18.6	16.1	24.8	21.9	21.1
Potassium	SB	8,500 - 43,000	1,150 J	158 J	1,150 J	527 J	935 J	588 J	1,050 J
Sodium	SB	6,000 - 8,000	50.7 J	33.5 J	88.9 J	79.7 J	118 J	93.6 J	89.6 J
Vanadium	150 or SB	1 - 300	15.9	3.3 J	16	8.8 J	16.4	8.5 J	16.8
Zinc	20 or SB	9 - 50	70.1	9.5 J	78.5 J	48.6 J	216 J	54.6 J	72.4 J
Pest/PCBs (ug/kg)									
All Pesticides	NA	NA							
Total Pesticides	10	NA				370	2400	130	
Aroclor-1260	NA	NA				370	2400	130	
Total PCBs	1000	NA							

Notes: See Page 3

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MALCOLM PIRNIE

TABLE 2-1A
SUMMARY OF ANALYTICAL RESULTS - WESTERN PERIMETER SURFACE SOIL
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	MW-8B 0-2" 10/4/2004	MW-9B 0-2" 9/30/2004	MW-10B 0-2" 9/29/2004	SB-EN-01 0-2" 9/30/2004	SB-EN-02 0-2" 9/30/2004	SB-EN-03 0-2" 10/1/2004	SB-EN-04 0-2" 10/1/2004
Semi-Volatile Organic Compounds - SVOCs (ug/kg)									
2-Methylnapthalene	36,400	NA				95 J	150 J	59 J	
Acenaphthylene	41,000	NA				130 J			
Antracene	50,000	NA				92 J			
Benzo(a)anthracene	224	169 -59,000	120 J			830	2,700	440	270 J
Benzo(a)pyrene	61	165 - 220	190 J	48 J		*1,200*	*3,500*	*670*	*380 J*
Benzo(b)fluoranthene	1100	15,000 - 62,000	230 J	60 J		830	6,100	780	480
Benzo(g,h,i)perylene	50,000	900 - 47,000	220 J	66 J		1,000	5,500	680	380 J
Benzo(k)fluoranthene	1100	300 - 26,000	170 J	52 J		610	3,600	550	330 J
Bis(2-ethylhexyl)phthalate	50,000	NA		140 J	42 J	100 J	150 J	51 J	66 J
Chrysene	400	251 - 640	180 J	48 J		*1,300*	*4,900*	640	380 J
Dibenz(a,h,)anthracene	14	NA	57 J			290 J	1,600	210 J	110 J
Di-n-butylphthalate	8100	NA		37 J		130 J		71 J	
Fluoranthene	50,000	200 - 166,000	140 J	49 J		690	2,800	480	320 J
Indeno(1,2,3-cd)pyrene	3200	8,000 - 61,000	180 J	51 J		730	4,300	590	320 J
Naphthalene	13,000	NA				100 J	250 J	74 J	
Phenanthrene	50,000	NA				460	980 J	210 J	84 J
Pyrene	50,000	145 - 147,000	150 J	40 J		940	2,500	520	280 J
Total BaP Equivalent[5]	NA	NA	304	60	0	1,748	6,495	1,073	604
Total SVOCs	500,000***	NA	1,637	591	42	9,527	39,030	6,025	3,400
Volatile Organic Compounds - VOCs (ug/kg)									
Acetone	200	NA		4 J				1 J	
Cyclohexane	NA	NA	2 J						
Methyl Acetate	NA	NA	3 J						
Methylene chloride	100	NA						1	
Total VOCs	10,000	NA	5	4					

Notes: See Page 3

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MALCOLM PIRNIE

TABLE 2-1A
SUMMARY OF ANALYTICAL RESULTS - WESTERN PERIMETER SURFACE SOIL
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Notes:

Only those analytes detected at a minimum of one location are shown.
Blank space indicates analyte was not detected.
Shaded concentrations exceed TAGM values for Pest/PCBs, SVOCs, and VOCs.
Shaded TAL Inorganic Analytes exceed upper range of Eastern USA Background Concentrations and TAGM values.
Bold/Italic SVOC results exceed upper limit of Urban Soils Background Range for PAHs.
(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.
(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.
(3) SVOCs background from Background Soil Concentrations of Poly Aromatic Hydrocarbons (PAHs), Urban Soils (U.S. and other), Toxicological Profile for PAHs, US Dept. of Health and Human Services, August 1995.
(4) USEPA Region 3 Soil Screening Level.
(5) Total BaP equivalent - Benzo (a) pyrene equivalent is calculated by multiplying the following individual PAH concentrations by their multiplier (#) and summing the results. Benzo (a) pyrene (1.00); Dibenzo (a,h) anthracene (1.00); Benzo (a) anthracene (0.10); Benzo (b) fluoranthene (0.10); Ideno (1,2,3-cd) pyrene (0.10); Benzo (k) fluoranthene (0.01); Chrysene (0.01).
*** - The Soil Cleanup Objective refers to the sum of these compounds.
D- Indicates result from subsequent run at 5x dilution.
J - Indicates and estimated value.

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MALCOLM PIRNIE

TABLE 2-1B
SUMMARY OF ANALYTICAL RESULTS - SB-EN-02 SURFACE SOIL SAMPLES
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	Proposed Site Specific Action Level (SSAL)	PPSS-01 11/16/2004	PPSS-02 11/16/2004	PPSS-03 11/16/2004	PPSS-04 1 /16/2004	PPSS-DUP (PPSS-04) 11/16/2004	PPSS-05 11/16/2004
General Chemistry/Physical Characteristics							
Percent Solids (%)	NA	85.7	73.1	80.6	43	44.9	87.6
pH (s.u.)	NA	7.09	7.24	7.46	7.18	7.11	6.94
PCBs (ug/kg)							
Aroclor-1260	NA	98		72	7700	4500	730
Total PCBs (Surface - 1.0')	1,000	98		72	7700	4500	730

Notes:

Samples collected at the surface, at evenly spaced intervals on a 100 ft. radius around soil boring SB-EN-02.
Only those analytes detected at a minimum of one location are shown.
Blank space indicates analyte was not detected.
Shaded concentrations exceed Site Specific Action Levels (SSALS).

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3198-004

MALCOLM PIRNIE

TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - OCTOBER 2004 SAMPLING
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE

PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	MW-8B 8-9' 10/4/2004	MW-9B 10-11.5' 9/30/2004	MW-10B 6-8' 9/29/2004	SB-EN-01 4-6' 9/30/2004	SB-EN-02 0.5-2' 9/30/2004	SB-EN-03 8-10' 10/1/2004	SB-EN-03 8-11' 10/1/2004	SB-EN-04 6-8' 10/1/2004	SB-EN-05 4-6' 10/1/2004	SB-EN-05 2-5' 10/1/2004
General Chemistry/Physical Characteristics												
Percent Solids	NA	NA	87.5	89.7	80.5	69.3	85.4	82	75.9	90.8	93.1	93.1
pH	NA	NA	7.96	7.15	7.72	6.95	7.48	-	7.8	7.31	-	7.87
TAL Inorganic Analytes (mg/kg)												
Aluminum	SB	33,000	3,810	6,620	11,100	25,100	5,030	-	8,080	2,800	-	3,630
Antimony	SB	N/A	7.4 J			1.7 J	0.87 J	-	6.4 J		-	
Arsenic	7.5 or SB	3 - 12	3.5 J	5.9	5.1	11.9	3.1	-	4.3	2 J	-	3.5
Barium	300 or SB	15 - 600	164	68.3	154	146	55	-	137	16.3 J	-	16.8 J
Beryllium	0.16 or SB	0 - 1.75		0.17 J	0.32 J		0.03 J	-	0.12 J		-	
Cadmium	1 or SB	0.1 - 1	1.1 J	0.43 J	0.46 J	2.0	0.83 J	-	1.9	0.2 J	-	0.39 J
Calcium	SB	130 - 35,000	6,150	1,100 J	2,150	3,290	1,590	-	3,160	1,110	-	4,040
Chromium	10 or SB	1.5 - 40	524 J	10.8	13.7	44.7	12.3	-	554	7.3	-	13.6
Cobalt	30 or SB	2.5 - 60	7.2 J	6.2 J	7.8 J	5 J	4.9 J	-	10.6 J	1.1 J	-	2.8 J
Copper	25 or SB	1 - 50	327 J	14.4	11.5	76.4	32.2	-	135	8.1	-	25.7
Iron	2000 or SB	2,000 - 550,000	38,700	17,600	18,300	38,500	13,000	-	48,200	8,670	-	16,800
Lead	400 [4]	200-500	157 J	11.6 J	9.2 J	298 J	114 J	-	89 J	5.2 J	-	8.5 J
Magnesium	SB	100 - 5,000	1,060 J	2,100 J	2,910 J	1,070 J	985 J	-	2,650 J	410 BJ	-	907 J
Manganese	SB	50 - 5,000	463	421	623	455	348	-	899	80.6	-	255
Mercury	0.1	0.001 - 0.2	0.11	0.02 J	0.03 J	0.27	0.05 J	-	0.04 J		-	0.02 J
Nickel	13 or SB	0.5 - 25	164	15.4	18.8	48.7	13.7	-	112	10.3	-	16.8
Potassium	SB	8,500 - 43,000	437 J	672 J	715 J	1,180 J	481 J	-	613 B	240 J	-	368 J
Selenium	2 or SB	0.1 - 3.9	1.3 J					-	1.1 J		-	
Silver	SB	N/A	3.7					-	0.51 J		-	
Sodium	SB	6,000 - 8,000	126 J	95.6 J	89.6 J	350 J	93.5 J	-	150 J	101 J	-	105 J
Total Cyanide	NA	NA	1.67					-			-	
Vanadium	150 or SB	1 - 300	10.6 J	11.6	16.3	42.3	9 J	-	13.8	6.2 J	-	15.5
Zinc	20 or SB	9 - 50	191	53.1 J	66.7 J	130 J	71.9 J	-	116 J	11.7 J	-	16.7 J
Pest/PCBs (µg/kg)												
All Pesticides	NA	NA						-			-	
Total Pesticides	10	NA						-			-	
Aroclor-1254	NA	NA					330 J	-			-	
Aroclor-1260	NA	NA					330	-			-	
Total PCBs	1000	NA										

Notes: See Page 5

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MALCOLM PIRNIE

TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - OCTOBER 2004 SAMPLING
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	MW-8B 8-9' 10/4/2004	MW-9B 10-11.5' 9/30/2004	MW-10B 6-8' 9/29/2004	SB-EN-01 4-6' 9/30/2004	SB-EN-02 0.5-2' 9/30/2004	SB-EN-03 8-10' 10/1/2004	SB-EN-03A 8-11' 10/1/2004	SB-EN-04 6-8 10/1/2004	SB-EN-05 2-4 10/1/2004	SB-EN-05 2-5' 10/1/2004
Semi-Volatile Organic Compounds - SVOCs (µg/kg)												
1,1'-Biphenyl	NA	NA				98 J	64 J	-			-	47 J
2-Methylnapthalene	36,400	NA				76 J	170 J	-	110 J		-	56 J
Acenaphthene	50,000	NA				52 J		-			-	150 J
Acenaphthylene	41,000	NA						-	46 J		-	110 J
Anthracene	50,000	NA	130 J			140 J	67 J	-	66 J	250 J	-	1,200
Benzo(a)anthracene	224	169 -59,000	3,300			3,500	1,400	-	750	8,000	-	*2,000*
Benzo(a)pyrene	61	165 - 220	*4,600*			*3,700*	*1,700*	-	*1,100*	*11,000*	-	2,800
Benzo(b)fluoranthene	1100	15,000 - 62,000	5,700			6,900 D	2,200	-	1,400	13,000	-	2,100
Benzo(g,h,i)perylene	50,000	900 - 47,000	5,300			4,200 D	1,800	-	1,200	9,900	-	1,600
Benzo(k)fluoranthene	1100	300 - 26,000	4,000			3,400	1,000	-	1,100	9,000	-	560
Bis(2-ethylhexyl)phthalate	50,000	NA		330 J	180 J	130 J	360 J	-	1,000		-	
Carbazole	NA	NA	170 J			86 J		-		440 J	-	
Chrysene	400	251 - 640	*4,900*			*5,900 D*	*2,300*	-	*1,100*	*11,000*	-	*1,900*
Dibenz(a,h,)anthracene	14	NA	1,500			1,500	580	-	360 J	3,300	-	670
Dibenzofiran	6200	NA				100 J	55 J	-			-	
Di-n-butylphthalate	8100	NA		76 J		86 J	45 J	-	46 J		-	110 J
Fluoranthene	50,000	200 - 166,000	4,000			4,100 D	960	-	800	9,100	-	1,100
Fluorene	50,000	NA						-			-	
Indeno(1,2,3-cd)pyrene	3200	8,000 - 61,000	4,300			3,600	1,300	-	1,000	8,800	-	1,800
Naphthalene	13,000	NA	120 J			240 J	200 J	-	110 J		-	72 J
Phenanthrene	50,000	NA	1,000 J			1,200	670	-	400 J	2,100	-	290 J
Pyrene	50,000	145 - 147,000	3,400			2,800	1,000	-	690	8,400	-	1,000
Total BaP Equivalent[5]	NA	NA	7,519	0	0	6,693	2,803	-	1,797	17,480	-	3,285
Total SVOCs	500,000***	NA	42,420	406	180	41,808	15,871	-	11,278	94,290	-	17,565
Volatile Organic Compounds - VOCs (µg/kg)												
1,1,1-Trichloroethane	800	NA							-			-
Acetone	200	NA							-			-
Benzene	60	NA				3 J			-			-
Cyclohexane	NA	NA	4 J				2 J	1 J	-	3 J	4 J	-
Isopropylbenzene	5,000	NA							-			-
M+P-xylene	NA	NA							-			-
O-xylene	1,200	NA							-			-
Methyl Acetate	NA	NA	2 J						-			-
Methycyclohexane	NA	NA							-			-
Methylene chloride	100	NA							-			-
Toluene	1,500	NA						2 J	-		1 J	-
Trichloroethene	700	NA							-			-
Total VOCs	10,000	NA	6			3	2	3	-	3	5	-

Notes: See Page 5

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MALCOLM PIRNIE

TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - OCTOBER 2004 SAMPLING
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE

PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	SB-EN-06 12-13.5' 10/4/2004	SB-EN-07 0.5-1.5 10/5/2004	SB-EN-08 6-8' 10/5/2004	SB-EN-08 6-10' 10/5/2004	SB-EN-09 2-3' 10/5/2004	DUP-1 (SB-EN-09 2-3') 10/5/2004	SB-EN-10 12-14 10/6/2004	VOA-DUP (SB-EN-10 12-14') 10/6/2004	SB-EN-10 12-16 10/6/2004	SB-EN-11 2-4 10/6/2004
General Chemistry/Physical Characteristics												
Percent Solids	NA	NA	87.6	74.7	79.3	80	81.5	85.6	91.8	92.7	91.1	88.8
pH	NA	NA	7.74	6.93	-	6.96	7.11	7.19	-	-	9.23	6.02
TAL Inorganic Analytes (mg/kg)												
Aluminum	SB	33,000	10,800	8,620	-	10,400	7,600	6,910	-	-	7,630	7,790
Antimony	SB	N/A			-		1.4 J	1.2 J	-	-		
Arsenic	7.5 or SB	3 - 12	8.5 J	4.3 J	-	12 J	14.2 J	14.5 J	-	-	5.4 J	5.3 J
Barium	300 or SB	15 - 600	133	49.1 J	-	89	105	114	-	-	46	44.5 J
Beryllium	0.16 or SB	0 - 1.75	0.33 J	0.06 J	-	0.39 J	0.07 J	0.16 J	-	-		
Cadmium	1 or SB	0.1 - 1	0.29 J	0.68 J	-	0.38 J	0.78 J	0.89 J	-	-	0.25 J	0.25 J
Calcium	SB	130 - 35,000	1,570	1,260 J	-	4,250	8,310	15,400	-	-	42,800	3,460
Chromium	10 or SB	1.5 - 40	16.5 J	10.7 J	-	14.4 J	15.4 J	15.9 J	-	-	10.9 J	17.5 J
Cobalt	30 or SB	2.5 - 60	10.9 J	4.4 J	-	8.4 J	5.1 J	5.2 J	-	-	6.7 J	3.4 J
Copper	25 or SB	1 - 50	21.1 J	111 J	-	40.4 J	41.6 J	39.4 J	-	-	30.7 J	17.1 J
Iron	2000 or SB	2,000 - 550,000	24,900	14,000	-	25,100	34,700	31,000	-	-	17,500	24,200
Lead	400 [4]	200-500	10.3	52.3 J	-	17.4	66.1 J	80.6 J	-	-	6.3	19 J
Magnesium	SB	100 - 5,000	3,400	1,480	-	3,140	1,980	1,810	-	-	14,600	866 J
Manganese	SB	50 - 5,000	532	293	-	1,170	396	451	-	-	601	630
Mercury	0.1	0.001 - 0.2	0.02 J	0.05 J	-	0.05 B	0.1 J	0.29	-	-		0.1 J
Nickel	13 or SB	0.5 - 25	25.2	14	-	22.4	14.5	14.9	-	-	16.4	13.1
Potassium	SB	8,500 - 43,000	977 J	676 J	-	1,190 J	997 J	1,050 J	-	-	815 J	660 J
Selenium	2 or SB	0.1 - 3.9			-				-	-		
Silver	SB	N/A			-				-	-		
Sodium	SB	6,000 - 8,000	72.3 J	49.7 J	-	93.5 J	105 J	135 J	-	-	109 J	128 J
Total Cyanide	NA	NA			-				-	-		
Vanadium	150 or SB	1 - 300	17.2	13.6	-	20.8	18.9	18	-	-	16.9	16.5
Zinc	20 or SB	9 - 50	74	75.1	-	101	165	172	-	-	86.1	44.2
Pest/PCBs (µg/kg)												
All Pesticides	NA	NA			-				-	-		
Total Pesticides	10	NA			-				-	-		
Aroclor-1254	NA	NA		150	-		480	360	-	-		
Aroclor-1260	NA	NA		47 J	-		480	360	-	-		
Total PCBs	1,000	NA		197	-				-	-		

Notes: See Page 5

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MALCOLM PIRNIE

TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - OCTOBER 2004 SAMPLING
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	SB-EN-06 12-13.5' 10/4/2004	SB-EN-07 0.3-1.5' 10/5/2004	SB-EN-08 6-8' 10/5/2004	SB-EN-08 6-10' 10/5/2004	SB-EN-09 2-3' 10/5/2004	DUP-1 (SB-EN-09 2-3') 10/5/2004	SB-EN-10 12-14 10/6/2004	VOA-DUP (SB-EN-10 12-14') 10/6/2004	SB-EN-10 12-16 10/6/2004	SB-EN-11 2-4 10/6/2004
Semi-Volatile Organic Compounds - SVOCs (µg/kg)												
1,1'-Biphenyl	NA	NA	Note 6		-	Note 6	56 J	86 J	-	-		
2-Methylnapthalene	36,400	NA	Note 6		-	Note 6	330 J	480	-	-		
Acenaphthene	50,000	NA	Note 6		-	Note 6	66 J	97 J	-	-		
Acenaphthylene	41,000	NA	Note 6		-	78 J	44 J		-	-		
Anthracene	50,000	NA	Note 6		-	Note 6	68 J	67 J	-	-		8,100 J
Benzo(a)anthracene	224	169 -59,000	Note 6	160 J	-	290 J	500	530	-	-		11,000 J
Benzo(a)pyrene	61	165 - 220	Note 6	310 J	-	380 J	680	740	-	-		15,000
Benzo(b)fluoranthene	1100	15,000 - 62,000	Note 6	310 J	-	440	870	970	-	-		13,000
Benzo(g,h,i)perylene	50,000	900 - 47,000	Note 6	360 J	-	300 J	720	740	-	-		12,000
Benzo(k)fluoranthene	1100	300 - 26,000	Note 6	230 J	-	290 J	510	580	-	-	1,300 J	
Bis(2-ethylhexyl)phthalate	50,000	NA	760 J		-	Note 6	540		-	-		
Carbazole	NA	NA	Note 6		-	Note 6	48 J	53 J	-	-		11,000 J
Chrysene	400	251 - 640	Note 6	220 J	-	330 J	690	750	-	-		4,700 J
Dibenz(a,h,)anthracene	14	NA	Note 6	97 J	-	120 J	220 J	220 J	-	-		
Dibenzofiran	6200	NA	Note 6		-	Note 6	110 J	150 J	-	-		
Di-n-butylphthalate	8100	NA	39 J	160 J	-	45 J	83 J	52 J	-	-		10,000 J
Fluoranthene	50,000	200 - 166,000	Note 6	170 J	-	220 J	770	770	-	-		
Fluorene	50,000	NA	Note 6		-	Note 6		51 J	-	-		12,000
Indeno(1,2,3-cd)pyrene	3200	8,000 - 61,000	Note 6	310 J	-	330 J	650	660	-	-		
Naphthalene	13,000	NA	Note 6		-	Note 6	200 J	280 J	-	-		5,100 J
Phenanthrene	50,000	NA	Note 6	52 J	-	Note 6	490	580	-	-		8,700 J
Pyrene	50,000	145 - 147,000	Note 6	170 J	-	190 J	510	480	-	-	0	19,440
Total BaP Equivalent[5]	NA	NA	0	490	-	612	1,114	1,189	-	-	1,300	110,600
Total SVOCs	500,000***	NA	799	2,549	-	3,013	8,155	8,336	-	-		
Volatile Organic Compounds - VOCs (µg/kg)												
1,1,1-Trichloroethane	800	NA				-		-			-	
Acetone	200	NA	4 J			-	6 J	-		21 J	-	
Benzene	60	NA				-		-			-	4 J
Cyclohexane	NA	NA				-	3 J	-			-	
Isopropylbenzene	5,000	NA				-		-	11 J	15 J	-	
M+P-xylene	1,200	NA				-	2 J	-			-	
O-xylene		NA				-		-				
Methyl Acetate	NA	NA				-		-			-	
Methycyclohexane	NA	NA				-	2 J	-			-	
Methylene chloride	100	NA				-		-			-	
Toluene	1,500	NA				-	3 J	-			-	
Trichloroethene	700	NA				-		-			-	
Total VOCs	10,000	NA	4			-	16	-		36	-	4

Notes: See Page 5

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MALCOLM PIRNIE

TABLE 2-2
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL OCTOBER 2004 SAMPLING
REMEDIAL INVESTIGATION REPORT
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Notes:

Shaded Sample locations represent samples taken of the fill materials. Unshaded sample locations represent samples of native soils.
Only those analytes detected at a minimum of one location are shown.
Blank space indicates analyte was not detected.
Shaded concentrations exceed TAGM values for Pest/PCBs, SVOCs, and VOCs.
Shaded TAL Inorganic Analytes exceed upper range of Eastern USA Background Concentrations and TAGM values.
Bold/Italic SVOC results exceed upper limit of Urban Soils Background Range for PAHs.
(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.
(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.
(3) SVOCs background from Background Soil Concentrations of Poly Aromatic Hydrocarbons (PAHs), Urban Soils (U.S. and Other), Toxicological Profile for PAHs, US Dept. of Health and Human Services, August 1995.
(4) USEPA Region 3 Soil Screening Level.
(5) Total BaP equivalent - Benzo (a) pyrene equivalent is calculated by multiplying the following individual PAH concentrations by their multiplier (#) and summing the results. Benzo (a) pyrene (1.00); Dibenzo (a,h) anthracene (1.00); Benzo (a) anthracene (0.10); Benzo (b) fluoranthene (0.10); Ideno (1,2,3-cd) pyrene (0.10); Benzo (k) fluoranthene (0.01); Chrysene (0.01).

(6) Rejected base-neutral fraction non-detects due to low surrogate recovery for 1,2-dichlorobenzene-d4 (<10%), positive base-neutrals qualified "J", negative bias suggested.
*** - The Soil Cleanup Objective refers to the sum of these compounds.
D - indicates a result detected in a secondary dilution factor.
J - Indicates and estimated value.

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MALCOLM PIRNIE

TABLE 2-3
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - APRIL 2004 SAMPLING
SUBSURFACE INVESTIGATION
FORMER INGERSOLL RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (feet bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	SB-CT-01 0 to 5 4/8/2004	SB-CT-01 5 to 10 4/8/2004	SB-R1-01 4 to 7 4/8/2004	SB-R1-02 8 to 16 4/8/2004	SB-R1-03 3 to 6 4/8/2004	SB-R1-04 2 to 4 4/8/2004	SB-R2-01 0 to 4 4/12/2004	SB-R2-02 2 to 8 4/12/2004
pH										
pH	NA	NA	7.42	7.58	7.61	8.08	7.84	7.57	7.51	6.74
TAL Inorganic Analytes (mg/kg)										
Aluminum	SB	33,000	-	-	-	-	-	-	-	-
Antimony	SB	N/A	-	-	-	-	-	-	-	-
Arsenic	7.5 or SB	3 - 12	-	-	-	-	-	-	-	-
Barium	300 or SB	15 - 600	-	-	-	-	-	-	-	-
Beryllium	0.16 or SB	0 - 1.75	-	-	-	-	-	-	-	-
Cadmium	1 or SB	0.1 - 1	-	-	-	-	-	-	-	-
Calcium	SB	130 - 35,000	-	-	-	-	-	-	-	-
Chromium	10 or SB	1.5 - 40	-	-	-	-	-	-	-	-
Cobalt	30 or SB	2.5 - 60	-	-	-	-	-	-	-	-
Copper	25 or SB	1 - 50	-	-	-	-	-	-	-	-
Iron	2000 or sb	2,000 - 550,000	-	-	-	-	-	-	-	-
Lead	400[4]	200-500	-	-	-	-	-	-	-	-
Magnesium	SB	100 - 5,000	-	-	-	-	-	-	-	-
Manganese	SB	50 - 5,000	-	-	-	-	-	-	-	-
Mercury	0.1	0.001 - 0.2	-	-	-	-	-	-	-	-
Nickel	13 or SB	0.5 - 25	-	-	-	-	-	-	-	-
Potassium	SB	8,500 - 43,000	-	-	-	-	-	-	-	-
Selenium	2 or SB	0.1 - 3.9	-	-	-	-	-	-	-	-
Silver	SB	N/A	-	-	-	-	-	-	-	-
Sodium	SB	6,000 - 8,000	-	-	-	-	-	-	-	-
Thallium	SB	N/A	-	-	-	-	-	-	-	-
Vanadium	150 or SB	1 - 300	-	-	-	-	-	-	-	-
Zinc	20 or SB	9 - 50	-	-	-	-	-	-	-	-
Polycyclic Aromatic Hydrocarbons (ug/kg)										
Acenaphthene	50,000	NA			1,300 J					980 J
Acenaphthylene	41,000	NA								2,300 J
Anthracene	50,000	NA								5,100
Benzo(a)anthracene	224	169 - 59,000	1,700 J	1,800 J	11,000		4,000 J	5,900	1,100 J	5,100
Benzo(a)pyrene	61	165 - 220	*3,200*	*3,200*	*22,000*		*5,200 J*	*8,500*	*2,000 J*	*3,500*
Benzo(b)fluoranthene	1,100	15,000 - 62,000	6,800	7,000	31,000		9,700	16,000	3,800	3,600
Benzo(g,h,i)perylene	50,000	900 - 47,000	4,600 J	4,500	16,000			10,000	2,500	
Benzo(k)fluoranthene	1,100	300 - 26,000	2,000 J	1,500 J	9,700		3,200 J	3,900 J	1,100 J	
Chrysene	400	251 - 640	*3,100*	*3,000*	*15,000*		*5,800*	*8,700*	*1,600 J*	*6,100*
Dibenzo(a,h)anthracene	14	NA	1,400 J		3,500 J			3,400 J		
Fluoranthene	50,000	200 - 166,000	1,800 J	2,000 J	14,000		4,700 J	7,600	1,100 J	7,600
Fluorene	50,000	NA								730 J
Indeno(1,2,3-cd)pyrene	3,200	8,000 - 61,000	3,800	4,300	1,700		3,800 J	8,300	2,100 J	
Naphthalene	13,000	NA								11,000
Phenanthrene	50,000	NA			2,500 J		1,200 J	5,000 J		10,000
Pyrene	50,000	145 - 147,000	1,900 J	1,500 J	16,000		4,400 J	8,000	1,400 J	957
Total BaP equivalent[5]	NA	NA	6,969	5,530	23,430		1,455	15,917	3,074	50,910
Total PAHs	500,000***	NA	30,300	28,800	143,700		42,000	85,300	16,700	

Notes: (see page 5)

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MALCOLM PIRNIE

TABLE 2-3
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - APRIL 2004 SAMPLING
SUBSURFACE INVESTIGATION
FORMER INGERSOLL RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (feet bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	SB-R2-03 1 to 4.5 4/12/2004	SB-R2-04 1 to 4 4/12/2004	SB-R2-05/06 2 to 10 4/12/2004	SB-R3-01 0 to 4 4/14/2004	SB-R3-01 4 to 8 4/14/2004	SB-R3-02 0 to 4 4/14/2004	SB-R3-02 4 to 7 4/14/2004	SB-R3-03 0 to 6 4/14/2004
pH										
pH	NA	NA	7.18	7.39	8.53	6.38	7.7	7.1	6.68	7.04
TAL Inorganic Analytes (mg/kg)										
Aluminum	SB	33,000	-	-	-	-	-	-	-	-
Antimony	SB	N/A	-	-	-	-	-	-	-	-
Arsenic	7.5 or SB	3 - 12	-	-	-	-	-	-	-	-
Barium	300 or SB	15 - 600	-	-	-	-	-	-	-	-
Beryllium	0.16 or SB	0 - 1.75	-	-	-	-	-	-	-	-
Cadmium	1 or SB	0.1 - 1	-	-	-	-	-	-	-	-
Calcium	SB	130 - 35,000	-	-	-	-	-	-	-	-
Chromium	10 or SB	1.5 - 40	-	-	-	-	-	-	-	-
Cobalt	30 or SB	2.5 - 60	-	-	-	-	-	-	-	-
Copper	25 or SB	1 - 50	-	-	-	-	-	-	-	-
Iron	2000 or sb	2,000 - 550,000	-	-	-	-	-	-	-	-
Lead	400 [4]	200-500	-	-	-	-	-	-	-	-
Magnesium	SB	100 - 5,000	-	-	-	-	-	-	-	-
Manganese	SB	50 - 5,000	-	-	-	-	-	-	-	-
Mercury	0.1	0.001 - 0.2	-	-	-	-	-	-	-	-
Nickel	13 or SB	0.5 - 25	-	-	-	-	-	-	-	-
Potassium	SB	8,500 - 43,000	-	-	-	-	-	-	-	-
Selenium	2 or SB	0.1 - 3.9	-	-	-	-	-	-	-	-
Silver	SB	N/A	-	-	-	-	-	-	-	-
Sodium	SB	6,000 - 8,000	-	-	-	-	-	-	-	-
Thallium	SB	N/A	-	-	-	-	-	-	-	-
Vanadium	150 or SB	1 - 300	-	-	-	-	-	-	-	-
Zinc	20 or SB	9 - 50	-	-	-	-	-	-	-	-
Polycyclic Aromatic Hydrocarbons (ug/kg)										
Acenaphthene	50,000	NA								
Acenaphthylene	41,000	NA								
Anthracene	50,000	NA				1,900	350	1,700 J	6,200	640 J
Benzo(a)anthracene	224	169 - 59,000	2,300 J	5,900 D		*3,500*	*580*	*2,500 J*	*11,000*	*970 J*
Benzo(a)pyrene	61	165 - 220	*3,700*	*7,900 D*		5,600	1,200	4,200	16,000	1,500 J
Benzo(b)fluoranthene	1,100	15,000 - 62,000	6,200	15,000 D	91 J	2,900	770	3,000	9,000	
Benzo(g,h,i)perylene	50,000	900 - 47,000	3,500	6,900 D		2,100	260 J		5,000	
Benzo(k)fluoranthene	1,100	300 - 26,000	2,000 J	3,100 JD		*3,000*	580	*3,700*	*9,000*	*1,100 J*
Chrysene	400	251 - 640	*3,600*	*8,300 D*	64 J	880 J	230 J	960 J	2,000	
Dibenzo(a,h)anthracene	14	NA	1,100 J			1,800	300	1,100 J	5,500	
Fluoranthene	50,000	200 - 166,000	2,700 J	6,700 D						
Fluorene	50,000	NA				3,000	660	2,200 J	9,200	
Indeno(1,2,3-cd)pyrene	3,200	8,000 - 61,000	2,900	6,800						
Naphthalene	13,000	NA				300 J	86 J		740 J	
Phenanthrene	50,000	NA	950 J	1,600 JD		1,700	280	1,500 J	5,300	
Pyrene	50,000	145 - 147,000	2,600 J	5,600 D		4,706	1,177	4,673	13,890	
Total BaP equivalent[5]	NA	NA	5,588	9,193		26,680	5,296	20,260	78,940	
Total PAHs	500,000***	NA	31,550	67,800						

Notes: (see page 5)

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MALCOLM PIRNIE

TABLE 2-3
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - APRIL 2004 SAMPLING
SUBSURFACE INVESTIGATION
FORMER INGERSOLL RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (feet bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	SB-R3-03 6 to 12 4/14/2004	SB-R3-04 2 to 5 4/14/2004	SB-R3-04 5 to 7 4/14/2004	SB-X2 (SB-R3-04) 5 to 7 4/14/2004	SB-R3-05 2 to 10 4/14/2004	SB-R3-06 0 to 4 4/14/2004	SB-R3-06 4 to 8 4/14/2004	SB-GT-01/02 2 to 10 4/9/2004
pH										
pH	NA	NA	7.46	7.5	7.05	7.40	9.1	7.56	7.34	8.02
TAL Inorganic Analytes (mg/kg)										
Aluminum	SB	33,000	-	-	-	-	-	-	-	7,650
Antimony	SB	N/A	-	-	-	-	-	-	-	2.4 J
Arsenic	7.5 or SB	3 - 12	-	-	-	-	-	-	-	3.84 J
Barium	300 or SB	15 - 600	-	-	-	-	-	-	-	43.4
Beryllium	0.16 or SB	0 - 1.75	-	-	-	-	-	-	-	0.258 J
Cadmium	1 or SB	0.1 - 1	-	-	-	-	-	-	-	0.27 J
Calcium	SB	130 - 35,000	-	-	-	-	-	-	-	19,000
Chromium	10 or SB	1.5 - 40	-	-	-	-	-	-	-	9.74
Cobalt	30 or SB	2.5 - 60	-	-	-	-	-	-	-	3.83
Copper	25 or SB	1 - 50	-	-	-	-	-	-	-	24.3
Iron	2000 or sb	2,000 - 550,000	-	-	-	-	-	-	-	15,000
Lead	400 [4]	200-500	-	-	-	-	-	-	-	13.5
Magnesium	SB	100 - 5,000	-	-	-	-	-	-	-	6,580
Manganese	SB	50 - 5,000	-	-	-	-	-	-	-	925 J
Mercury	0.1	0.001 - 0.2	-	-	-	-	-	-	-	0.038 J
Nickel	13 or SB	0.5 - 25	-	-	-	-	-	-	-	26.9 J
Potassium	SB	8,500 - 43,000	-	-	-	-	-	-	-	627
Selenium	2 or SB	0.1 - 3.9	-	-	-	-	-	-	-	0.28 J
Silver	SB	N/A	-	-	-	-	-	-	-	0.78 J
Sodium	SB	6,000 - 8,000	-	-	-	-	-	-	-	97.6 J
Thallium	SB	N/A	-	-	-	-	-	-	-	
Vanadium	150 or SB	1 - 300	-	-	-	-	-	-	-	15.1
Zinc	20 or SB	9 - 50	-	-	-	-	-	-	-	67.7
Polycyclic Aromatic Hydrocarbons (ug/kg)										
Acenaphthene	50,000	NA						750 J	2,800	
Acenaphthylene	41,000	NA						540 J		
Anthracene	50,000	NA						710 J	580 J	
Benzo(a)anthracene	224	169 - 59,000	560 J	850 J	730 J	970 J		1,800	3,600	630 J
Benzo(a)pyrene	61	165 - 220	*720 J*	*1,400*	*1,100 J*	*1,400 J*		*2,800*	*8,800*	*1,000 J*
Benzo(b)fluoranthene	1,100	15,000 - 62,000	1,300 J	2,600	2,200	2,900		4,300	12,000	1,900
Benzo(g,h,i)perylene	50,000	900 - 47,000		1,600	1,200 J			3,200	9,800	1,500
Benzo(k)fluoranthene	1,100	300 - 26,000		950 J	800 J	930 J		1,100 J	3,400	
Chrysene	400	251 - 640	*790 J*	*1,300*	*1,200 J*			*2,200*	*4,300*	*1,000 J*
Dibenzo(a,h)anthracene	14	NA						850 J	2,300 J	430 J
Fluoranthene	50,000	200 - 166,000	530 J	670 J	670 J	800 J		2,800	3,800	640 J
Fluorene	50,000	NA						910 J	560 J	
Indeno(1,2,3-cd)pyrene	3,200	8,000 - 61,000	620 J	1,600	1,200 J	1,500 J		3,200	10,000	1,200 J
Naphthalene	13,000	NA						1,900	580 J	
Phenanthrene	50,000	NA						5,000	3,200	
Pyrene	50,000	145 - 147,000	710 J	650 J				4,100	4,000	620 J
Total BaP equivalent[5]	NA	NA		2,024	1,537			4,895	14,503	2,242
Total PAHs	500,000***	NA		11,620	9,100			36,160	69,720	8,920

Notes: (see page 5)

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MALCOLM PIRNIE

TABLE 2-3
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - APRIL 2004 SAMPLING
SUBSURFACE INVESTIGATION
FORMER INGERSOLL RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (feet bgs) Collection Date	NYSDEC TAGM 4046[1]	Urban Background Concentrations[2][3]	SB-GT-03/04 2 to 10 4/9/2004	SB-X1 (SB-GT-03/04) 2 to 10 4/9/2004	SB-GT-05 2 to 8 4/9/2004	SB-GT-06/07 5 to 10 4/12/2004	SB-GT-07 1 to 5 4/12/2004	SB-GT-08 2 to 16 4/13/2004	SB-GT-09/10 2 to 10 4/14/2004	SB-GT-11 2 to 10 4/14/2004
pH			7.86	8.00	7.03	8.72	7.39	7.5	8.09	7.72
pH	NA	NA								
TAL Inorganic Analytes (mg/kg)										
Aluminum	SB	33,000	5,620	6,960	4,500	10,600	11,400	6,030	5,730	5,730
Antimony	SB	N/A	3.7 J	2.5 J	3.3 J	4.2 J	2.8 J	8.36 J	3 J	2.7 J
Arsenic	7.5 or SB	3 - 12	3.67 J	3.0 J	2.17	4.06	1.84	3.39	2.97	1.58
Barium	300 or SB	15 - 600	30.5	36.1	17.8 J	42.4	22.3	29.2	27.8	26.9
Beryllium	0.16 or SB	0 - 1.75	0.2 J	0.24 J	0.12 J	0.252 J	0.18 J	0.1 J	0.19 J	0.206 J
Cadmium	1 or SB	0.1 - 1	0.21 J	0.18 J	0.22 J	0.15 J	0.13 J	0.26 J	0.16 J	0.07 J
Calcium	SB	130 - 35,000	20,900	32,000	1020	47,700 J	1,620 J	3,010 J	69,400 J	1,460 J
Chromium	10 or SB	1.5 - 40	8.63	8.0	9.38	9.24	8.06	43.4	7.19	5.79
Cobalt	30 or SB	2.5 - 60	4.49	3.5	1.73	4.75	1.96 J	2.77 B	3.94 J	3.33 J
Copper	25 or SB	1 - 50	20.7	22.5	27.3	30.1 J	10.4 J	73 J	17.5 J	9 J
Iron	2000 or sb	2,000 - 550,000	12,000	14,400	28,800	14,200	8,900	18,100	10,600	10,300
Lead	400 [4]	200-500	8.48	20.7	11.7	8.64 J	14.2 J	52.3 J	5.87 J	9.44 J
Magnesium	SB	100 - 5,000	5,580	8,220	587	12,100 J	721 J	674 J	28,000 J	1,180 J
Manganese	SB	50 - 5,000	432 J	406 J	260 J	531	95.6	322	465	184
Mercury	0.1	0.001 - 0.2	0.03		0.032 J			0.071	0.038 J	0.03 J
Nickel	13 or SB	0.5 - 25	13.2 J	14.5	22 J	15	6.4	46.7	10.2	10.1
Potassium	SB	8,500 - 43,000	620	726	421 J	683	544	306 J	668	705
Selenium	2 or SB	0.1 - 3.9	0.33 J	0.66 J	0.17 J	0.46 J	0.21 J	0.24 J	0.47 J	0.21 J
Silver	SB	N/A		0.69 J	0.6 J	0.88 J	0.82 J	1.07		
Sodium	SB	6,000 - 8,000	184 J	390 J	66 J	72.1 J	88.2 J	72.4 J	85.4 J	104 J
Thallium	SB	N/A								
Vanadium	150 or SB	1 - 300	9.43	12.0	9.91	10.2	12.8	7.98	7.95	10.7
Zinc	20 or SB	9 - 50	53.8	64.7	14.5	60.9 J	14.4 J	75.9 J	62.5 J	19.8 J
Polycyclic Aromatic Hydrocarbons (ug/kg)										
Acenaphthene	50,000	NA								
Acenaphthylene	41,000	NA								
Anthracene	50,000	NA	86 J	52 J						1,000 J
Benzo(a)anthracene	224	169 - 59,000	100 J	180 J	4,700 JD	58 J	2,300 D	4,600		*1,700*
Benzo(a)pyrene	61	165 - 220	83 J	*150 J*	*8,600 D*		*3,400 D*	*8,000*		3,000
Benzo(b)fluoranthene	1,100	15,000 - 62,000	160 J	260	15,000 D	66 J	10,000 D	15,000		2,000
Benzo(g,h,i)perylene	50,000	900 - 47,000			11,000 D		7,000 D	8,200		820 J
Benzo(k)fluoranthene	1,100	300 - 26,000			4,800 JD		2,800 D	3,600		*1,700*
Chrysene	400	251 - 640	120 J	190 J	*7,400 D*	*76 J*	*4,900 D*	*7,000*		
Dibenzo(a,h)anthracene	14	NA			2,800 JD		1,600 D	2,200		
Fluoranthene	50,000	200 - 166,000	226 J	360	4,500 JD		2,700 D	5,500		1,300
Fluorene	50,000	NA				93 J				
Indeno(1,2,3-cd)pyrene	3,200	8,000 - 61,000		110 J	8,700 D		6,400 D	8,000		1,800
Naphthalene	13,000	NA								
Phenanthrene	50,000	NA	190 J	170 J		190 J	520 JD	950 J		320 J
Pyrene	50,000	145 - 147,000	170 J	280	4,900 JD	140 J	1,900 D	5,200		1,300
Total BaP equivalent[5]	NA	NA			16,224		9,959	12,680		2,497
Total PAHs	500,000***	NA			72,400		43,520	68,250		14,940

Notes: (see page 5)

Created by: SC Date: 05/04/04
Checked by: JR Date: 06/24/04

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TABLE 2-3
SUMMARY OF ANALYTICAL RESULTS - SUBSURFACE SOIL - APRIL 2004 SAMPLING
SUBSURFACE INVESTIGATION
FORMER INGERSOLL RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Notes:

Shaded Sample locations represent samples taken of the fill materials. Unshaded sample locations represent samples of native soils.
Only those analytes detected at a minimum of one location are shown.
Blank space indicates analyte was not detected.
Shaded concentrations exceed TAGM values for Pest/PCBs, SVOCs, and VOCs.
Shaded TAL Inorganic Analytes exceed upper range of Eastern USA Background Concentrations and TAGM values.
Bold/Italic SVOC results exceed upper limit of Urban Soils Background Range for PAHs.
(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.
(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.

(3) SVOCs background from Background Soil Concentrations of Poly Aromatic Hydrocarbons (PAHs), Urban Soils (U.S. and other), Toxicological Profile for PAHs, US Dept. of Health and Human Services, August 1995.

(4) USEPA Region 3 Soil Screening Level.

(5) Total BaP equivalent - Benzo (a) pyrene equivalent is calculated by multiplying the following individual PAH concentrations by their multiplier (#) and summing the results. Benzo (a) pyrene (1.00); Dibenzo (a,h) anthracene (1.00); Benzo (a) anthracene (0.10); Benzo (b) fluoranthene (0.10); Ideno (1,2,3-cd) pyrene (0.10); Benzo (k) fluoranthene (0.01); Chrysene (0.01).
*** - The Soil Cleanup Objective refers to the sum of all SVOCs.
J - Indicates and estimated value.
B - Aanlyte detected in method or trip blank.
D - indicates a result detected in a secondary dilution factor.
NA indicates Not Applicable
\- indicates Not Analyzed

Created by: BW Date: 4/18/2004
Checked by: SC Date: 4/19/2004

- Elevated concentrations (above TAGM cleanup objectives) of arsenic, cadmium, calcium, chromium, copper and mercury are located sporadically throughout the fill.

2.3 Risk Assessment Results

A human health risk assessment and a fish and wildlife impact analysis were performed for the Site to evaluate the impacts to receptor populations exposed, or potentially exposed to site COPECs. Based on existing conditions (without remediation), there is a potential for short-term exposure to contaminated surface soils via dermal contact or ingestion. Exposure to COPECs identified in foundry sands and subsurface soils is possible, if engaged in intrusive activities.

A risk assessment based on the proposed Site remediation identified construction workers as the only population that could be exposed to Site COPECs. Potential exposure to soils and groundwater could be expected during construction activities but would be mitigated with implementation of a site-specific health and safety plan (HASP).

Based on the fish and wildlife impact analysis described in the Remedial Investigation (RI), selected COPECs found in Site soils may potentially cause adverse effects to the Eastern cottontail rabbit which was used as the baseline ecological receptor. However, with the exception of arsenic the magnitude of risk based on the concentrations of the selected COPECs found in soils is not great. There was no risk associated with the Site groundwater due to attenuation and dilution as water recharges to the Cohoctan River.

2.4 Remedial Action Objectives

A qualitative human health and ecological risk assessment was performed to evaluate potential for exposure to Site contaminants. The primary remedial action objective for the Site is to evaluate and select a remedy for the Site that supports the planned redevelopment and reduces the potential risks posed by Site soils and fill.

Figure 2-2 illustrates the footprint for the structure and associated infrastructure proposed for the Site. Within the construction footprint, the risk assessment confirmed that surface and

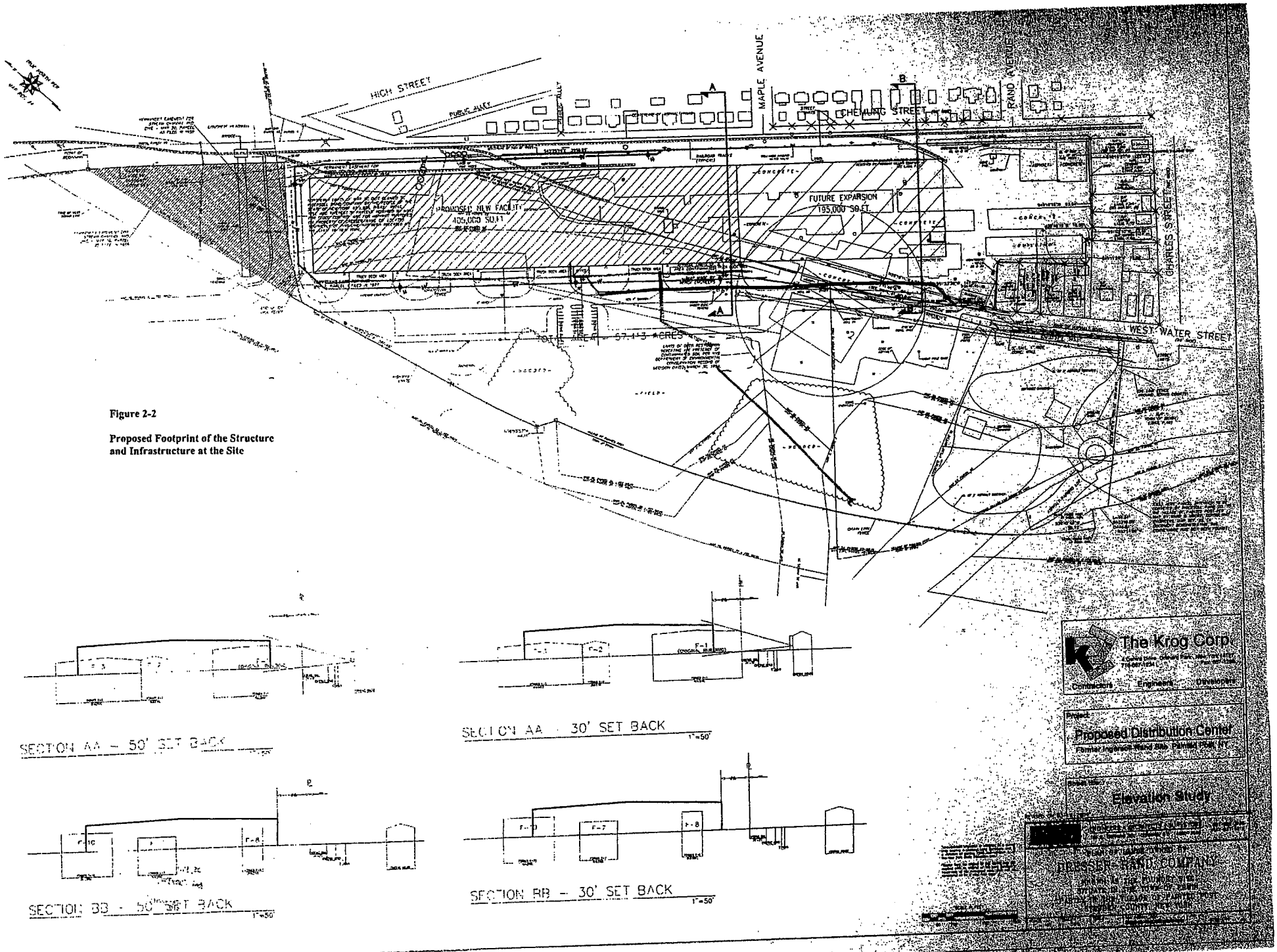

Figure 2-2

Proposed Footprint of the Structure and Infrastructure at the Site

subsurface fill material, which will be handled in grading the Site and excavating for footings or Site infrastructure, poses a potential risk for on-site workers. As a result, soil management protocols are necessary to limit the potential for exposure of on-site workers to contaminated fill materials. The proposed protocols are presented in Appendix A and include procedures for determining what materials will be returned to the Site for use once excavated and what must be sent for off-site disposal.

Outside the construction areas, surface soil sampling has confirmed that limited contamination is present in the northernmost treed area of the Site. Therefore, no remedial action is proposed in this area.

Results of soil and groundwater sampling has confirmed that contaminants present in the fill have not migrated into native soils or groundwater, therefore no remedial action is proposed for these media.

The risk assessment confirmed that direct contact with contaminated surface soils poses a risk to the public and/or on-site workers. Therefore, on-surface fill materials are identified as requiring remediation.

Based on proposed construction activities 25,600 cubic yards of fill material are affected. The following section describes the evaluation of potential remedial alternatives for this volume of fill.

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SECTION 3 Identification of Remedial Alternatives

3.1 General Response Actions

In accordance with the October 2003 legislation outlining Brownfields Cleanup Program requirements, until soil cleanup numbers are developed, site owners are required to evaluate both remedies that allow unrestricted site use as well as remedies that rely upon institutional controls or engineering controls (IC/ECs). Remedies available to provide unrestricted use of the site include excavation and off-site disposal of all fill materials on-site, off-site disposal of fill materials excavated during construction only, and in-situ or ex-situ treatment of the contaminated fill. Treatment technologies potentially applicable for the contaminants associated with site include: solidification/stabilization, bioremediation, phytoremediation, chemical oxidation, electrokinetic separation and soil flushing. Restricted use remediation of the site can be accomplished by providing soil cover over all areas of the site where direct contact will not be precluded by the presence of either proposed buildings or pavement. The following section describes each of these alternatives.

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Description of Remedial Alternatives

SECTION 4

4.1 Unrestricted Use Remedies

Excavation and Off-site Disposal

This alternative involves excavation of fill materials and off-site transport and placement in an appropriately permitted secure landfill. Two options exist under this alternative: excavation and off-site disposal of all fill materials, or disposal of only those fill materials encountered during construction for Site infrastructure. The cost for off-site disposal of all Site fill and then backfilling and regrading before Site construction activities begin would make the cost for Site development prohibitive, and thus will not be considered further.

Treatment Technologies

Solidification/Stabilization (S/S) involves physically binding or enclosing the site contaminants within a stabilized mass (solidification), or inducing chemical reactions between the stabilizing agent and the contaminants to reduce their mobility (stabilization). S/S can be applied in-situ or ex-situ. The target contaminant group for in-situ S/S is generally inorganics and thus would not address the PAHs. The In-Situ Vitrification (ISV) process can destroy or remove organics and immobilize most inorganics in contaminated soils, sludge, or other earthen materials. The process has been tested on a broad range of VOCs and SVOCs, other organics including dioxins and PCBs, and on most priority pollutant metals and radionuclides. However, future usage of the site may "weather" the materials and affect their ability to maintain immobilization of contaminants and most processes result in a significant increase in volume (up to double the original volume). In addition, the solidified material would hinder future site uses. As a result S/S is considered not applicable for remediation of this site and will not be further considered.

Bioremediation/Bio-augmentation describes the activity of naturally occurring or inoculated microbes stimulated by circulating water-based solutions through the contaminated soils to enhance in situ biological degradation of organic contaminants or immobilization of inorganic contaminants. Nutrients, oxygen, or other amendments may be used to enhance bioremediation and contaminant desorption from subsurface materials. The contaminant groups treated most often are PAHs, non-halogenated SVOCs (not including PAHs), and BTEX. Remediation of metals with microbial techniques is in the experimental stage, with limited data/guidance. Bioleaching uses microorganisms to solubilize metal contaminants either by direct action of the bacteria, as a result of interactions with metabolic products, or both. Bioleaching can be used in-situ or ex-situ to aid the removal of metals from soil. Because of bioremediation's limited applicability for treating recalcitrant PAHs and metals, and the potential for the on-site metals concentrations to be toxic to the microorganisms, this treatment technology is considered not applicable for remediation of this site and will not be considered further.

Phytoremediation is a process that uses plants to remove, transfer, stabilize, or destroy contaminants in soil, sediment, and groundwater. The mechanisms of phytoremediation include enhanced rhizosphere biodegradation, which takes place in soil or groundwater immediately surrounding plant roots; phytoextraction (also known as phytoaccumulation), the uptake of contaminants by plant roots and the translocation/accumulation of contaminants into plant shoots and leaves; phytodegradation, the metabolism of contaminants within plant tissues; and phytostabilization, the production of chemical compounds by plants to immobilize contaminants at the interface of roots and soil. Phytoremediation applies to all biological, chemical, and physical processes that are influenced by plants (including the rhizosphere) and that aid in cleanup of the contaminated substances. Plants can be used in site remediation, both through the mineralization of toxic organic compounds and through the accumulation and concentration of heavy metals and other inorganic compounds from soil into aboveground shoots. Phytoremediation may be applicable for the remediation of metals, pesticides, solvents, explosives, crude oil, PAHs, and landfill leachates. Some plant species have the ability to store metals in their roots. As the roots become saturated with metal contaminants, they can be harvested. Hyper-accumulator plants may be able to remove and store significant amount of metallic contaminants. Currently, trees are under investigation to determine their ability to remove organic contaminants from ground water, translocate and transpiration, and possibly

metabolize them either to CO2 or plant tissue. The depth of the treatment zone varies based on the plants used in phytoremediation, but in most cases, it is limited to shallow soils. High concentrations of some contaminants can be toxic to plants. In addition, the process occurs seasonally. Since different planting materials would be required for each group of site contaminants, this process likely requires many seasons to remediate to non-risk concentrations, may not consistently remove materials from across the site and with depth, and products may be mobilized into groundwater or bioaccumulated in animals. This treatment technology is considered not applicable for remediation of the site and will not be considered further.

Chemical Oxidation chemically converts hazardous contaminants to non-hazardous or less toxic compounds that are more stable, less mobile, and/or inert. The oxidizing agents most commonly used are ozone, hydrogen peroxide, hypochlorites, chlorine, and chlorine dioxide. This technology can be applied in-situ or ex-situ. In-situ chemical oxidation (ISCO) using permanganate for soil and groundwater treatment and has been demonstrated at a number of sites on the following organics: chlorinated solvents (such as trichloroethylene [TCE]), naphthalene, and pyrene. Fenton's Reagent can be used to treat a wide range of organic contaminants in soil and groundwater, including chlorinated solvents, petroleum hydrocarbons, semi-volatile organic compounds (SVOCs), and pesticides. ISCO has also been used to remediate polyaromatic hydrocarbons (PAHs), petroleum products, and ordnance compounds. Chemical treatment may be used to solubilize contaminants from the most contaminated fraction of the soil. Many processes manipulate the acid/base chemistry of the slurry to leach contaminants from the soil. Oxidizing and reducing agents (e.g., hydrogen peroxide, sodium borohydride) provide yet another option to aid in solubilization of metals since chemical oxidation/ reduction can convert metals to more soluble forms. Finally, surfactants may be used in extraction of the metals from soil. Because different chemicals would be required to treat each contaminant group, and application is limited by the ability of the oxidants to reach the contaminants, this treatment technology is considered not applicable for remediation of this site and will not be considered further.

Electrokinetic Separation relies upon the application of a low-intensity direct current through the soil between ceramic electrodes that are divided into a cathode array and an anode array. This mobilizes charged species, causing ions and water to move toward the electrodes. Metal

ions, ammonium ions, and positively charged organic compounds move toward the cathode. Anions such as chloride, cyanide, fluoride, nitrate, and negatively charged organic compounds move toward the anode. The current creates an acid front at the anode and a base front at the cathode. This generation of acidic condition in-situ may help to mobilize sorbed metal contaminants for transport to the collection system at the cathode. Concentrated (migrated) contaminants are then removed for treatment or can be treated in treatment walls as they migrate. The polarity of the electrodes is reversed periodically, which reverses the direction of the contaminants back and forth through treatment zones. Electrokinetics has been used for decades in the oil recovery industry and to remove water from soils, but in-situ application of electrokinetics to remediate contaminated soil is new. Recently, attention has focused on developing in-situ electrokinetic techniques for the treatment of low permeability soils, which are resistant to remediation with traditional technologies because of their low hydraulic conductivity. Because of its limited effectiveness for non-polar organic contaminants, such as PAHs, because they will not migrate with the current, this treatment technology is considered not applicable for remediation of this site and will not be considered further.

In-Situ Soil Flushing is used to mobilize metals by leaching contaminants from soils so that they can be extracted without excavating the contaminated materials. An aqueous extracting solution is injected into or sprayed onto the contaminated area to mobilize the contaminants, usually by solubilization. After being contacted with the contaminated material, the extractant solution is collected using pump-and-treat methods for disposal or treatment and reuse. Common extracting agents include acids/bases, chelating agents, oxidizing/reducing agents and surfactants cosolvents. This process can be applied in-situ or ex-situ (soil washing). The target contaminant groups for soil washing are SVOCs, fuels, and heavy metals. The technology can be used on selected VOCs and pesticides. The technology offers the ability for recovery of metals and can clean a wide range of organic and inorganic contaminants from coarse-grained soils. However, complex mixture of contaminants in the soil (such as a mixture of metals, nonvolatile organics, and SVOCs) and heterogeneous contaminant compositions throughout the soil mixture make it difficult to formulate a single suitable washing solution that will consistently and reliably remove all of the different types of contaminants. There is additionally limited data regarding flushing for PAHs. For these reasons, this treatment technology is considered not applicable for remediation of this site and will not be considered further.

4.2 Restricted Use Remedies

In order to eliminate potential exposure risks associated with direct contact with site fill material, the entire Site can be covered as part of site redevelopment. The cover system would be placed directly on top of the regraded on-site fill material and will include clean soil for outdoor, vegetated areas, asphalt for roads and parking lots, or concrete for sidewalks, buildings and heavy use areas. Responsibility for monitoring and maintenance of the site cover system is delineated in the Brownfield Cleanup Agreement. An Operation, Monitoring, and Maintenance (OM&M) Work Plan for implementation following remediation of the site is included in Appendix C.

The proposed cover system has been designed to be protective of human health and the environment. The primary exposure pathway for contaminants at the site (metals and PAHs in soil) is via direct contact. The proposed plan of covering the on-site fill material will eliminate the potential for direct contact with soil and is therefore protective of human health and the environment. Groundwater data indicate that the contaminants present at the site are not impacting groundwater quality.

Exposure to the soil fill piles during construction will be precluded for on-site workers and trespassers through covering. Exposure to fill at the surface would be precluded for future on-site workers through covering. The potential for exposure through invasive on-site construction activities would be managed by implementation of the protocols of the Soil/Fill Management Plan.

Following redevelopment, the site will not present a significant risk to wildlife because the site will be completely covered with clean fill, asphalt or concrete. Additionally, although some wildlife may occasionally use the site, the presence of human activities will inhibit significant use of the site by wildlife.

Preparation of Site Surface

The site will require grading prior to cover placement activities. The surface will be graded to a regular topographic surface as planned for redevelopment with grading completed such that precipitation events will not cause the formation of standing water. All trees, shrubs, stumps, roots, brush, masonry, rubbish, scrap, debris, pavement, curbs, fences and miscellaneous structures in the construction areas will either be buried, or removed and disposed of off-site at a permitted disposal facility. Prior to placement of the cover soil, all protruding material will be removed from the ground surface. Burning shall not be allowed on the site.

The placement of the cover material may occur as portions of the site are developed or after construction of the proposed structures. Under either scenario, the site will be hydroseeded to limit dust generation from the soil/fill that has not yet been covered.

Soil

In areas that will not receive significant equipment or vehicular use, the minimum cover system will be composed of documented clean off-site soil tested in accordance with Section A.4 of the Soil/Fill Management Plan and found to contain constituent concentrations less than those specified in NYSDEC TAGM 4046. The completed soil cover will be of a thickness required to maintain sufficient vegetative cover to prevent exposure to the on-site fill material. The minimum soil thickness must be 12 inches.

Berms or mounds may be composed of excavated soil/fill. In areas in which trees and shrubs will be planted, the berms or mounds will be of sufficient thickness to allow the excavation of only clean fill to a depth sufficient to plant the tree or shrub root ball. Unless additional soil is required for the plantings, the soil cover thickness will be 12 inches. The soil used to cover the berms or mounds will contain sufficient organic material to allow the growth of trees and/or shrubs and will be of sufficient strength to support trees and/or shrubs at their maximum height. Fill containing lumps, pockets, or concentrations of silt or clay, rubble, debris, wood or other organic matter will not be acceptable. Fill containing unacceptable material shall be removed and disposed appropriately.

Topsoil used for the final cover shall meet the following general specifications:

1. Fertile, friable, natural loam surface soil, capable of sustaining plant growth, and free of clods of hard earth, plants or roots, sticks or other extraneous material harmful to plant growth. The topsoil shall be well-graded with the following approximate analysis:

   a.

Sieve Size	Percent Passing by Weight
3-inch	100
No. 4	>75
No. 200	>30
0.002 mm	<20

   b. pH 5.5 to pH 7.6.

   c. Minimum organic content of 2.5 percent as determined by ignition loss.

   d. Soluble salt content not greater than 500 ppm.

2. Before delivery, soil samples will conform to the criteria specified in Sections 2.3 and 2.4 in the Soil/Fill Management Plan.

Grass seed used for final cover shall meet the following general specifications:

1. The grass seed mixture will be fresh, clean, new-crop seed complying with the tolerance for purity and germination established by the Official Seed Analysts of North America.

2. The entire ground surface disturbed by construction operations shall be seeded with 100 lbs/acre of seed conforming to the following:

   a.

Name of Grass	Application Rate (lbs/acre)	Purity (%)	Germination (%)
Perennial Ryegrass	10	95	85

Kentucky Bluegrass	20	85	75
Strong Creeping Red Fescue	20	95	80
Chewings Fescue	20	95	80
Hard Fescue	20	95	80
White Clover	10	98	75

b. Germination and purity percentages should equal or exceed the minimum seed standards listed. If it necessary to use seed with a germination percentage less than the minimum recommended above, the seeding rate will be increased accordingly to compensate for the lower germinations.

c. Weed seed content will be less than 0.25 percent and free of noxious weeds.

d. All seed shall be rejected if the label lists any of the following grasses:

   1) Sheep Fescue

   2) Meadow Fescue

   3) Canada Blue

   4) Alta Fescue

   5) Kentucky 31 Fescue

   6) Bent Grass

3. In addition to the seed mixtures listed above, one bushel per acre of oats or rye seed shall be sowed over the entire area, including drainage ditches, to provide a quick shade cover and to prevent erosion during turf establishment.

Asphalt

The cover system in areas that will become roads, sidewalks, and parking lots will consist of a minimum of two inches of asphalt that will be placed over the soil/fill material at the site. The asphalt will be placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area regraded to a regular surface.

Concrete

The cover system in areas that will become slab-on-grade structures will consist of a minimum of two inches of concrete that will be placed above the soil/fill material. The concrete will be placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence. Concrete may also be used instead of asphalt for roads, sidewalks, and parking lots. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area regraded to a sufficient regular surface.

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Remedial Evaluation Criteria

SECTION 5

The criteria used to evaluate the selected remedial technologies include the following:

- Short-term effectiveness and impacts
- Long-term effectiveness and permanence
- Implementability
- Reduction of toxicity, mobility and volume
- Conformance to standards, criteria and guidance
- Overall Protectiveness
- Cost

The issues considered for each critiera are discussed blow.

Short term Effectiveness and Impacts - The effectiveness of alternatives in protecting human health and the environment during construction and implementation of the remedial action is evaluated by this criterion. Short-term effectiveness is assessed by protection of the community, protection of workers, environmental impacts, and time until protection is achieved.

Long term Effectiveness and Permanence - This criterion evaluates the long-term protection of human health and the environment at the completion of the remedial action. Effectiveness is assessed with respect to the magnitude of residual risks; adequacy of controls, if

any, in managing residuals or untreated wastes that remain at the Site; reliability of controls against possible failure, and potential to provide continued protection.

Reduction of Toxicity, Mobility, and Volume - This evaluation criterion prioritizes those remedial actions that permanently and significantly reduce toxicity, mobility, or volume of the hazardous substances. This criterion is satisfied when the treatment is used to reduce the principal threats at a site through destruction of toxic contaminants, irreversible reduction in contaminant mobility, or reduction of total volume of contaminated media.

Implementability - This assessment criterion evaluates the technical and administrative feasibility of implementing alternatives and the availability of services and materials.

Compliance with Standards, Criteria, and Guidelines - This threshold addresses whether or not a remedy will meet regulatory environmental limits.

Overall Protection of Human Health and the Environment - This is a threshold assessment, which addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled. This evaluation allows for consideration of whether an alternative poses any unacceptable short term or cross-media impacts.

Cost - The estimated capital and operation and maintenance (O&M) costs.

These criteria serve to provide a basis of comparison and allow for ranking of the alternatives by preference and acceptability.

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SECTION 6

Detailed Evaluation of Restricted Use Remedial Alternatives

Potential remedial technologies that could reasonably be developed for the Site are identified and evaluated in this section. No unrestricted Site use alternatives are considered feasible for redevelopment of the Site. Only remedies that accomplish restricted Site use are evaluated in this detailed evaluation of remedial alternatives.

Alternative 1 – Restricted Site Use - Excavation and Off-Site Disposal – Cover System

Alternative 2 – Restricted Site Use – Excavation Using Soil/Fill Management - Cover System

6.1 Alternative 1 - Excavation and Off-Site Disposal – Cover System

This alternative involves the removal of all excavated fill and contaminated soils and off-site transport and placement in an appropriately permitted secure landfill, backfill placement and installation of a cover system of either asphalt, concrete or a minimum of one-foot of clean fill. A discussion of the evaluation criteria for this alternative follows.

Excavation of the waste and subsequent backfilling and re-grading would effectively eliminate the source of the contamination. Short-term risks of exposure to construction personnel could be adequately managed through the appropriate use of personal protective equipment (PPE), and health and safety protocols. Disposal of the removed material at an approved off-site facility would effectively eliminate the human health risks posed by the Site and would thus

provide a permanent remedy for the site. This alternative does pose a slight potential risk of exposure to the public during transport to the disposal facility if a truck were to spill its contents.

The time to implement this alternative (i.e., excavate and remove the site's contaminated fill/soil) would be reasonable and is not anticipated to appreciably extend the timeline for site development. Excavation of the Site's waste material could be accomplished using standard construction equipment and techniques. Some time will be required to sample and characterize the soil/fill and obtain appropriate approvals for disposal. This alternative would reduce the mobility of the contaminants, but not the toxicity or volume. Under this alternative SSALs would be achieved and no long-term monitoring or special maintenance of the site will be required.

Table 6-1 presents the capital cost of this alternative. While this alternative is implementable and effective in achieving the remedial action objectives, the transportation and disposal cost of the excavated materials would be approximately $4.3 million dollars.

6.2 Alternative 2 – Excavation Using Soil/Fill Management - Cover System

This alternative involves excavation of soil/fill using a soil/fill management plan followed by the installation of a cover system of either asphalt, concrete or a minimum of one foot of documented clean fill covering the entire Site. No long-term monitoring is required. A discussion of the evaluation criteria for this alternative follows.

Implementation of any of the cover types would require appropriate grading of the fill material. Any short-term risk of exposure to construction personnel could be adequately managed through the use of personal protective equipment (PPE) and appropriate health and safety protocols. Short-term risk of exposure to trespassers during construction activities would be addressed through covering stockpiled soil/fill, temporary seeding of graded soil/fill areas and site security. Once the construction is complete and the Site is fully covered, the risk to on-site workers and the public will be eliminated and sustained through adequate protections and maintenance of the cover systems. Exposure risks to future construction workers would be

Table 6-1
Alternative 1 - Restricted Site Use Scenario
Off-Site Disposal of Excavated Fill

ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT	ESTIMATED UNIT PRICE	ESTIMATED BID AMOUNT
1	Excavation and Off-Site Disposal of Fill Material (1)	38,400	Tons	$70	$2,688,000
2	Off-Site Backfill Material For Foundations	1,600	CY	$12	$19,200
3	6" clean soil cover material (2)	25,300	CY	$15	$379,500
4	Misc. Environmental costs (3)	1	LS	$50,000	$50,000
Sub-Total					$3,136,700
20% Contingency					$627,300
Total Project Cost					**$3,764,000**

1) Assumes fill contains non-hazardous concentrations of PAHs and metals, above the Site-Specific Action Limits (SSALs)

2) A 6" topsoil layer will also be required to be placed above the clean soil barrier layer. It is assumed that this cost along with landscaping and restoration, is a necessary development cost for any site.

3) Misc costs include PID screeninig, health and safety plan development, site safety officer, decontamination units, site access control, NYSDEC coordination, and construction certification report preparation.

adequately managed through the Soil/Fill Management protocols and appropriate health and safety protocols. The time to implement this alternative does not materially affect the construction schedule and standard readily available construction equipment and techniques would be utilized. This alternative would reduce the mobility of the contaminants, but not their toxicity or volume. The SSAL's would be achieved through implementation of the Soil/Fill Management Plan, since no excavated fill or soils with concentrations in excess of the SSAL's would be returned to the Site. The resulting Site condition would not pose a potential risk to human health provided the cover systems are appropriately maintained. Table 6-2 presents the capital cost of this alternative. The cost to implement this alternative is approximately $1.4 million in capital cost.

Table 6-2
Alternative 2 - Restricted Site Use Scenario
On-Site Reutilization of Excavated Fill with Cover System

ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT	ESTIMATED UNIT PRICE	ESTIMATED BID AMOUNT
1	Excavation and Off-Site Disposal of Fill Material (1)	1,920	Tons	$70	$134,400
2	Analytical Soil Sampling	256	Samples	$500	$128,000
3	6" clean soil cover material (3)	25,300	CY	$15	$379,500
4	Misc. Environmental costs (4)	1	LS	$70,000	$70,000
Sub-Total					$711,900
20% Contingency					$142,400
Total Project Cost					**$854,300**

1) Assumes 5% of excavated soils contain non hazardous concentrations of PAHs and metals, above the Site-Specific Action Limits (SSALs)

2) 25, 600 CY of excavated material sampled every 100 cubic yards for TCL VOCs, SVOCs, pesticides and PCBs, metals, and pH

3) A 6" topsoil layer will also be required to be placed above the clean soil barrier layer. It is assumed that this cost along with landscaping and restoration, is a necessary development cost for any site.

4) Misc costs include polyethylene sheeting for stockpiles/stockpile management, PID screening, health and safety plan development, site safety officer, decontamination units, site access control, NYSDEC coordination, and construction certification report preparation.

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SECTION 7

Comparative Analysis of Remedial Alternatives

This comparison of the alternatives evaluates the relative performance of each alternative with respect to each of the evaluation criteria: short-term effectiveness and impacts; long-term effectiveness and permanence; reduction of toxicity, mobility, and volume; implementability; compliance with standards, criteria, and guidelines; overall protection of human health and the environment, and cost. The advantages and disadvantages of the alternatives are identified so that trade-offs between the alternatives can be appropriately evaluated. Tables 6-1 and 6-2 provide the capital costs for each alternative.

Short-term Effectiveness and Impacts – Equivalent levels of potential exposure for workers exist under both alternatives. Short-term exposure risk would be minimal for the public for the excavation and disposal alternative.

Long-term Effectiveness and Permanence – The cover systems alternative would not remove the contaminant source, but with routine maintenance would be effective in long-term containment of the waste. The excavation and removal alternative would remove the contamination from the Site and thus be considered a permanent remedy.

Reduction of Toxicity, Mobility, and Volume – Both the alternatives would reduce the mobility of the contaminants. Neither alternative would reduce the toxicity, or volume of the contaminated fill.

Implementability – Both the alternatives are readily implementable with standard construction equipment and techniques.

Compliance with Standards, Criteria, and Guidelines – Both alternatives would be expected to achieve compliance with SSAL's.

Overall Protection of Human Health and the Environment – Both alternatives provide equivalent protection of human health or ecological receptors.

Cost – Capital cost for implementing the excavation and disposal remedial action for the Site were estimated as $4.3 million, as compared to $1.4 million for the cover system alternative.

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SECTION 8

Recommended Approach

8.1 Proposed Approach

Both of the restricted use alternatives provide comparable long-term effectiveness and overall protection to human health and the environment, but excavation and disposal at a properly permitted landfill increases the cost for Site development by almost $3 million.

As a result, based on an evaluation of the criteria for each alternative and review of the capital cost impact, the Excavation Using Soil/Fill Management Cover System Alternative would provide the best overall remedy for the Site. This alternative is able to provide effective long-term contaminant containment and be protective of both on-site and off-site potential receptors at a lower overall cost.

8.2 Soil/Fill Management Plan (SFMP)

During construction activities at the site, excavation of soil/fill material will be necessary for the construction of utility corridors. Excavation may also be necessary during the construction of footings for structures and for other activities including the planting of trees. Although a number of environmental investigations have been conducted at the Site to characterize the nature and extent of contamination, the nature of investigations does not allow for a 100 percent complete or accurate characterization. Therefore, it is possible that some quantity of unsuspected contamination may be encountered during redevelopment activities.

Soil management protocols are necessary to limit the potential for exposure of on-site workers to contaminated fill material. The soil handling protocols will also be necessary for assisting with the determination of whether soil/fill removed during excavation activities may be reused on-site or must be disposed off-site. The Soil/Fill Management Protocols are included in Appendix A.

8.3 Health and Safety

Invasive work performed at the Site will be performed in accordance with all applicable local, state, and federal regulations to protect worker health and safety. The Soil/Fill Management Protocols (Appendix A) describes recommended Health and Safety procedures for intrusive work activities of the Site.

All contractors performing redevelopment or maintenance activities involving intrusive work at the Site will be required to prepare a site-specific, activity-specific Health and Safety Plan. In order to facilitate the creation of an appropriate Health and Safety Plan by the contractor(s) performing work, the ranges of concentrations of contaminants detected in soil and groundwater samples collected during previous site investigations conducted by Malcolm Pirnie are shown in Tables 2-1, 2-2, and 2-3 respectively.

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References

SECTION 9

Allwash. *Environmental Cleanup Final Report.* February 1987.

Capsule Environmental Engineers, Inc. (CEE). *Site Assessment Report*. December 1985.

CEE. *Planned Remediation.* July 1987.

CEE. *Final Report Environmental Remediation.* November 28, 1988.

CEE. *Final Analytical Review* November 1, 1989.

CEE. *Subsurface Investigation Report.* February 9, 1993.

CEE. *Report of the Subsurface Evaluation of MW-2B- Additional Groundwater Quality Assessment Investigation.* August 1993.

CEE. *Focused Feasibility Study.* February 1994.

CEE. *Sampling and Analysis Plan for the Long Term Monitoring of the Site Groundwater Quality.* August 1994.

CEE. *1997 Annual Ground Water Monitoring Report.* September 1997.

Law Environmental. *Interim Stratigraphy Report for a Phase I Groundwater Quality Assessment.* January 1992.

Malcolm Pirnie, Inc. *Citizen Participation Plan for the Brownfield Cleanup Program Investigation of the former Ingersoll-Rand Foundry Site.* July 2004.

References

State of New York Department of Environmental Conservation. *Order on Consent.* December 31, 1986

State of New York Department of Environmental Conservation. *Record of Decision* March 1994.

Wenck Associates, Inc. *Groundwater Quality Assessment*. September 1992.

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Soil/Fill Management Protocols

APPENDIX A

The objective of this Soil/Fill Management Plan (SFMP) is to set guidelines for management of soil material during any activities, which would breach the cover system. The SFMP is a portion of the overall remedy, which addresses disturbance/use of any residually contaminated soil fill left on the Site, after other elements of the remedy have been implemented. This SFMP addresses environmental concerns related to soil/fill management. This SFMP is not intended to serve as a design document for construction activities related to redevelopment activities. It is the developer's responsibility to prepare a design that incorporates the requirements for cover and soil management as set forth in this SFMP.

A.1 Excavation and Handling of On-Site Soil/Fill

No excavation, grading or disturbance of the final vegetated soil cover or existing subgrade soil/fill shall be initiated prior to a minimum of three working days notification to the NYSDEC Region 8, Division of Environmental Remediation. A Professional Engineer with remedial investigation experience, representing the subject property owner or developer will oversee soil/fill excavations or disturbances. The excavation activities will be conducted in accordance with the protocols detailed herein.

All on-site soil/fill will be presumed to contain metals and PAHs and will be handled in accordance with the provisions of this SFMP. Although a number of environmental investigations have been conducted at the Site to characterize the nature and extent of contamination, the nature of investigations does not allow for a 100 percent complete or accurate characterization. It is possible that some quantity of unsuspected contamination may be encountered during redevelopment activities. Therefore, as a safeguard for unknown or

unsuspected contamination presence, during excavation, all soil/fill will be visually inspected for staining and will be field screened for the presence of volatile organic compounds (VOCs). A photoionization detector (PID) will be used to check for VOCs. Visual observation will be sufficient to identify stained soils. Stained soil is soil that is discolored, tinted, dyed, unnaturally mottled, or contains a sheen. Attachment II contains a Standard Operating Procedure for Soil Screening. Excavated soil/fill that is visibly stained or produces elevated PID readings (i.e., sustained 10 PPM or greater) will be considered potentially contaminated and stockpiled separately on-site for further assessment. The potentially contaminated soil/fill will be stockpiled (in maximum 100 cubic yard piles) on polyethylene sheeting and then sampled to determine its ultimate disposition; viz., reuse or off-site disposal. The stockpiled potentially contaminated soil/fill will also be completely covered using polyethylene sheeting to reduce particle runoff and entrain dust. Sampling and analysis will be completed in accordance with the protocols delineated in Section A.2. Soil/fill containing one or more constituents in excess of the site-specific action levels (SSALs) shown in Table A-1 will be transported off-site to a permitted waste management facility. Soil/fill awaiting analytical results or awaiting transportation will be stored continuously on-site under polyethylene sheeting.

Any soil/fill with a pH higher than 12.5 is considered hazardous and therefore must be properly disposed off-site. Additionally, any soil/fill with a pH greater than 9.0 but less than 12.5 may be reused on-site but only to fill in areas below grade. This soil/fill may not be used as backfill in utility trenches or to create berms or other above grade mounds. This soil/fill must also be covered with clean material in accordance with Section 3.2 of the Remedial Work Plan.

If buried drums or underground storage tanks are encountered during soil excavation activities, excavation will cease and the NYSDEC will be immediately notified. All drums and/or underground storage tanks encountered will be evaluated and the Owner will submit a removal plan for NYSDEC approval. Appropriately trained personnel will excavate all of the drums and/or underground storage tanks while following all applicable federal, state, and local regulations. Removed drums and underground storage tanks will be properly characterized and disposed off-site. The soil/fill surrounding the buried drums or underground storage tanks will be considered as potentially contaminated and will be stockpiled and characterized.

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TABLE A-1
SITE SPECIFIC ACTION LEVELS
SOIL/FILL HANDING PLAN
FORMER INGERSOLL-RAND FOUNDRY SITE
PAINTED POST, NEW YORK

Sample Location Sampling Depth (ft. bgs) Collection D	NYSDEC TAGM 4046[1]	Eastern USA Background Concentrations[2]	Maximum Concentration Detected[3]	Average Concentration Detected	Frequency of Detections	Proposed Site Specific Action Level (SSAL)
TAL Inorganic Analytes (mg/kg)						
Arsenic	7.5 or SB	3 - 12	14.50	5.25	30 / 31	50[4]
Cadmium	1 or SB	0.1 - 1	2.80	0.59	31 / 31	20[4]
Chromium	10 or SB	1.5 - 40	554	48.3	31 / 31	500[4]
Copper	25 or SB	1 - 50	327	43.2	31 / 31	200
Mercury	0.1	0.001 - 0.2	0.33	0.06	26 / 31	1.0[4]
Nickel	13 or SB	0.5 - 25	164	26.2	31 / 31	100
Total Cyanide	NA	NA	1.67	0.08	1 / 22	50[4]
Zinc	20 or SB	9 - 50	216	76.1	31 / 31	500
Pest/PCBs (ug/kg)						
Total Pesticides	10	NA	0.0	0	0 / 22	10,000[4]
Total PCBs (Surface - 1.0')	1,000	NA	2,400	413	3 / 7	1,000[4]
Total PCBs (Subsurface > 1.0')	10,000	NA	480	91	4 / 15	10,000[4]
Semi-Volatile Organic Compounds - SVOCs (ug/kg)						
Total SVOCs	500,000	NA	143,700	25,969	51 / 54	500,000[4]
Volatile Organic Compounds - VOCs (ug/kg)						
Total VOCs	10,000	NA	19.5	4.1	15 / 22	10,000[4]

Notes:

(1) New York State Dept. of Environmental Conservation TAGM 4046, Recommended Soil Cleanup Objectives, Dec. 2000.

(2) TAL Inorganic Analytes from Eastern USA Background as shown in New York State Dept. of Environmental Conservation TAGM 4046, Dec. 2000.

(3) Maximum concentration detected during the subsurface investigation (MPI, April 2004) and the remedial investigation (MPI, October

(4) Site Specific Action Levels for Hanna Furnace former Railroad Yard Area (Subparcel 1), Soil Fill Handling Plan, as prepared by Malcolm Pirnie, February 2002. Action levels were negotiated and approved by NYSDEC.

NA - Not Avaialable.

ND - Not Detected

Created by: BW Date: 10/25/2004
Checked by: KRM Date: 10/26//2004

All excavations or disturbances must be backfilled as soon as the work allows. Backfilled excavations must be covered with suitable cover material defined in Section 4.2 of the Remedial Action Work Plan) within ten working days of backfilling or as otherwise approved by the NYSDEC.

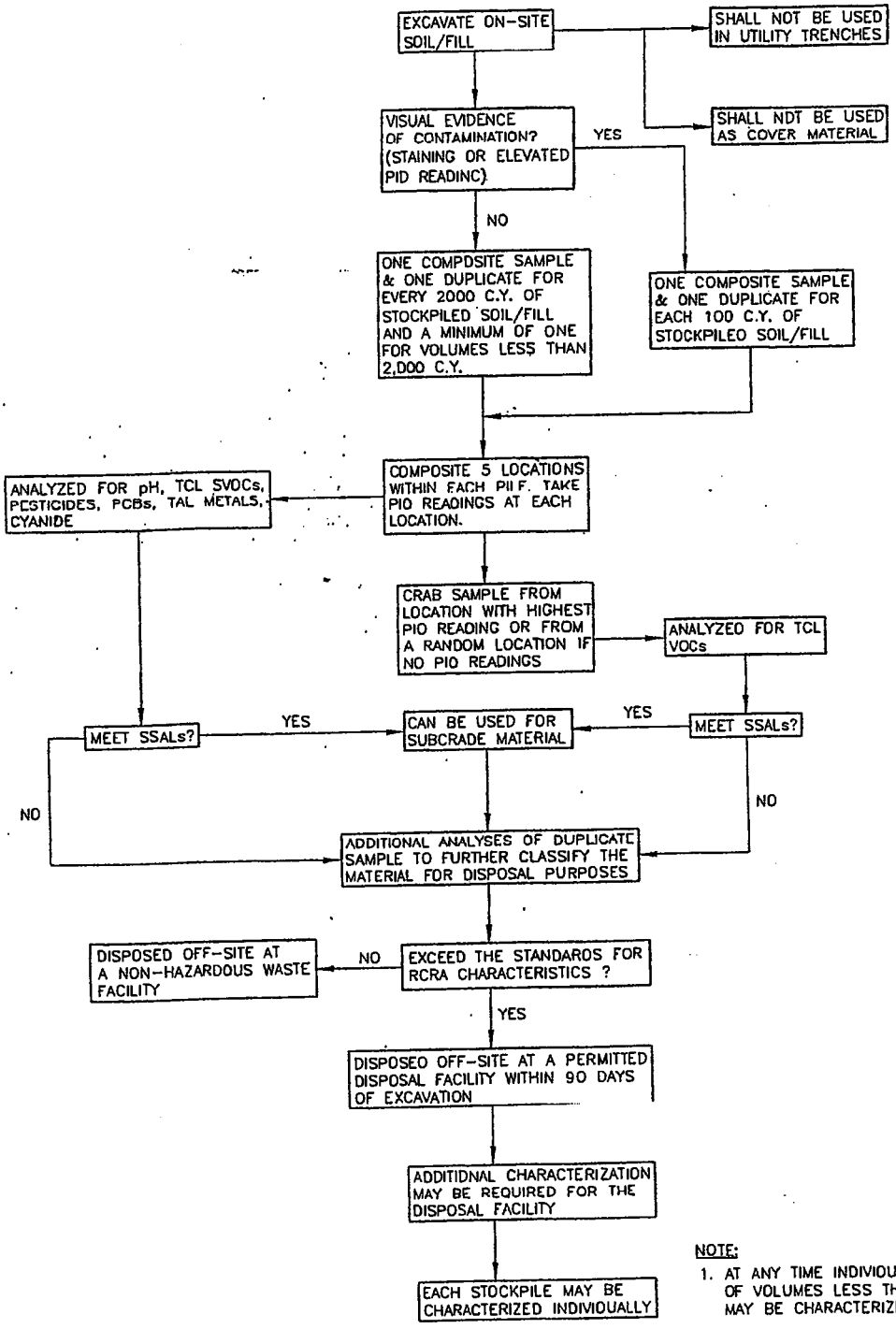
If no evidence of additional contamination is encountered through the screening during excavation activities, the excavated soil fill will be stockpiled as appropriate on site. No special provisions for separate handling are required other than the characterization defined in Section A.2.

Excavated or disturbed backfill may be used as subgrade, excavation backfill or berm construction following characterization performed in accordance with Section A.2 if it meets the SSAL's presented in Table A-1.

A.2 Soil/Fill Sampling and Analysis Protocol

A soil/fill characterization flow chart is provided as Figure A-1. As stated in Section A.1, all excavated soil/fill that exhibits evidence of additional contamination through screening (staining or elevated PID measurements) will be stockpiled separately and sampled and classified for reuse or disposal. One composite soil sample will be collected for each 100 cubic yards of soil. The composite sample will be collected in the manner described in the Standard Operating Procedures (SOPs) included in Attachment II from five locations within each stockpile. PID measurements will be recorded for each of the five composite sample locations, and one grab sample and one duplicate sample will be collected from the location with the highest PID measurement of the five composite locations. The composite sample will be analyzed by a NYSDOH ELAP-certified laboratory for Target Compound List (TCL) semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs), and the metals arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver plus cyanide using current NYSDEC Analytical Services Protocols (ASP). Additionally, pH will be analyzed using SW-846 Method 9045. The grab sample will be analyzed for TCL volatile organic compounds (VOCs).

FIGURE A-1
SOIL/FILL CHARACTERIZATION FLOW CHART



NOTE:

1. AT ANY TIME INDIVIDUAL STOCKPILES OF VOLUMES LESS THAN THOSE STATED MAY BE CHARACTERIZED INDIVIDUALLY.

Excavated soil/fill that exhibits no evidence of additional contamination (staining or elevated PID measurements) will also require characterization prior to use as subgrade or backfill at the site. Characterization samples will be collected and analyzed at a frequency of not less than one sample for 2000 cubic yards of soil/fill, and a minimum of one sample will be collected for volumes less than 2000 cubic yards. The characterization samples will be collected in accordance with the protocols described above; the sampling efforts shall consist of discrete samples for VOCs and composite samples collected from five locations for the remaining analytes.

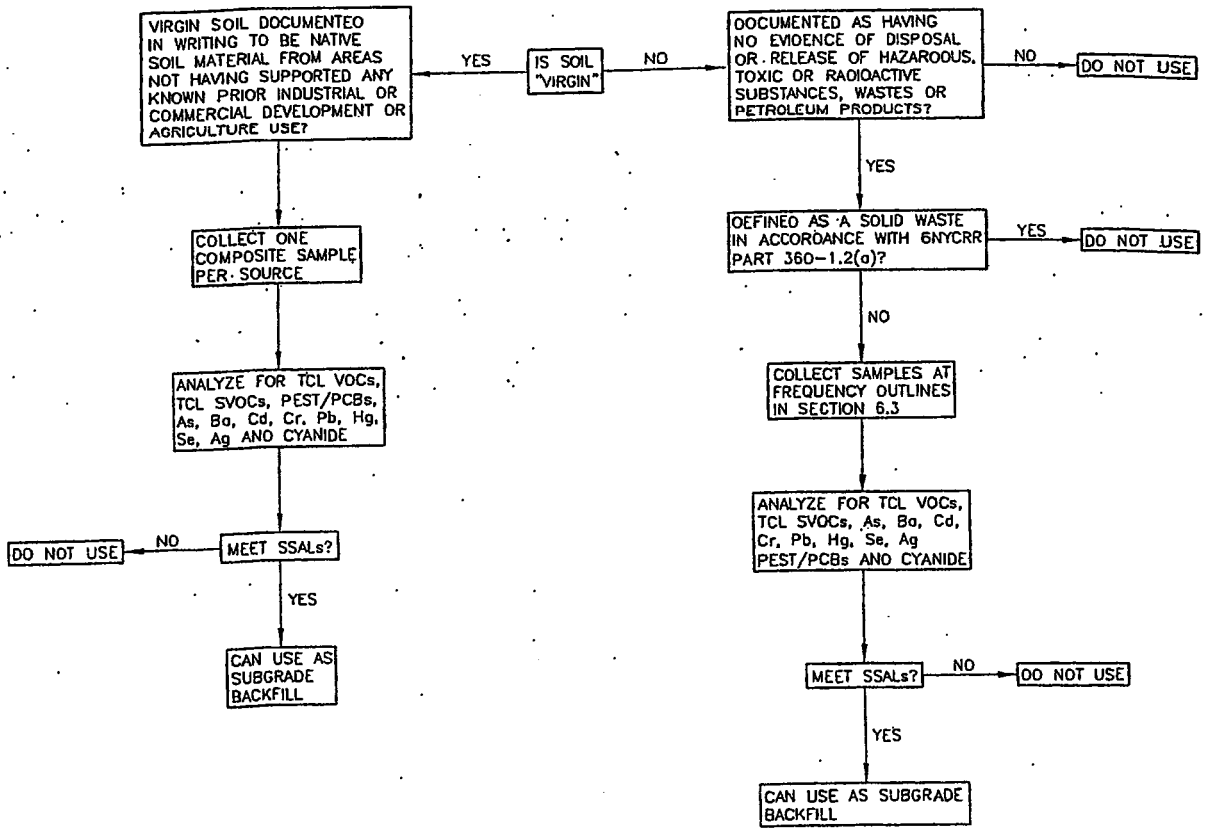
Any soil/fill that has been characterized and found to meet the SSALs may be reused as subgrade, excavation subgrade backfill, or for berm construction. If the analysis of the soil/fill samples reveals unacceptably high levels of any analytes (i.e., greater than one or more SSAL), additional analyses will be necessary to further classify the material for hazardous characteristics for disposal purposes. At a minimum, the duplicate sample will be analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) for the particular analytes that were detected at concentrations exceeding the SSALs. The duplicate sample may also be analyzed for RCRA Characteristics including reactivity, corrosivity, and ignitability. If the analytical results indicate that concentrations exceed the standards for either TCLP or RCRA Characteristic analysis, the material will be considered a hazardous waste and must be properly disposed off-site at a permitted disposal facility within 90 days of excavation. Additional characterization sampling for off-site disposal may be required by the disposal facility. To potentially reduce off-site disposal requirements/costs, the owner or site developer may also choose to characterize each stockpile individually.

A.3 Subgrade Material

Subgrade material used to backfill excavations or placed to increase site grades or elevation shall meet the following criteria (see Figure A-2):

- Excavated on-site soil/fill shall either exhibit no evidence of contamination (staining and/or elevated PID measurements) or, if evidence of contamination is present,

FIGURE A-2
SUBGRADE MATERIAL FLOW CHART



NOTE:

1. AT ANY TIME INDIVIDUAL STOCKPILES OF VOLUMES LESS THAN THOSE STATED MAY BE CHARACTERIZED INDIVIDUALLY.

analytical results of the soil/fill indicate that the contaminants are present at concentrations below the SSALs.

- Off-site borrow soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products.

- Off-site soils intended for use as site backfill cannot otherwise be defined as a solid waste in accordance with 6NYCRR Part 360-1.2(a).

- If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use.

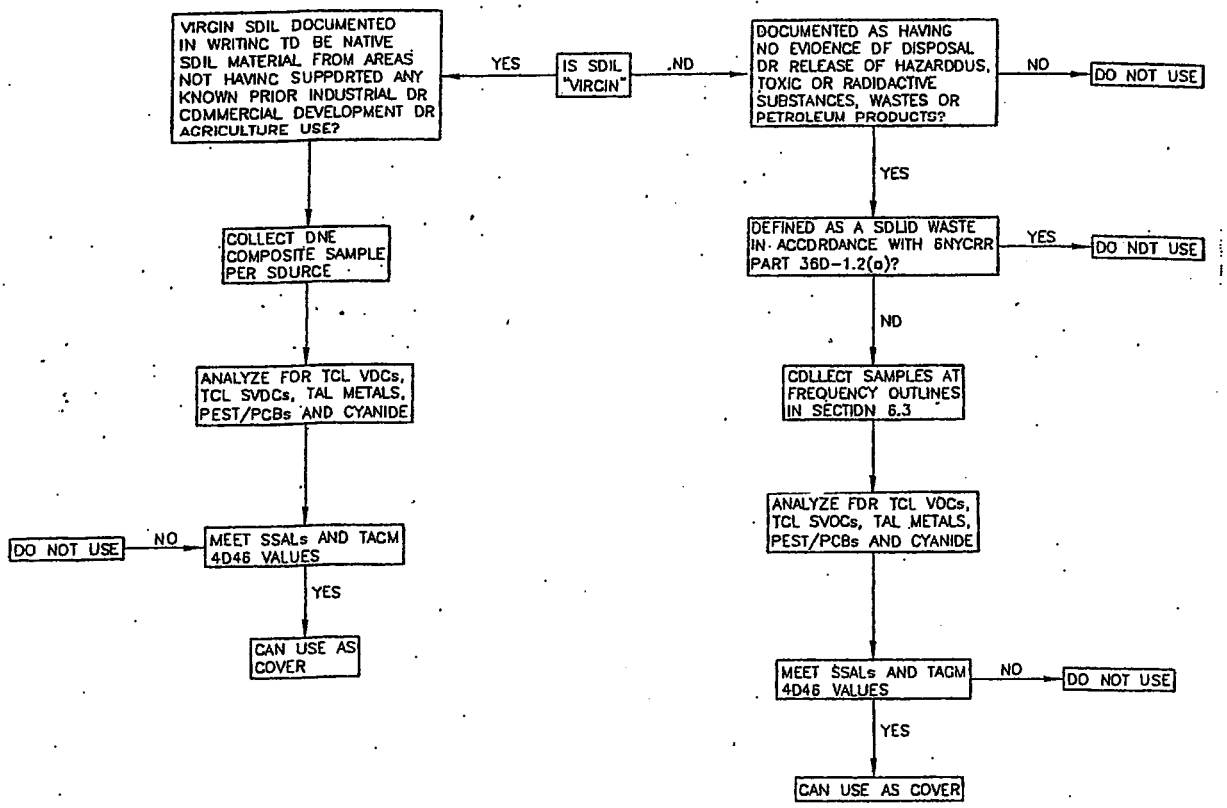
- Virgin soils should be subject to collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, SVOCs, pesticides, PCBs, and the metals arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver plus cyanide. The soil will be acceptable for use as backfill provided that all parameters meet the SSALs.

- Non-virgin source area soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are borrowed from a given off-site non-virgin soil source area and both samples of the first 1,000 cubic yards meet the SSALs, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the SSALs.

A.4 Final Cover

Surface coverage over the entire redeveloped parcel or subparcels will be required by the developer or owner as a pre-condition of occupancy. The purpose of the surface cover is to eliminate the potential for human contact with fill material. Surface coverage will consist of

FIGURE A-3
FINAL COVER MATERIAL FLOW CHART



NOTE:

1. AT ANY TIME INDIVIDUAL STOCKPILES OF VOLUMES LESS THAN THOSE STATED MAY BE CHARACTERIZED INDIVIDUALLY.

documented clean soil with vegetative cover, asphalt or concrete paving, or buildings with concrete floors.

The cover soil material shall meet the following criteria (see Figure A-3):

- Excavated on-site soil/fill shall not be used as cover material.
- Off-site borrow soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products.
- Off-site soils intended for use as site cover cannot otherwise be defined as a solid waste in accordance with 6NYCRR Part 360-1.2(a).
- If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use.
- Virgin soils should be subject to collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, SVOCs, pesticides, PCBs, and TAL metals plus cyanide. The soil will be acceptable for use as cover material provided that all parameters meet the NYSDEC recommended soil cleanup objectives included in TAGM 4046.
- Non-virgin source area soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are borrowed from a given off-site non-virgin soil source area and both samples of the first 1,000 cubic yards meet the TAGM 4046 criteria, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the TAGM 4046 criteria.
- To reduce the potential for disturbance of the soil cover material, berms or mounds composed of clean soil will be constructed in areas in which trees and shrubs will be planted.

A.5 Erosion Controls

A.5.1 General Guidelines

When site development or remedial actions require the disturbance of more than five acres of land, federal and state laws[1] require that the project obtain coverage under the NYSDEC SPDES General Permit for Storm Water Discharges from Construction Activities that are classified as "Associated with Industrial Activity", Permit #GP-93-06 (Construction Storm Water General Permit). Requirements for coverage under the Construction Storm Water General Permit include the submittal of a Notice of Intent form and the development of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must fulfill all permit requirements and must be prepared in accordance with "Chapter Four: the Storm Water Management and Erosion Control Plan" in Reducing Impacts of Storm Water Runoff from New Development, NYSDEC, 1992. This Storm Water Management and Erosion Control Plan, in accordance with permit requirements, will provide the following information:

- A background discussion of the scope of the construction project.
- A statement of the storm water management objectives.
- An evaluation of post-development runoff conditions.
- A description of proposed storm water control measures.

[1] The Federal Water Pollution Control Act (as amended, 33 U.S.C. 1251 et. Seq.) and the New York State Environmental Conservation Law: Article 17, Titles 7 and 8 and Article 70.

- A description of the type and frequency of maintenance activities required to support the control measure.

The SWPPP will address issues such as erosion prevention, sedimentation control, hydraulic loading, pollutant loading, ecological protection, physical site characteristics that impact design, and site management planning. The SWPP will also include a contingency plan to be implemented in the event of heavy rain events. All descriptions of proposed features and structures at the site will include a description of structure placement, supporting engineering data and calculations, construction scheduling, and references to established detailed design criteria. The SWPPP will conform to all requirements as established by applicable regulatory agencies.

Proven soil conservation practices will be incorporated in the construction and development plans to mitigate soil erosion damage, off-site sediment migration, and water pollution from erosion. These practices combine vegetative and structural measures. Many of these measures will be permanent in nature and become part of the completed construction project (design features such as drainage channels and grading). Other measures will be temporary and serve only during the construction stage. The contractor will remove temporary measures at the completion of construction. The selection of erosion and sediment control measures will be based on several general principles, including:

- The minimization of erosion through project design (maximum slopes, phased construction, etc.).
- The incorporation of temporary and permanent erosion control measures.
- The removal of sediment from sediment-laden storm water before it leaves the site.

The generic erosion and surface water control plan included in Attachment III details typical methods of erosion control that must be followed during site redevelopment activities. As described in Attachment III, a specific erosion and surface water control plan must be created prior to implementation of redevelopment activities. The use of appropriate temporary erosion control measures such as silt fencing and/or hay bales will be required around all soil/fill

stockpiles and unvegetated soil surfaces during redevelopment activities. These methods are described below, and Attachment IV includes details for various erosion control measures that might be used during site redevelopment activities. Stockpiles shall be graded and compacted as necessary for positive surface water runoff and dust control. Stockpiles of soil/fill will be placed a minimum of fifty feet from the boundaries.

A.5.2 Temporary and Permanent Erosion Control Measures

A.5.2.1 Temporary Measures

Temporary erosion and sedimentation control measures and facilities will be employed during active construction stages. Prior to any construction activity, temporary erosion and sediment control measures shall be installed and maintained until they are no longer needed, or until such time that permanent erosion control measures are installed and effective. Additional sediment control measures may also be necessary. Structural measures, as described below, will be designed and installed to provide the required sediment and erosion control. The following temporary measures will be incorporated into construction activities:

- Silt fencing.
- Straw bales.
- Temporary vegetation/mulching.

A.5.2.1.1 Silt Fencing

Regrading and capping activities may result in sheet flow to various areas of the site; therefore, silt fencing will be used as the primary sediment control measure. Prior to extensive clearing, grading, excavation, and placement of cover soils, silt fences will be installed along all construction perimeter areas to prevent sedimentation in low areas and drainage areas. The location and orientation of silt fencing to be used during redevelopment operations will be field determined. There may be breaks and overlaps in the silt fencing to allow construction vehicles access to the construction areas.

Intermediate silt fencing will be used upslope of perimeter areas where phased construction activities are occurring. This measure will effectively lower sheet flow velocities and reduce sediment loads to perimeter fencing. In addition, silt fencing around soil stockpiles will be employed.

As sediment collects along the silt fences, they will be cleaned to maintain desired roval performance and prevent structural failure of the fence. Removed sediment will be disposed on-site as general fill in a designated area. The perimeter silt fences will remain in place until construction activities in the area are completed and vegetative cover or other erosion control measures are adequately established. Silt fences will be provided and installed in accordance with the details presented in Attachment IV.

A.5.2.1.2 Straw Bales

Straw bales will be used to intercept sediment-laden runoff from storm water channels as needed during various phases of construction. Additional straw bale dikes may be necessary in some areas during some phases of construction.

Use of straw bales will be limited to swales and/or diversion ditches where the anticipated flow velocity will not be greater than 5 feet per second (fps). Where flows may eventually exceed 5 fps along a swale or diversion ditch, an intermediate straw bale barrier will be installed upgradient of the final bale barrier. The intermediate bale barrier will effectively reduce flow velocities and sediment load to the final barrier.

As with the silt fencing, sediment will be removed to maintain performance and prevent overtopping or failure of the straw bale barrier. Removed sediment will be disposed of on-site as general fill in a designated area. Sediment laden straw bales that have lost their structural integrity and/or effectiveness will be disposed of off-site as a solid waste. Straw bale barriers will remain in place until construction activities contributing sediment to the barrier are complete and vegetative cover or other erosion control measures are adequately established. Straw bales will be provided and installed in accordance with the details presented in Attachment IV.

A.5.2.1.3 Temporary Vegetation and Mulching

As a result of phased construction and split construction schedule, portions of the site may be left in intermediate/incomplete conditions. Intermediate areas may include rough graded areas awaiting finer grading or areas awaiting topsoil placement. Intermediate areas where activities will not resume for a period in excess of two weeks shall be seeded with a quick germinating variety of grass or covered with a layer of straw mulch.

The temporary cover will act to stabilize the soil and reduce erosion. As construction progresses, areas containing temporary vegetation or straw mulch can be covered without removal of the temporary vegetation or mulch.

A.5.2.2 Permanent Control Measures

Permanent erosion control measures and facilities will be incorporated during cover construction and during site redevelopment for long-term erosion protection. Permanent measures and facilities will be installed as early as possible during construction phases. Parking and building systems associated with redevelopment shall not include dry wells or other subsurface injections/disposal piping or facilities.

A.5.2.2.1 Design Features

The remedial construction activities will involve the installation of cover system including asphalt, concrete, or clean fill over the entire site. Permanent erosion control measures incorporate a combination of design features to limit overall erosion and sediment problems to practical design limits, and the placement of permanent facilities during site restoration for long-term erosion protection. The soil cover system will be designed based on the following criteria:

- Maximum slope of 33% (3H: 1V) to limit erosion.
- Minimize the potential contact with, and migration of, waste fill.
- Provide a medium for the growth of vegetation to control erosion.

Design features incorporated into the construction plans to control erosion will include limiting steep slopes, routing runoff to surface water collection channels, limiting flow velocities in the collection channels to the extent practical, and lining collection channels, where appropriate. In areas where flow will be concentrated (i.e; collection channels) the channel slopes and configuration will be designed to maintain channel stability.

A.5.2.2.2 Construction Features

Any final slopes greater than 25 percent will be reinforced or have a demarcation layer under the clean cover to indicate if erosion has extended into the subgrade. Following the placement of final cover soils over regraded areas, a revegetation program will be implemented to establish permanent vegetation. Vegetation serves to reduce erosion, enhance evapotranspiration, and improve runoff water quality. The areas to be grassed will be seeded in stages as construction in is completed with 70 lbs./acre of seed conforming to the mix included in 3.2.1 of the Remedial Work Plan. In addition to the above seed mixture, mulch, mulch blankets, or synthetic fabric will be placed to prevent erosion during turf establishment. Mulch will be placed on all slopes less than 15% and a mulch blanket on all slopes greater than 15%. Synthetic erosion control fabric will be placed in drainage ditches and swales. As an aid to turf establishment, seeded areas will be fertilized with a starter fertilizer.

A.6 Dust Controls

The surface of unvegetated or disturbed soil/fill areas will be wetted at all times with water or other dust suppressive agents to control dust during construction. There shall be no visible dust generated during redevelopment activities. Any subgrade material left exposed during extended interim periods (greater than 90 days) prior to placement of final cover shall be covered with a temporary cover system (i.e., tarps, spray type cover system, etc.) or planted with vegetation to control fugitive dust to the extent practicable. Particulate monitoring will be performed along the downwind occupied perimeter of parcels during subgrade excavation, grading, and handling activities in accordance with the Community Air Monitoring Plan further detailed in Section 4.2.

Dust suppression techniques will be employed at the site in accordance with NYSDEC TAGM 4031 (Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites). This TAGM describes guidance for dust monitoring, and includes a list of effective dust suppression techniques. Dust monitoring is more fully described in Section A.12.2 (Community Air Monitoring Program). As per TAGM 4031, dust suppression techniques that may be used at the site include applying water on roadways, wetting equipment, spraying water on buckets during excavation and dumping, hauling materials in properly covered or watertight containers, covering excavated areas and material after excavation activity ceases, establishing vegetative cover immediately after placement of cover soil, and reducing the excavation size and/or number of excavations.

A.7 Construction Water Management

Pumping of water (i.e., groundwater and/or storm water that has accumulated in an excavation) from excavations, if necessary, will be done in such a manner as to prevent the migration of particulates, soil/fill, or unsolidified concrete materials, and to prevent damage to the existing subgrade. Water pumped from excavations will be managed properly in accordance with all applicable regulations so as to prevent endangerment of public health, property, or any portion of the construction.

The groundwater in excavations will be field screened for VOCs and observed for any noticeable sheens. Water in the excavations will not be discharged to the ground surface if:

- Staining or PID measurements above background are observed in the excavation, or
- A sheen is present on the water surface.

If any of these conditions exist, the water pumped from the excavations will be containerized and analyzed in accordance with the Surface Water and Groundwater quality Standards set forth in 6 NYCRR Part 703.5 and the local sewer authority discharge permit. If the water meets the surface water and groundwater quality standards, it may be discharged to the ground surface. If the water does not meet the surface water and groundwater quality standards, it may

be discharged to the local sewer authority under a discharge permit. If the water quality is such that the local sewer authority discharge permit requirements will be exceeded, or the local sewer authority will not approve the discharge to a sewer, it will be transported off-site for proper disposal or treated on-site via a treatment system that has been approved by NYSDEC.

Runoff from surface discharges shall be controlled. No discharges shall enter a surface water body without proper permits.

A.8 Fencing And Access Control

Access to soil/fill on the site must be controlled until final cover is placed to prevent direct contact with subgrade materials. To better control site access, obvious access points will be gated. All gates and existing fencing will be posted with "No Trespassing" signs. The majority of the site will be covered with clean fill or vegetated via hydroseeding to limit dust generation.

A.9 Property Use Limitations

The use of the property will be restricted through verbiage in the Brownfield Cleanup Agreement, to which this Remedial Action Work Plan will be attached.

A.10 Notification and Reporting Requirements

The following minimum notification and reporting requirements shall be followed by the property owner prior to and following site development, as appropriate:

- The NYSDEC and NYSDOH will be notified that subgrade activities are being initiated a minimum of five working days in advance of construction.
- A construction certification report stamped by a New York State licensed Professional Engineer, will be prepared and submitted to the NYSDEC and NYSDOH within 90 days after development of each parcel or subparcel. At a minimum, the report will include:

- An area map showing the parcel or subparcel that was developed and the property's tax map number.
- A topographic map of the developed property showing actual building locations and dimensions, roads, parking areas, utility locations, berms, fences, property lines, sidewalks, green areas, contours and other pertinent improvements and features. The topographic map will be stamped by a New York State licensed surveyor.
- Plans showing areas and depth of fill removal.
- Description of erosion control measures.
- A text narrative describing the excavation activities performed, health and safety monitoring performed (both site specified and Community Air Monitoring), quantities and locations of soil/fill excavated, disposal locations for the soil/fill, soil sampling locations and results, a description of any problems encountered, location and acceptability test results for backfill sources, and other pertinent information necessary to document that the site activities were carried out properly.
- Plans showing before and after survey elevations on a 100-foot grid system to document the thickness of the clean soil cover system.
- A certification that all work was performed in conformance with the SFMP.

A.11 Quality Assurance and Quality Control (QA/QC)

A.11.1 Analytical Methods

All site soil/fill characterization samples collected during site redevelopment activities will be analyzed using EPA-approved analytical methods using the most recent edition of the EPA's "Test Methods for Evaluating Solid Waste" (SW-846). Methods for Chemical Analysis of Water and Wastes "(EPA 600/4-79-020), Standard Methods for Examination of Waste and Wastewater" (prepared and published jointly by the American Public Health Association, American Waterworks Association and Water Pollution Control Federation).

A.11.2 Laboratory

The laboratory proposed to perform the analyses will be certified through the New York State Department of Health Environmental Laboratory Approval Program (ELAP) to perform Contract Laboratory Program (CLP) analysis and Solid Waste and Hazardous Waste Analytical testing on all media to be sampled during this investigation. The laboratory will maintain this certification for the duration of the project.

A.11.3 Data Submittal

The laboratory will perform the analysis of samples in accordance with the most recent (year 2000) NYSDEC Analytical Services Protocol (ASP). Analytical data will be submitted in complete ASP Category B data packs including documentation of laboratory QA/QC procedures that will provide legally defensible data in a court of law. If requested, the Category B data packs will be submitted to the NYSDEC.

Procedures for chain of custody, laboratory instrumentation calibration, laboratory analyses, reporting of data, internal quality control, and corrective actions shall be followed as per SW-846 and as per the laboratory's Quality Assurance Plan. Where appropriate, trip blanks, field blanks, field duplicates, and matrix spike, matrix spike duplicate shall be performed at a rate of 10% and will be used to assess the quality of the data. The laboratory's in-house QA/QC limits will be utilized whenever they are more stringent than those suggested by the EPA methods.

A.11.4 Data Usability Summary Reports

After receipt of analytical results, the data package will be sent to a qualified, third party, data validation specialist for evaluation. A Data Usability Summary Report (DUSR) will be prepared. The DUSR will provide a determination of whether or not the data meets the project specific criteria for data quality and data use.

A.12 Health and Safety Procedures for Intrusive or Maintenance Activities

A.12.1 Construction Personnel Protection

Contractors engaged in subsurface (invasive) construction or maintenance activities (e.g., foundation and utility workers) will be required to implement appropriate health and safety procedures. These procedures will involve, at a minimum, donning adequate personal protective equipment, performing appropriate air monitoring, and implementing other engineering controls as necessary to mitigate potential ingestion, inhalation and contact with residual constituents in the soils. A site-specific, activity-specific health and safety plan must be prepared by the contractor prior to on-site construction activities. Recommended health and safety procedures include the following:

- While conducting invasive work at the site, the Contractor shall provide working conditions on each operation that shall be as safe and healthful as the nature of that operation permits. The Contractor shall comply with all New York State Department of Labor regulations and published recommendations and regulations promulgated under the Federal Occupational Safety and Health Act of 1970 and the Construction Safety Act of 1969, as amended, and with laws, rules, and regulations of other authorities having jurisdiction. Compliance with governmental requirements is mandated by law and considered only a minimum level of safety performance. The Contractor shall insure that all work is performed in accordance with recognized safe work practices.

- The Contractor shall be responsible for the safety of the Contractor's employees, the public and all other persons at or about the site of the work. The Contractor shall be solely responsible for the adequacy and safety of all construction methods, materials, equipment and the safe prosecution of the work.

- The Contractor shall have a written health and safety plan (HASP) prepared, signed and sealed by a safety professional; a safety professional and/or a trained safety representative(s) active on the job whenever the work is in progress; an effective and documented safety training program; and a safety work method check list system.

- The Contractor shall stop work whenever a work procedure or a condition at a work site is deemed unsafe by the safety professional or his trained safety representative(s).

- The Contractor shall employ a properly qualified safety professional whose duties shall be to initiate, review and implement measures for the protection of health and prevention of accidents. The Contractor shall also employ safety representative(s) whose duties, working under the direct supervision of the safety professional, shall include the implementation the safety program for the work at the site.

- Recognition as a safety professional shall be based on a minimum of certification by the Board of Certified Safety Professionals as a Certified Safety Professional and 5 years of professional safety management experience in the types of construction and conditions expected to be encountered on the site.

- The safety representative(s) who will work under the direction of the safety professional will have appropriate qualifications. The required qualifications shall include a minimum of: five years of relevant construction experience, two years of which were exclusively in construction safety management; successful completion of a 30-hour OSHA Construction Safety and Health training course; 40-hour training as per 29 CFR 1926.65, Hazardous Waste Operations and Emergency Response; and, if confined space entry is required, training as per 29 CFR 1910.146, Permit-Required Confined Spaces.

- The safety professional shall visit and audit all work areas as often as necessary but at least once each week and shall be available for consultation whenever necessary.

- The safety representative(s) must be at the job site full-time (a minimum of 8 hours per working day) whenever intrusive work is in progress. When multiple shift work is in progress more than one safety representative may be required.

- The safety professional and his safety representative(s) shall be responsible for ensuring Contractor compliance with governing laws, rules and regulations as well as of good safety practice.

- The safety staff shall maintain and keep available safety records, up-to-date copies of all pertinent safety rules and regulations, Material Safety Data Sheets, and the Contractors' site specific health and safety plans (HASPs) and the site emergency response plan with emergency and telephone contacts for supportive actions.

- The responsible safety professional shall sign and seal the Contractor's written site-specific HASP and the Plan shall be available to workers on site. The Contractor shall provide copies of the HASP to the Contractors' insurer, if required.

- The HASP will identify and define the following: the hazards anticipated for each major invasive task; the engineering, administrative and/or personal protective equipment control measures that will be implemented; the surveillance methods, and schedules of both walk through surveys and in-depth safety audits to be performed on site; medical monitoring and screening methods; the Contractors' pre-start-up and continuous safety-training program; emergency response equipment, notification, training and procedures; and include copies of safety inspection check-off sheets, specific to the work methods and crews performing work at the various job locations, to be used on a regular basis in evaluating the site and work methods.

- The safety professional and/or his trained safety representative(s) shall as a minimum:

  - Schedule and conduct safety meetings and safety training programs as required by law, the health and safety plan, and good safety practice. A specific schedule of dates of these meetings and an outline of materials to be covered shall be provided with the health and safety plan. All employees shall be instructed on the recognition of hazards, observance of precautions, of the contents of the health and safety plan and the use of protective and emergency equipment.

  - Determine that operators of specific equipment are qualified by training and/or experience before they are allowed to operate such equipment.

  - Develop and implement emergency response procedures. Post the name, address and hours of the nearest medical doctor, name and address of nearby clinics and hospitals, and the telephone numbers of the appropriate ambulance service, fire, and the police department.

  - Post all appropriate notices regarding safety and health regulations at locations that afford maximum exposure to all personnel at the job site.

  - Post appropriate instructions and warning signs in regard to all hazardous areas or conditions that cannot be eliminated. Identification of these areas shall be based on

experience, on site surveillance, and severity of hazard. Such signs shall not be used in place of appropriate workplace controls.

- Ascertain by personal inspection that all safety rules and regulations are enforced. Make inspections at least once a shift to ensure that all machines, tools and equipment are in a safe operating condition; and that all work areas are free of hazards. Take necessary and timely corrective actions to eliminate all unsafe acts and/or conditions, and submit to the Engineer each day a copy of his findings on the inspection check list report forms established in the health and safety plan.

- Provide safety training and orientation to authorized visitors to ensure their safety while occupying the job site.

- Perform all related tasks necessary to achieve the highest degree of safety that the nature of the work permits.

- The Contractor shall have proper safety and rescue equipment, adequately maintained and readily available, for foreseeable contingencies. This equipment may include such applicable items as: proper fire extinguishers, first aid supplies, safety ropes and harnesses, stretchers, water safety devices, oxygen breathing apparatus, resuscitators, gas detectors, oxygen deficiency indicators, combustible gas detectors, etc. This equipment should be kept in protected areas and checked at scheduled intervals. A log shall be maintained indicating who checked the equipment, when it was checked, and that it was acceptable. This equipment log shall be updated monthly and be submitted with the monthly report. Equipment that requires calibration shall have copies of dated calibration certificates on site. Substitute safety and rescue equipment must be provided while primary equipment is being serviced or calibrated.

- All personnel employed by the Contractor or his subcontractors or any visitors whenever entering the job site, shall be required to wear appropriate personal protection equipment required for that area. The Contractor may remove from the site any person who fails to comply with this or any other safety requirement.

- Because water with elevated pH may act as a skin irritant, care must be taken to inhibit dermal contact when handling any groundwater at the site. Actions to inhibit

contact with groundwater may include the use of latex or other waterproof gloves by on-site workers.

A.12.2 Community Air Monitoring Program

Ambient air monitoring will be conducted by the Professional Engineer monitoring the work on a real-time basis during all subsurface construction activities using a minimum of a photoionization detector and a dust meter. Battery charge level for each instrument will be checked at the beginning and end of each day. The instruments will be calibrated at a frequency recommended by the manufacturer. All air monitoring readings will be recorded in a logbook and will be available for review by the NYSDEC and New York State Department of Health (NYSDOH).

Baseline conditions will be measured at proposed intrusive activity locations prior to commencement of operations. Air quality within the work zone will be monitored in accordance with the site-specific health and safety plan created by the site developer or contractor. In addition to monitoring the work area for worker health and safety, volatile organic compounds will be monitored at the downwind perimeter of the work area every hour. If downwind perimeter organic vapor levels exceed five parts per million (ppm) above the upwind work area perimeter concentrations, the Vapor Emission Response Plan will be implemented.

As described in Section A.6, appropriate dust suppression techniques will be employed at all times during site redevelopment activities. Using a dust meter, particulates will be continuously monitored immediately downwind in the work area and integrated over a period not to exceed 15 minutes. If the downwind particulate level is more than 150 ug/m^3, then upwind (background) levels must be measured immediately. If the downwind levels are more than 100 ug/m^3 above background, additional dust suppression measures must be taken.

A.12.1.1 Vapor Emission Response Plan

If the downwind area perimeter air concentrations of organic vapors exceed the upwind work area perimeter concentration by 5 ppm but less than 25 ppm, the following actions will be taken:

- Every 30 minutes monitor the perimeter work area location.
- Every 30 minutes monitor the organic vapor concentration 200 feet downwind of the work area perimeter or half the distance to the nearest receptor, whichever is less. If this reading exceeds the perimeter work area upwind organic vapor concentration by 5 ppm, all work must halt and monitoring increased to every 15 minutes. If, at any time, this reading exceeds the perimeter work area upwind concentration by 10 ppm, the Major Vapor Emissions Response Plan will be initiated.
- If organic vapor levels 200 feet downwind of the perimeter work area or half the distance to the nearest downwind receptor, whichever is less, exceeds by 5 ppm the work area perimeter upwind concentration persistently, then air quality monitoring must be performed within 20 feet of the nearest downwind receptor (20-foot zone). If the readings in the 20-foot zone exceed the perimeter work area upwind concentration by 5 ppm for more than 30 minutes, then the Major Vapor Emissions Response Plan will be implemented.
- Work activities can resume only after the downwind 200-foot reading and the 20-foot zone reading are less than 5 ppm above the perimeter work area upwind concentration. In addition, the downwind perimeter work area concentration must be less than 25 ppm above the perimeter work area upwind concentration.

A.12.2.2 Major Vapor Emission Response Plan

If the downwind work area perimeter organic vapor concentration exceeds the upwind work area perimeter concentration by more than 25 ppm, then the Major Vapor Emission Response Plan will be activated. Upon activation, the following activities will be undertaken:

1. All work will halt.
2. All Emergency Response Contacts as listed in the Health and Safety Plan will be contacted.

3. The NYSDEC, NYSDOH, and the Steuben County Health Department will be notified and advised of the situation.

4. The local police and fire department authorities will immediately be contacted by the Safety Officer and advised of the situation.

5. Frequent air monitoring will be conducted at 30-minute intervals within the 20-Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer and work may resume

MALCOLM PIRNIE

Operation, Monitoring and Maintenance Work Plan

APPENDIX

B

MALCOLM PIRNIE

OPERATION, MONITORING AND MAINTENANCE WORK PLAN FOR THE FORMER INGERSOLL-RAND FOUNDRY SITE

VILLAGE OF PAINTED POST
STEUBEN COUNTY, NEW YORK

AUGUST 2005

MALCOLM PIRNIE, INC.

40 Centre Drive
Orchard Park, NY 14127

MALCOLM PIRNIE

1.0 INTRODUCTION

This Operation, Monitoring and Maintenance (OM&M) Work Plan has been prepared for the former Ingersoll-Rand Foundry Site in Painted Post, New York (the Site). The Site is the subject of a Voluntary Cleanup Agreement in accordance with New York State Department of Environmental Conservation (NYSDEC) Brownfields Cleanup Program guidance. The Agreement requires that the Site owner maintain the institutional and physical components that shall comprise the completed voluntary cleanup. This OM&M Work Plan describes the conditions and procedures for maintaining the physical components of the completed Site voluntary cleanup, and as an appendix to the Remedial Work Plan (RWP), it shall be an enforceable part of the Agreement.

The owner (Owner) of the Site (or any portion thereof) should evaluate the criteria presented in this plan and should recommend changes to the NYSDEC, as appropriate, depending on actual post-closure site conditions. As a minimum, this plan should be reviewed annually during the post-closure period and updated when necessary.

Prior to initiation of the OM&M Work Plan, the Owner shall prepare and submit appropriate organizational documents to the NYSDEC for review and approval. The organizational documents shall include:

- An organizational chart outlining the responsible party's personnel (with qualifications) who will be responsible for implementing the post-closure operation, maintenance and monitoring program.
- A health and safety plan.
- Example inspection report forms.
- A schedule for the annual inspections and reporting.

2.0 BACKGROUND

The Site is a former foundry plant facility situated on approximately 57-acres of land at the northwest end of West Water Street in the northwestern portion of the Village of Painted Post, Steuben County, New York. The Site is approximately 1,200 feet east of the south-flowing Cohocton River. The Site is surrounded by an open field to the west, a parking lot to the south and residential housing to the east and north. Two rail spurs once serviced the Site. The facility began operations in 1848 as a machine shop and foundry owned by the Weston Engine Company. In 1898, the Imperial Engine Company, a subsidiary of the Rand Drill Company, purchased the facility. In 1905 Rand merged with the Ingersoll-Sergeant Drill Company to become Ingersoll-Rand (IR). The facility remained under IR's ownership until December 31, 1986 when Dresser Industries merged with IR to become the Dresser-Rand Company (Capsule, 1988).

During its active use, the foundry contained 287,000 square feet of industrial buildings, most of which were located along the northeastern side of the Site. The foundry produced gray iron castings used in assembling air compressors. In 1972, the foundry began producing gray iron in continuous pour from electric-melt furnaces. At that time operations included pattern construction, sand mold lines, casting, shakeout, casting cleaning, and pattern and casting storage (Capsule, 1988). IR ceased production operations at the Painted Post foundry site on January 1, 1986.

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3.0 REMEDIAL WORK PLAN

The Remedial Work Plan (RWP) for the site was prepared in October 2004 to be implemented during the voluntary cleanup of the Former Ingersoll-Rand Site.

According to the RWP, in order to eliminate potential exposure risks associated with direct contact with site fill material, the entire site will be covered as part of site redevelopment. The cover system will be placed directly on top of the re-graded on-site fill material and will include clean soil for outdoor, vegetated areas, asphalt for roads and parking lots, or concrete for sidewalks, buildings and heavy use areas. Surface coverage over the entire redeveloped parcel or subparcel will be required by the site owner or developer as a pre-condition of occupancy.

The proposed cover system has been designed to be protective of human health and the environment. The primary exposure pathway for contaminants at the site (metals and polycyclic aromatic hydrocarbons) in soil is via direct contact. The proposed plan of covering the on-site fill material will eliminate the potential for direct contact with soil and is therefore protective of human health.

The Qualitative Risk Assessment performed as part of the Supplemental Investigation (Malcolm Pirnie, 2004) evaluated the risk posed by chemicals of potential concern ("COPCs") to human health and wildlife. The Risk Assessment also evaluated the adequacy of the cover system planned for placement during site redevelopment and determined that the above-described cover system would protect human health and wildlife from these COPCs.

4.0 SUMMARY OF THE REMEDIAL CLOSURE DESIGN

4.1 PREPARATION OF SITE SURFACE

The Site will require grading prior to cover placement activities, in accordance with the Remedial Work Plan (RWP) and appended Soil/Fill Management Plan (SFMP). Any fill material will be graded to a regular topographic surface as planned for redevelopment. All trees, shrubs, roots, brush, masonry, rubbish, scrap, debris, pavement, curbs, fences and miscellaneous structures will either be removed and disposed of off-site at a permitted disposal facility. Prior to placement of the cover system, all protruding material will be removed from the ground surface. Burning shall not be allowed on the Site.

4.2 COVER SYSTEM

4.2.1 Soil

In areas that will not receive significant equipment or vehicular use, the cover system will be composed of soil fill from a NYSDEC-approved borrow source and tested in accordance with the Soil/Fill Management Plan and found to contain constituent concentrations less than those specified in NYSDEC TAGM 4046. The soil cover will be placed in accordance with the RWP.

It will be the responsibility of the Owner to annually verify that the soil cover has remained in good condition (e.g., grass or other vegetation is maintained) and sufficiently covers the soil/fill material at the Site (i.e., eroded areas are repaired and the soil cover is maintained). Certification as to this verification is included on the site inspection form on Attachment A.

4.2.2 Asphalt

The cover system in areas that will become roads, sidewalks, and parking lots will consist of a minimum of two inches of asphalt that will be placed over the soil/fill material at the site. The

asphalt will be placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence, in accordance with the RWP. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area re-graded to a regular surface.

It will be the responsibility of the Owner to annually verify that the asphalt has remained in good condition and sufficiently covers the soil/fill material.

4.2.3 Concrete

The cover system in areas that will become structures will consist of a minimum of two inches of concrete that will be placed above the soil/fill material. The concrete will be placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence. Concrete may also be used instead of asphalt for roads, sidewalks, and parking lots. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area re-graded to a sufficient regular surface.

It will be the responsibility of the Owner to annually verify that the concrete has remained in good condition and sufficiently covers the soil/fill material at the Site as per Attachment A.

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4.3 EROSION CONTROL MEASURES

In accordance with the SFMP, design and permanent construction features shall be incorporated into the site construction plans to control erosion. It will be the responsibility of the Owner to annually certify that storm water channel slopes, vegetation and any synthetic erosion control fabrics placed in such channels remain in good condition.

4.4 FENCING AND ACCESS CONTROL

In accordance with the RWP and the SFMP, fencing shall be constructed and signs posted around all areas with exposed soil/fill or areas where excavation will occur. If the entire Site is completely hydroseeded or completely graded and covered at the same time, fencing the entire Site will not be necessary, but gates shall be installed across obvious access points to limit the potential for illegal dumping. It will be the responsibility of the Owner to annually certify that fences, gates and signs are in place and that access is restricted, to the best of the Owner's ability.

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5.0 INSPECTION PROCEDURES

The physical components of the cover system shall be inspected annually by a representative of Owner (or its delegated agent) qualified to carry out such inspections. The inspector should be, at minimum, a certified industrial hygienist or a person with a four-year college degree in environmental sciences. The inspection will be coordinated with facility personnel at least one week prior to ensure that most, if not all, of the paved areas will be accessible for inspection. Indoors, in office spaces with floor coverings, the inspection should at minimum make note of areas with settled or uneven surfaces, seepage or flooding. Arrangements to repair those areas that the inspector requires to be maintained, if any, will be initiated as may be required by the inspector.

The annual inspection shall include, but not be limited to, those matters set forth on the Environmental Inspection Form, attached hereto as Exhibit A. These inspection reports, which shall include a map that shows areas of damage or required maintenance, shall be kept on file by the Owner. If the inspections reveal that maintenance is necessary, then the Owner shall notify the NYSDEC, and arrange to complete the repairs. The NYSDEC shall be informed by Owner when repairs are complete.

6.0 FINAL COVER SYSTEM CONDITION

The final cover system shall be observed by traversing the cover on foot and making appropriate observations, notes and photographic records as necessary, for inclusion with the report. It is anticipated that some maintenance activities will be necessary during the closure period. The following characteristics shall be looked for during the observation of the cover system, fencing and signs, and erosion control features:

- Sloughing.
- Cracks.
- Settlement (depression and puddles).
- Erosion features.
- Distressed vegetation/turf.
- Damaged fencing, gates and signs.

The following paragraphs describe actions that should be taken to address the conditions described above. Maintenance and repairs that are typically necessary during the closure period are also described.

6.1 SLOUGHING

Sloughing of the soil cover may occur. Areas where sloughing has occurred shall be repaired. Cover soil shall be placed in accordance with the requirements of the Remedial Work Plan (RWP), and of the Soil/Fill Management Plan (SFMP).

6.2 CRACKS

The locations of any cracks in the soil, asphalt or concrete cover should be noted on the inspection log and site map, including width, length and depth of the crack. The appropriate maintenance

procedure will be determined by the inspector. Small willow cracks in the soil cover can be repaired by minor re-grading of the cracked area and re-seeding the area. Larger cracks that appear to extend into the fill material shall be filled with soil similar to that used for construction of the cover soil layer prior to re-seeding, in accordance with the RWP. Repairs to the asphalt and/or concrete will be completed when and in the fashion deemed necessary by the inspector.

6.3 SETTLEMENT

Settlement features such as depressions or areas of ponding water shall be re-graded by placing additional soil cover so that surface water drains in the appropriate direction.

6.4 EROSION FEATURES

Erosion features shall be repaired by backfilling to the original grade with soil and re-seeding. Torn or displaced synthetic erosion control fabric in storm water channels shall be repaired or replaced as directed by the inspector.

6.5 DISTRESSED VEGETATION/TURF

Areas of distressed turf shall be re-seeded and a starter fertilizer applied. Large-root growth may also compromise the integrity of the soil cover and shall be discouraged with regular mowing. Reasonable efforts shall be taken to avoid damage to the turf from traffic and other unintended uses.

6.6 FENCING AND ACCESS CONTROL

To the best of owner's ability, physical discontinuities in fence material shall be repaired; fence posts and foundations that show evidence of structural weakness shall be repaired or replaced as necessary; gates and locks shall be maintained to deter unauthorized entry; and warning signs shall be kept secured in place and trees shall be trimmed to ensure the signs are visible.

7.0 INSPECTION REPORTING

Annual inspection reports shall be forwarded by the Owner to the NYSDEC. If the inspection finds that corrective action is required, a followup inspection will be made after the repairs have been completed. If the inspector determines that corrective action is required, the Corrective Action Form will be included with the inspection report, confirming that the repairs were completed, and in accordance with the Remedial Work Plan.

Any analytical data that may be gathered during the course of the inspection or corrective action shall also be included with the inspection report and submitted to the NYSDEC within 21 days of the inspection. The inspection reports will be submitted by the Site Owner with an attached Annual Certification form, signed and notarized by the Site Owner, certifying that the specified engineering and institutional controls are in place and functioning.

ATTACHMENT A

ENVIRONMENTAL INSPECTION FORM

Painted Post, NY – Former Ingersoll-Rand Foundry Site

Property Name: _____ Inspection Date: _____

Property Address: _____

City: _____ State: _____ Zip Code: _____

Property ID: (Tax Assessment Map)

Section:_____ Block:_____ Lot(s):_____

Total Acreage: _____

Weather (during inspection): Temperature: _____ Conditions:

SIGNATURE:

The findings of this inspection were discussed with appropriate personnel, corrective actions were identified and implementation was mutually agreed upon:

Inspector: _____ Date: _____

Next Scheduled Inspection Date: _____

SECURITY AND ACCESS

	Yes	No
1. Access controlled by perimeter fencing?	_____	_____
Are there sections of the fence material damaged or missing?	_____	_____
Are the fence or gate post foundations structurally sound?	_____	_____
2. "No Trespass" signs posted in appropriate languages?	_____	_____
Are the signs securely attached to the fencing or posts?	_____	_____
Are there sufficient signs; are the signs adequately spaced around the perimeter of the property?	_____	_____
3. Is there evidence of trespassing?	_____	_____
Is there evidence of illegal dumping?	_____	_____

COVER & VEGETATION

4. Final cover in acceptable condition?	_____	_____
Is there evidence of sloughing, erosion, ponding or settlement?	_____	_____
Is there evidence of unintended traffic; rutting?	_____	_____
Is there evidence of distressed vegetation/turf?	_____	_____

	Yes	No
5. Final cover sufficiently covers soil/fill material?	_____	_____
Are there cracks visible in the soil or pavement?	_____	_____
Is there evidence of erosion in the stormwater channels or swales?	_____	_____
Is there damage to the synthetic erosion control fabric in the channels or swales?	_____	_____

ACTIVITY ON SITE

6. Any activity on site that mechanically disturbed soil cover?	_____	_____

ADDITIONAL FACILITY INFORMATION

Development on or near the site? (Specify size and type: e.g., residential, 40 acres, well and septic)

COMMENTS

Item #

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

ATTACHMENTS

1. Site Sketch
2. Photographs
3. Laboratory Report (s)

Annual Certification of Institutional/Engineering Controls

Painted Post, NY – Former Ingersoll-Rand Foundry Site

Property Name:
Property Address:

County: Erie
City/Town: Buffalo
Property ID: (Tax Assessment Map)
Section:_____ Block:_____ Lot(s):_____

I (name), residing at (address), as owner of the property(ies) listed above which are located wholly or partially within the boundaries of the Voluntary Cleanup Site named above; do certify that the engineering and/or institutional controls, as specified in the Declaration of Covenants and Restrictions for the Voluntary Cleanup Site are in-place and functioning as designed within the property(ies) listed above.

Signature:_____

(This area for notary public)

CORRECTIVE ACTION FORM

Painted Post, NY – Former Ingersoll-Rand Foundry Site

Property Name: _____

Property Address:

City: _____ State: _____ Zip Code: _____

Property ID: (Tax Assessment Map)

Section:_____ Block:_____ Lot(s):_____

Total Acreage: _____

Weather (during inspection): Temperature: _____ Conditions:

An inspection of the subject property on (date) identified the need for corrective action.

CORRECTIVE ACTION TAKEN

Description: (attach site sketch and photographs)

Date Completed:

SIGNATURE:

The corrective action described above was completed in accordance with all relevant requirements of the Remedial Action Work Plan.

Inspector: _____ Date: _____

ATTACHMENTS

1. Site Sketch
2. Photographs
3. Laboratory Report (s)

APPENDIX B

Soil Boring Logs

Moody and Associates, Inc.
685 Broad Street Ext., Suite 1
Waverly, New York 14892
Phone: 607.565.8800
Fax: 607.565.8805

TB1
WELL TYPE: Test Bore
TOTAL DEPTH: 12'
SITE LOCATION: Town of Erwin

PROJECT INFORMATION

PROJECT: Monroe Tractor Phase II ESA
JOB NUMBER: 15-107-TE
LOGGED BY: Matthew Caldwell
PROJECT MANAGER: Tim Eriksen

DRILLING INFORMATION

DRILLING COMPANY: NYEG Drilling, LLC.
DRILLER: Jay Maitland & Tom Carnes
METHOD OF DRILLING: Truck mounted geoprobe
DATES DRILLED: 3/26/2015

DEPTH	LITHOLOGY	LITHOLOGIC DESCRIPTION	BORING COMPLETION	DESCRIPTION
0		Black sand - some brown sand - sample collected at 4'		
5		Gray brown sand - clayey - some iron banding		Open hole
10		Light brown sand - clayey		

NOTES: No detections with PID

Moody and Associates, Inc.
685 Broad Street Ext., Suite 1
Waverly, New York 14892
Phone: 607.565.8800
Fax: 607.565.8805

TB2
WELL TYPE: Test Bore
TOTAL DEPTH: 12'
SITE LOCATION: Town of Erwin

PROJECT INFORMATION

PROJECT: Monroe Tractor Phase II ESA
JOB NUMBER: 15-107-TE
LOGGED BY: Matthew Caldwell
PROJECT MANAGER: Tim Eriksen

DRILLING INFORMATION

DRILLING COMPANY: NYEG Drilling, LLC.
DRILLER: Jay Maitland & Tom Carnes
METHOD OF DRILLING: Truck mounted geoprobe
DATES DRILLED: 3/26/2015

DEPTH	LITHOLOGY	LITHOLOGIC DESCRIPTION	BORING COMPLETION	DESCRIPTION
0		Dark organic soil		
		Light brown sand - fine grained - rounded/subrounded gravel - sample collected at 6'		
5				Open hole
10		Light brown sand - fine grained - angular gravel		

NOTES: No detections with PID

Moody and Associates, Inc.
685 Broad Street Ext., Suite 1
Waverly, New York 14892
Phone: 607.565.8800
Fax: 607.565.8805

TB3
WELL TYPE: Test Bore
TOTAL DEPTH: 12'
SITE LOCATION: Town of Erwin

PROJECT INFORMATION

PROJECT: Monroe Tractor Phase II ESA
JOB NUMBER: 15-107-TE
LOGGED BY: Matthew Caldwell
PROJECT MANAGER: Tim Eriksen

DRILLING INFORMATION

DRILLING COMPANY: NYEG Drilling, LLC.
DRILLER: Jay Maitland & Tom Carnes
METHOD OF DRILLING: Truck mounted geoprobe
DATES DRILLED: 3/26/2015

DEPTH	LITHOLOGY	LITHOLOGIC DESCRIPTION	BORING COMPLETION	DESCRIPTION
0		Dark organic soil - roots		
		Light brown sand - fine grained - angular/subangular gravel - max PID reading: 0.7 ppm - sample collected at 9'		
5				
				Open hole
10				

NOTES:

Moody and Associates, Inc.
685 Broad Street Ext., Suite 1
Waverly, New York 14892
Phone: 607.565.8800
Fax: 607.565.8805

TB4
WELL TYPE: Test Bore
TOTAL DEPTH: 4.5'
SITE LOCATION: Town of Erwin

PROJECT INFORMATION

PROJECT: Monroe Tractor Phase II ESA
JOB NUMBER: 15-107-TE
LOGGED BY: Matthew Caldwell
PROJECT MANAGER: Tim Eriksen

DRILLING INFORMATION

DRILLING COMPANY: NYEG Drilling, LLC.
DRILLER: Jay Maitland & Tom Carnes
METHOD OF DRILLING: Truck mounted geoprobe
DATES DRILLED: 3/26/2015

DEPTH	LITHOLOGY	LITHOLOGIC DESCRIPTION	BORING COMPLETION	DESCRIPTION
0		Black organic soil - fine grained		
		Light gray clay - at 2' PID reading: 4.6ppm		
		Black organic soil - fine grained		Open hole
		Light brown sand - refusal at 4.5' - sample collected at 4.5'		

NOTES:

Moody and Associates, Inc.
685 Broad Street Ext., Suite 1
Waverly, New York 14892
Phone: 607.565.8800
Fax: 607.565.8805

TB6
WELL TYPE: Test Bore
TOTAL DEPTH: 12'
SITE LOCATION: Town of Erwin

PROJECT INFORMATION

PROJECT: Monroe Tractor Phase II ESA
JOB NUMBER: 15-107-TE
LOGGED BY: Matthew Caldwell
PROJECT MANAGER: Tim Eriksen

DRILLING INFORMATION

DRILLING COMPANY: NYEG Drilling, LLC.
DRILLER: Jay Maitland & Tom Carnes
METHOD OF DRILLING: Truck mounted geoprobe
DATES DRILLED: 3/26/2015

DEPTH	LITHOLOGY	LITHOLOGIC DESCRIPTION	BORING COMPLETION	DESCRIPTION
0		Black and brown sand		
		Gray green cement - some cinder		
5		Black sand - some brown sand bands. - sample collected at 7'		Open hole
		Gray clay		
10				

NOTES: No detections with PID

Moody and Associates, Inc.
685 Broad Street Ext., Suite 1
Waverly, New York 14892
Phone: 607.565.8800
Fax: 607.565.8805

TB7
WELL TYPE: Test Bore
TOTAL DEPTH: 12'
SITE LOCATION: Town of Erwin

PROJECT INFORMATION

PROJECT: Monroe Tractor Phase II ESA
JOB NUMBER: 15-107-TE
LOGGED BY: Matthew Caldwell
PROJECT MANAGER: Tim Eriksen

DRILLING INFORMATION

DRILLING COMPANY: NYEG Drilling, LLC.
DRILLER: Jay Maitland & Tom Carnes
METHOD OF DRILLING: Truck mounted geoprobe
DATES DRILLED: 3/26/2015

DEPTH	LITHOLOGY	LITHOLOGIC DESCRIPTION	BORING COMPLETION	DESCRIPTION
0		Black, red, and brown sand - sample collected at 4.5'		
5		Black sand		Open hole
10				

NOTES: No detections with PID

Moody and Associates, Inc.
685 Broad Street Ext., Suite 1
Waverly, New York 14892
Phone: 607.565.8800
Fax: 607.565.8805

TB8
WELL TYPE: Test Bore
TOTAL DEPTH: 12'
SITE LOCATION: Town of Erwin

PROJECT INFORMATION

PROJECT: Monroe Tractor Phase II ESA
JOB NUMBER: 15-107-TE
LOGGED BY: Matthew Caldwell
PROJECT MANAGER: Tim Eriksen

DRILLING INFORMATION

DRILLING COMPANY: NYEG Drilling, LLC.
DRILLER: Jay Maitland & Tom Carnes
METHOD OF DRILLING: Truck mounted geoprobe
DATES DRILLED: 3/26/2015

DEPTH	LITHOLOGY	LITHOLOGIC DESCRIPTION	BORING COMPLETION	DESCRIPTION
0		Black sand - some light brown sand bands		
5		Black sand - very fine		Open hole
		Black sand - some light brown sand bands - max PID reading: 0.2 ppm - sample collected at 7-8'		
10				

NOTES:

Moody and Associates, Inc.
685 Broad Street Ext., Suite 1
Waverly, New York 14892
Phone: 607.565.8800
Fax: 607.565.8805

TB9
WELL TYPE: Test Bore
TOTAL DEPTH: 12'
SITE LOCATION: Town of Erwin

PROJECT INFORMATION

PROJECT: Monroe Tractor Phase II ESA
JOB NUMBER: 15-107-TE
LOGGED BY: Matthew Caldwell
PROJECT MANAGER: Tim Eriksen

DRILLING INFORMATION

DRILLING COMPANY: NYEG Drilling, LLC.
DRILLER: Jay Maitland & Tom Carnes
METHOD OF DRILLING: Truck mounted geoprobe
DATES DRILLED: 3/26/2015

DEPTH	LITHOLOGY	LITHOLOGIC DESCRIPTION	BORING COMPLETION	DESCRIPTION
0		Gray soil - clayey		
		Brownish black sand		
		Brown sand		
5		Black sand - some light brown sand bands - max PID reading: 0.6 ppm - sample collected at 8' (black sand)		Open hole
10				

NOTES:

Moody and Associates, Inc.
685 Broad Street Ext., Suite 1
Waverly, New York 14892
Phone: 607.565.8800
Fax: 607.565.8805

TB10
WELL TYPE: Test Bore
TOTAL DEPTH: 8'
SITE LOCATION: Town of Erwin

PROJECT INFORMATION

PROJECT: Monroe Tractor Phase II ESA
JOB NUMBER: 15-107-TE
LOGGED BY: Matthew Caldwell
PROJECT MANAGER: Tim Eriksen

DRILLING INFORMATION

DRILLING COMPANY: NYEG Drilling, LLC.
DRILLER: Jay Maitland & Tom Carnes
METHOD OF DRILLING: Truck mounted geoprobe
DATES DRILLED: 3/26/2015

DEPTH	LITHOLOGY	LITHOLOGIC DESCRIPTION	BORING COMPLETION	DESCRIPTION
0		Black and brown sand - white sand bands around 7' - sample collected at 7' - refusal at 8'		Open hole
5				

NOTES: No detections with PID

Moody and Associates, Inc.
685 Broad Street Ext., Suite 1
Waverly, New York 14892
Phone: 607.565.8800
Fax: 607.565.8805

TB11
WELL TYPE: Test Bore
TOTAL DEPTH: 12'
SITE LOCATION: Town of Erwin

PROJECT INFORMATION

PROJECT: Monroe Tractor Phase II ESA
JOB NUMBER: 15-107-TE
LOGGED BY: Matthew Caldwell
PROJECT MANAGER: Tim Eriksen

DRILLING INFORMATION

DRILLING COMPANY: NYEG Drilling, LLC.
DRILLER: Jay Maitland & Tom Carnes
METHOD OF DRILLING: Truck mounted geoprobe
DATES DRILLED: 3/26/2015

DEPTH	LITHOLOGY	LITHOLOGIC DESCRIPTION	BORING COMPLETION	DESCRIPTION
0		Black and brown sand - max PID reading: 0.3 ppm - sample collected at 5'		
5		Light brown/tan sand		
		Black sand		Open hole
10		Gray clay		

NOTES:

APPENDIX C

Laboratory Analytical Report Forms

MICROBAC®

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5C1945

Revised Report: Amended to add requested analysis.

Moody & Associates, Inc-Waverly

Tim Eriksen
685 Broad Street Extension/ Suite 1
Waverly, NY 14892

Project / PO Number: 15-107-TE
Received: 03/26/2015 15:25
Reported: 10/12/2015 12:09

Analytical Testing Parameters

Client Sample ID: TB-1
Lab Sample ID: S5C1945-01
Sample Type: Grab

Collected By: MPC
Collection Date: 03/26/15
Collection Time: 11:50

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

PCB SOLID	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8082								
Aroclor-1016	<8.81	8.81	17.6	ug/kg DRY	**Ua, H1**	04/28/15 0938	04/29/15 1132	
Aroclor-1221	<8.81	8.81	17.6	ug/kg DRY	**Ua, H1**	04/28/15 0938	04/29/15 1132	
Aroclor-1232	<8.81	8.81	17.6	ug/kg DRY	**Ua, H1**	04/28/15 0938	04/29/15 1132	
Aroclor-1242	<8.81	8.81	17.6	ug/kg DRY	**Ua, H1**	04/28/15 0938	04/29/15 1132	
Aroclor-1248	<8.81	8.81	17.6	ug/kg DRY	**Ua, H1**	04/28/15 0938	04/29/15 1132	
Aroclor-1254	<8.81	8.81	17.6	ug/kg DRY	**Ua, H1**	04/28/15 0938	04/29/15 1132	
Aroclor-1260	<8.81	8.81	17.6	ug/kg DRY	**Ua, H1**	04/28/15 0938	04/29/15 1132	
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene	74.6		Limit: 29-133	% Rec		04/28/15 0938	04/29/15 1132	
Surrogate: Decachlorobiphenyl	81.7		Limit: 60-125	% Rec		04/28/15 0938	04/29/15 1132	

Percent Solids	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216								
Percent Solids	96.2	1.00	1.00	% by Weight			04/03/15 0914	

Mercury	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW7471B								
Mercury, Total	<0.00976	0.00976	0.244	mg/kg dry		04/02/15 0657	04/06/15 1017	

Metals by 6010	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C								
Barium, Total	8.92	0.185	0.369	mg/kg dry		04/02/15 1359	04/03/15 1323	
Cadmium, Total	<0.185	0.185	0.369	mg/kg dry		04/02/15 1359	04/03/15 1323	
Chromium, Total	4.24	0.0923	0.185	mg/kg dry		04/02/15 1359	04/03/15 1323	
Lead, Total	<1.85	1.85	3.69	mg/kg dry		04/02/15 1359	04/03/15 1323	
Silver, Total	<0.738	0.738	1.48	mg/kg dry		04/02/15 1359	04/03/15 1323	

Metals by 6020	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6020								
Arsenic, Total	0.832	0.152	0.304	mg/kg dry		04/03/15 0853	04/05/15 2244	
Selenium, Total	0.109	0.101	0.203	mg/kg dry	**J**	04/03/15 0853	04/05/15 2244	

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8270D								
Acenaphthene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Acenaphthylene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Anthracene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	

Analytical Testing Parameters

Client Sample ID:	**TB-1**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-01**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	11:50

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Benzo(a)anthracene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Benzo(a)pyrene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Benzo(b)fluoranthene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Benzo(g,h,i)Perylene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Benzo(k)fluoranthene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Chrysene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Dibenz(a,h)anthracene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Fluoranthene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Fluorene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Indeno(1,2,3-cd)pyrene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Naphthalene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Phenanthrene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Pyrene	<92.5	92.5	185	ug/kg dry		04/02/15 0842	04/03/15 2037	
Surrogate: 2,4,6-Tribromophenol	100		Limit: 19-122	% Rec		04/02/15 0842	04/03/15 2037	
Surrogate: 2-Fluorobiphenyl	87.6		Limit: 30-115	% Rec		04/02/15 0842	04/03/15 2037	
Surrogate: 2-Fluorophenol	75.4		Limit: 25-121	% Rec		04/02/15 0842	04/03/15 2037	
Surrogate: Nitrobenzene-d5	76.8		Limit: 23-120	% Rec		04/02/15 0842	04/03/15 2037	
Surrogate: p-Terphenyl-d14	105		Limit: 18-137	% Rec		04/02/15 0842	04/03/15 2037	
Surrogate: Phenol-d5	71.0		Limit: 24-113	% Rec		04/02/15 0842	04/03/15 2037	

Analytical Testing Parameters

Client Sample ID:	**TB-2**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-02**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	09:12

Analytical Testing Parameters

Client Sample ID:	TB-2	**Collected By:**	MPC
Lab Sample ID:	S5C1945-02	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	09:12

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

PCB SOLID	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8082								
Aroclor-1016	<9.70	9.70	19.4	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1519	
Aroclor-1221	<9.70	9.70	19.4	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1519	
Aroclor-1232	<9.70	9.70	19.4	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1519	
Aroclor-1242	<9.70	9.70	19.4	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1519	
Aroclor-1248	<9.70	9.70	19.4	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1519	
Aroclor-1254	<9.70	9.70	19.4	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1519	
Aroclor-1260	<9.70	9.70	19.4	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1519	
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene	70.0		Limit: 29-133	% Rec		05/01/15 1142	05/04/15 1519	
Surrogate: Decachlorobiphenyl	76.7		Limit: 60-125	% Rec		05/01/15 1142	05/04/15 1519	

Percent Solids	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216								
Percent Solids	88.6	1.00	1.00	% by Weight			04/03/15 0914	

Mercury	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW7471B								
Mercury, Total	0.0304	0.0111	0.277	mg/kg dry	**J**	04/02/15 0657	04/06/15 1022	

Metals by 6010	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C								
Barium, Total	147	0.214	0.428	mg/kg dry		04/02/15 1359	04/03/15 1327	
Cadmium, Total	<0.214	0.214	0.428	mg/kg dry		04/02/15 1359	04/03/15 1327	
Chromium, Total	15.2	0.107	0.214	mg/kg dry		04/02/15 1359	04/03/15 1327	
Lead, Total	8.48	2.14	4.28	mg/kg dry		04/02/15 1359	04/03/15 1327	
Silver, Total	<0.856	0.856	1.71	mg/kg dry		04/02/15 1359	04/03/15 1327	

Metals by 6020	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6020								
Arsenic, Total	4.35	0.166	0.332	mg/kg dry		04/03/15 0853	04/05/15 2303	
Selenium, Total	1.06	0.111	0.221	mg/kg dry		04/03/15 0853	04/05/15 2303	

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8270D								
Acenaphthene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Acenaphthylene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Anthracene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Benzo(a)anthracene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Benzo(a)pyrene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Benzo(b)fluoranthene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Benzo(g,h,i)Perylene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Benzo(k)fluoranthene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	

Analytical Testing Parameters

Client Sample ID:	**TB-2**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-02**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	09:12

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Chrysene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Dibenz(a,h)anthracene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Fluoranthene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Fluorene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Indeno(1,2,3-cd)pyrene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Naphthalene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Phenanthrene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Pyrene	<102	102	204	ug/kg dry		04/02/15 0842	04/03/15 2108	
Surrogate: 2,4,6-Tribromophenol	84.7		Limit: 19-122	% Rec		04/02/15 0842	04/03/15 2108	
Surrogate: 2-Fluorobiphenyl	76.5		Limit: 30-115	% Rec		04/02/15 0842	04/03/15 2108	
Surrogate: 2-Fluorophenol	61.0		Limit: 25-121	% Rec		04/02/15 0842	04/03/15 2108	
Surrogate: Nitrobenzene-d5	68.5		Limit: 23-120	% Rec		04/02/15 0842	04/03/15 2108	
Surrogate: p-Terphenyl-d14	90.4		Limit: 18-137	% Rec		04/02/15 0842	04/03/15 2108	
Surrogate: Phenol-d5	57.3		Limit: 24-113	% Rec		04/02/15 0842	04/03/15 2108	

CERTIFICATE OF ANALYSIS

S5C1945

Analytical Testing Parameters

Client Sample ID:	**TB-3**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-03**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	09:50

Analytical Testing Parameters

Client Sample ID:	TB-3	**Collected By:**	MPC
Lab Sample ID:	S5C1945-03	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	09:50

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

PCB SOLID	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8082								
Aroclor-1016	<9.09	9.09	18.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1536	
Aroclor-1221	<9.09	9.09	18.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1536	
Aroclor-1232	<9.09	9.09	18.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1536	
Aroclor-1242	<9.09	9.09	18.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1536	
Aroclor-1248	<9.09	9.09	18.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1536	
Aroclor-1254	<9.09	9.09	18.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1536	
Aroclor-1260	<9.09	9.09	18.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1536	
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene	67.3		Limit: 29-133	% Rec		05/01/15 1142	05/04/15 1536	
Surrogate: Decachlorobiphenyl	82.8		Limit: 60-125	% Rec		05/01/15 1142	05/04/15 1536	

Percent Solids	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216								
Percent Solids	96.4	1.00	1.00	% by Weight			04/03/15 0914	

Mercury	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW7471B								
Mercury, Total	<0.0103	0.0103	0.257	mg/kg dry		04/02/15 0657	04/06/15 1029	

Metals by 6010	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C								
Barium, Total	76.4	0.177	0.354	mg/kg dry		04/02/15 1359	04/03/15 1330	
Cadmium, Total	<0.177	0.177	0.354	mg/kg dry		04/02/15 1359	04/03/15 1330	
Chromium, Total	11.4	0.0884	0.177	mg/kg dry		04/02/15 1359	04/03/15 1330	
Lead, Total	7.05	1.77	3.54	mg/kg dry		04/02/15 1359	04/03/15 1330	
Silver, Total	1.12	0.707	1.41	mg/kg dry	**J**	04/02/15 1359	04/03/15 1330	

Metals by 6020	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6020								
Arsenic, Total	5.44	0.154	0.309	mg/kg dry		04/03/15 0853	04/05/15 2307	
Selenium, Total	0.587	0.103	0.206	mg/kg dry		04/03/15 0853	04/05/15 2307	

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8270D								
Acenaphthene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Acenaphthylene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Anthracene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Benzo(a)anthracene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Benzo(a)pyrene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Benzo(b)fluoranthene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Benzo(g,h,i)Perylene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Benzo(k)fluoranthene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	

Analytical Testing Parameters

Client Sample ID:	**TB-3**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-03**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	09:50

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Chrysene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Dibenz(a,h)anthracene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Fluoranthene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Fluorene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Indeno(1,2,3-cd)pyrene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Naphthalene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Phenanthrene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Pyrene	<94.6	94.6	189	ug/kg dry		04/02/15 0842	04/03/15 2140	
Surrogate: 2,4,6-Tribromophenol	97.5		Limit: 19-122	% Rec		04/02/15 0842	04/03/15 2140	
Surrogate: 2-Fluorobiphenyl	84.1		Limit: 30-115	% Rec		04/02/15 0842	04/03/15 2140	
Surrogate: 2-Fluorophenol	72.7		Limit: 25-121	% Rec		04/02/15 0842	04/03/15 2140	
Surrogate: Nitrobenzene-d5	74.2		Limit: 23-120	% Rec		04/02/15 0842	04/03/15 2140	
Surrogate: p-Terphenyl-d14	102		Limit: 18-137	% Rec		04/02/15 0842	04/03/15 2140	
Surrogate: Phenol-d5	68.2		Limit: 24-113	% Rec		04/02/15 0842	04/03/15 2140	

Analytical Testing Parameters

Client Sample ID:	**TB-4**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-04**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	10:55

Analytical Testing Parameters

Client Sample ID:	TB-4	**Collected By:**	MPC
Lab Sample ID:	S5C1945-04	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	10:55

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

PCB SOLID	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8082								
Aroclor-1016	<9.14	9.14	18.3	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1553	
Aroclor-1221	<9.14	9.14	18.3	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1553	
Aroclor-1232	<9.14	9.14	18.3	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1553	
Aroclor-1242	<9.14	9.14	18.3	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1553	
Aroclor-1248	<9.14	9.14	18.3	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1553	
Aroclor-1254	<9.14	9.14	18.3	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1553	
Aroclor-1260	<9.14	9.14	18.3	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1553	
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene	75.5		Limit: 29-133	% Rec		05/01/15 1142	05/04/15 1553	
Surrogate: Decachlorobiphenyl	83.8		Limit: 60-125	% Rec		05/01/15 1142	05/04/15 1553	

Percent Solids	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216								
Percent Solids	95.5	1.00	1.00	% by Weight			04/03/15 0914	

Mercury	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW7471B								
Mercury, Total	0.0125	0.0105	0.262	mg/kg dry	**J**	04/02/15 0657	04/06/15 1037	

Metals by 6010	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C								
Barium, Total	94.9	0.190	0.380	mg/kg dry		04/02/15 1359	04/03/15 1334	
Cadmium, Total	<0.190	0.190	0.380	mg/kg dry		04/02/15 1359	04/03/15 1334	
Chromium, Total	10.5	0.0951	0.190	mg/kg dry		04/02/15 1359	04/03/15 1334	
Lead, Total	7.87	1.90	3.80	mg/kg dry		04/02/15 1359	04/03/15 1334	
Silver, Total	<0.761	0.761	1.52	mg/kg dry		04/02/15 1359	04/03/15 1334	

Metals by 6020	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6020								
Arsenic, Total	7.09	0.155	0.310	mg/kg dry		04/03/15 0853	04/05/15 2310	
Selenium, Total	0.577	0.103	0.207	mg/kg dry		04/03/15 0853	04/05/15 2310	

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8270D								
Acenaphthene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Acenaphthylene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Anthracene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Benzo(a)anthracene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Benzo(a)pyrene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Benzo(b)fluoranthene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Benzo(g,h,i)Perylene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Benzo(k)fluoranthene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	

Analytical Testing Parameters

Client Sample ID:	**TB-4**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-04**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	10:55

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Chrysene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Dibenz(a,h)anthracene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Fluoranthene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Fluorene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Indeno(1,2,3-cd)pyrene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Naphthalene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Phenanthrene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Pyrene	<91.3	91.3	183	ug/kg dry		04/02/15 0842	04/03/15 2211	
Surrogate: 2,4,6-Tribromophenol	99.5		Limit: 19-122	% Rec		04/02/15 0842	04/03/15 2211	
Surrogate: 2-Fluorobiphenyl	86.6		Limit: 30-115	% Rec		04/02/15 0842	04/03/15 2211	
Surrogate: 2-Fluorophenol	69.5		Limit: 25-121	% Rec		04/02/15 0842	04/03/15 2211	
Surrogate: Nitrobenzene-d5	76.5		Limit: 23-120	% Rec		04/02/15 0842	04/03/15 2211	
Surrogate: p-Terphenyl-d14	107		Limit: 18-137	% Rec		04/02/15 0842	04/03/15 2211	
Surrogate: Phenol-d5	66.6		Limit: 24-113	% Rec		04/02/15 0842	04/03/15 2211	

Analytical Testing Parameters

Client Sample ID:	**TB-6**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-05**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	12:28

Analytical Testing Parameters

Client Sample ID:	**TB-6**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-05**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	12:28

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

PCB SOLID	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8082								
Aroclor-1016	<9.84	9.84	19.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1611	
Aroclor-1221	<9.84	9.84	19.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1611	
Aroclor-1232	<9.84	9.84	19.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1611	
Aroclor-1242	<9.84	9.84	19.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1611	
Aroclor-1248	<9.84	9.84	19.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1611	
Aroclor-1254	<9.84	9.84	19.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1611	
Aroclor-1260	<9.84	9.84	19.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1611	
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene	73.8		Limit: 29-133	% Rec		05/01/15 1142	05/04/15 1611	
Surrogate: Decachlorobiphenyl	84.4		Limit: 60-125	% Rec		05/01/15 1142	05/04/15 1611	

Percent Solids	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216								
Percent Solids	92.9	1.00	1.00	% by Weight			04/03/15 0914	

Mercury	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW7471B								
Mercury, Total	<0.0106	0.0106	0.264	mg/kg dry		04/02/15 0657	04/06/15 1040	

Metals by 6010	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C								
Barium, Total	11.0	0.198	0.395	mg/kg dry		04/02/15 1359	04/03/15 1338	
Cadmium, Total	<0.198	0.198	0.395	mg/kg dry		04/02/15 1359	04/03/15 1338	
Chromium, Total	5.64	0.0988	0.198	mg/kg dry		04/02/15 1359	04/03/15 1338	
Lead, Total	2.99	1.98	3.95	mg/kg dry	**J**	04/02/15 1359	04/03/15 1338	
Silver, Total	<0.790	0.790	1.58	mg/kg dry		04/02/15 1359	04/03/15 1338	

Metals by 6020	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6020								
Arsenic, Total	1.47	0.160	0.320	mg/kg dry		04/03/15 0853	04/05/15 2313	
Selenium, Total	0.181	0.107	0.213	mg/kg dry	**J**	04/03/15 0853	04/05/15 2313	

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8270D								
Acenaphthene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Acenaphthylene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Anthracene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Benzo(a)anthracene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Benzo(a)pyrene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Benzo(b)fluoranthene	501	413	825	ug/kg dry	**J**	04/02/15 0842	04/03/15 2243	
Benzo(g,h,i)Perylene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Benzo(k)fluoranthene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	

Analytical Testing Parameters

Client Sample ID:	**TB-6**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-05**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	12:28

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Chrysene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Dibenz(a,h)anthracene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Fluoranthene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Fluorene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Indeno(1,2,3-cd)pyrene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Naphthalene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Phenanthrene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Pyrene	<413	413	825	ug/kg dry		04/02/15 0842	04/03/15 2243	
Surrogate: 2,4,6-Tribromophenol	63.6		Limit: 19-122	% Rec		04/02/15 0842	04/03/15 2243	
Surrogate: 2-Fluorobiphenyl	70.1		Limit: 30-115	% Rec		04/02/15 0842	04/03/15 2243	
Surrogate: 2-Fluorophenol	51.4		Limit: 25-121	% Rec		04/02/15 0842	04/03/15 2243	
Surrogate: Nitrobenzene-d5	59.4		Limit: 23-120	% Rec		04/02/15 0842	04/03/15 2243	
Surrogate: p-Terphenyl-d14	79.5		Limit: 18-137	% Rec		04/02/15 0842	04/03/15 2243	
Surrogate: Phenol-d5	47.4		Limit: 24-113	% Rec		04/02/15 0842	04/03/15 2243	

Analytical Testing Parameters

Client Sample ID:	**TB-7**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-06**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	12:10

Analytical Testing Parameters

Client Sample ID:	**TB-7**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-06**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	12:10

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

PCB SOLID	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8082								
Aroclor-1016	<9.00	9.00	18.0	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1628	
Aroclor-1221	<9.00	9.00	18.0	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1628	
Aroclor-1232	<9.00	9.00	18.0	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1628	
Aroclor-1242	<9.00	9.00	18.0	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1628	
Aroclor-1248	<9.00	9.00	18.0	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1628	
Aroclor-1254	10.4	9.00	18.0	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1628	
Aroclor-1260	<9.00	9.00	18.0	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1628	
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene	68.3		Limit: 29-133	% Rec		05/01/15 1142	05/04/15 1628	
Surrogate: Decachlorobiphenyl	72.7		Limit: 60-125	% Rec		05/01/15 1142	05/04/15 1628	

Percent Solids	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216								
Percent Solids	94.2	1.00	1.00	% by Weight			04/03/15 0914	

Mercury	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW7471B								
Mercury, Total	<0.0106	0.0106	0.264	mg/kg dry		04/02/15 0657	04/06/15 1042	

Metals by 6010	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C								
Barium, Total	13.7	0.191	0.382	mg/kg dry		04/02/15 1359	04/03/15 1342	
Cadmium, Total	<0.191	0.191	0.382	mg/kg dry		04/02/15 1359	04/03/15 1342	
Chromium, Total	32.6	0.0956	0.191	mg/kg dry		04/02/15 1359	04/03/15 1342	
Lead, Total	26.3	1.91	3.82	mg/kg dry		04/02/15 1359	04/03/15 1342	
Silver, Total	<0.765	0.765	1.53	mg/kg dry		04/02/15 1359	04/03/15 1342	

Metals by 6020	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6020								
Arsenic, Total	3.73	0.156	0.312	mg/kg dry		04/03/15 0853	04/05/15 2316	
Selenium, Total	0.420	0.104	0.208	mg/kg dry		04/03/15 0853	04/05/15 2316	

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8270D								
Acenaphthene	<424	424	849	ug/kg dry		04/02/15 0842	04/03/15 2314	
Acenaphthylene	<424	424	849	ug/kg dry		04/02/15 0842	04/03/15 2314	
Anthracene	<424	424	849	ug/kg dry		04/02/15 0842	04/03/15 2314	
Benzo(a)anthracene	<424	424	849	ug/kg dry		04/02/15 0842	04/03/15 2314	
Benzo(a)pyrene	601	424	849	ug/kg dry	**J**	04/02/15 0842	04/03/15 2314	
Benzo(b)fluoranthene	932	424	849	ug/kg dry		04/02/15 0842	04/03/15 2314	
Benzo(g,h,i)Perylene	586	424	849	ug/kg dry	**J**	04/02/15 0842	04/03/15 2314	
Benzo(k)fluoranthene	744	424	849	ug/kg dry	**J**	04/02/15 0842	04/03/15 2314	

Analytical Testing Parameters

Client Sample ID:	**TB-7**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-06**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	12:10

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Chrysene	632	424	849	ug/kg dry	J	04/02/15 0842	04/03/15 2314	
Dibenz(a,h)anthracene	<424	424	849	ug/kg dry		04/02/15 0842	04/03/15 2314	
Fluoranthene	<424	424	849	ug/kg dry		04/02/15 0842	04/03/15 2314	
Fluorene	<424	424	849	ug/kg dry		04/02/15 0842	04/03/15 2314	
Indeno(1,2,3-cd)pyrene	495	424	849	ug/kg dry	J	04/02/15 0842	04/03/15 2314	
Naphthalene	<424	424	849	ug/kg dry		04/02/15 0842	04/03/15 2314	
Phenanthrene	<424	424	849	ug/kg dry		04/02/15 0842	04/03/15 2314	
Pyrene	<424	424	849	ug/kg dry		04/02/15 0842	04/03/15 2314	
Surrogate: 2,4,6-Tribromophenol	79.1		Limit: 19-122	% Rec		04/02/15 0842	04/03/15 2314	
Surrogate: 2-Fluorobiphenyl	78.2		Limit: 30-115	% Rec		04/02/15 0842	04/03/15 2314	
Surrogate: 2-Fluorophenol	61.1		Limit: 25-121	% Rec		04/02/15 0842	04/03/15 2314	
Surrogate: Nitrobenzene-d5	67.3		Limit: 23-120	% Rec		04/02/15 0842	04/03/15 2314	
Surrogate: p-Terphenyl-d14	91.2		Limit: 18-137	% Rec		04/02/15 0842	04/03/15 2314	
Surrogate: Phenol-d5	57.1		Limit: 24-113	% Rec		04/02/15 0842	04/03/15 2314	

Analytical Testing Parameters

Client Sample ID:	**TB-8**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-07**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	11:35

Analytical Testing Parameters

Client Sample ID:	TB-8	**Collected By:**	MPC
Lab Sample ID:	S5C1945-07	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	11:35

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

PCB SOLID	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8082								
Aroclor-1016	<8.75	8.75	17.5	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1645	
Aroclor-1221	<8.75	8.75	17.5	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1645	
Aroclor-1232	<8.75	8.75	17.5	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1645	
Aroclor-1242	<8.75	8.75	17.5	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1645	
Aroclor-1248	<8.75	8.75	17.5	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1645	
Aroclor-1254	<8.75	8.75	17.5	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1645	
Aroclor-1260	<8.75	8.75	17.5	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1645	
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene	77.0		Limit: 29-133	% Rec		05/01/15 1142	05/04/15 1645	
Surrogate: Decachlorobiphenyl	89.5		Limit: 60-125	% Rec		05/01/15 1142	05/04/15 1645	

Percent Solids	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216								
Percent Solids	91.8	1.00	1.00	% by Weight			04/03/15 0914	

Mercury	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW7471B								
Mercury, Total	<0.0101	0.0101	0.252	mg/kg dry		04/02/15 0657	04/06/15 1045	

Metals by 6010	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C								
Barium, Total	8.21	0.193	0.387	mg/kg dry		04/02/15 1359	04/03/15 1346	
Cadmium, Total	<0.193	0.193	0.387	mg/kg dry		04/02/15 1359	04/03/15 1346	
Chromium, Total	5.31	0.0967	0.193	mg/kg dry		04/02/15 1359	04/03/15 1346	
Lead, Total	3.05	1.93	3.87	mg/kg dry	**J**	04/02/15 1359	04/03/15 1346	
Silver, Total	<0.774	0.774	1.55	mg/kg dry		04/02/15 1359	04/03/15 1346	

Metals by 6020	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6020								
Arsenic, Total	1.51	0.161	0.322	mg/kg dry		04/03/15 0853	04/05/15 2319	
Selenium, Total	0.151	0.107	0.214	mg/kg dry	**J**	04/03/15 0853	04/05/15 2319	

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8270D								
Acenaphthene	<435	435	870	ug/kg dry		04/02/15 0842	04/03/15 2346	
Acenaphthylene	<435	435	870	ug/kg dry		04/02/15 0842	04/03/15 2346	
Anthracene	<435	435	870	ug/kg dry		04/02/15 0842	04/03/15 2346	
Benzo(a)anthracene	<435	435	870	ug/kg dry		04/02/15 0842	04/03/15 2346	
Benzo(a)pyrene	672	435	870	ug/kg dry	**J**	04/02/15 0842	04/03/15 2346	
Benzo(b)fluoranthene	758	435	870	ug/kg dry	**J**	04/02/15 0842	04/03/15 2346	
Benzo(g,h,i)Perylene	478	435	870	ug/kg dry	**J**	04/02/15 0842	04/03/15 2346	
Benzo(k)fluoranthene	657	435	870	ug/kg dry	**J**	04/02/15 0842	04/03/15 2346	

Analytical Testing Parameters

Client Sample ID:	**TB-8**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-07**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	11:35

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Chrysene	540	435	870	ug/kg dry	J	04/02/15 0842	04/03/15 2346	
Dibenz(a,h)anthracene	<435	435	870	ug/kg dry		04/02/15 0842	04/03/15 2346	
Fluoranthene	<435	435	870	ug/kg dry		04/02/15 0842	04/03/15 2346	
Fluorene	<435	435	870	ug/kg dry		04/02/15 0842	04/03/15 2346	
Indeno(1,2,3-cd)pyrene	<435	435	870	ug/kg dry		04/02/15 0842	04/03/15 2346	
Naphthalene	<435	435	870	ug/kg dry		04/02/15 0842	04/03/15 2346	
Phenanthrene	<435	435	870	ug/kg dry		04/02/15 0842	04/03/15 2346	
Pyrene	<435	435	870	ug/kg dry		04/02/15 0842	04/03/15 2346	
Surrogate: 2,4,6-Tribromophenol	81.7		Limit: 19-122	% Rec		04/02/15 0842	04/03/15 2346	
Surrogate: 2-Fluorobiphenyl	79.9		Limit: 30-115	% Rec		04/02/15 0842	04/03/15 2346	
Surrogate: 2-Fluorophenol	63.7		Limit: 25-121	% Rec		04/02/15 0842	04/03/15 2346	
Surrogate: Nitrobenzene-d5	68.2		Limit: 23-120	% Rec		04/02/15 0842	04/03/15 2346	
Surrogate: p-Terphenyl-d14	93.8		Limit: 18-137	% Rec		04/02/15 0842	04/03/15 2346	
Surrogate: Phenol-d5	59.7		Limit: 24-113	% Rec		04/02/15 0842	04/03/15 2346	

Analytical Testing Parameters

Client Sample ID:	**TB-9**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-08**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	11:20

Analytical Testing Parameters

Client Sample ID:	TB-9	**Collected By:**	MPC
Lab Sample ID:	S5C1945-08	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	11:20

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

PCB SOLID	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8082								
Aroclor-1016	<8.11	8.11	16.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1703	
Aroclor-1221	<8.11	8.11	16.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1703	
Aroclor-1232	<8.11	8.11	16.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1703	
Aroclor-1242	<8.11	8.11	16.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1703	
Aroclor-1248	<8.11	8.11	16.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1703	
Aroclor-1254	<8.11	8.11	16.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1703	
Aroclor-1260	<8.11	8.11	16.2	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1703	
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene	72.9		Limit: 29-133	% Rec		05/01/15 1142	05/04/15 1703	
Surrogate: Decachlorobiphenyl	83.2		Limit: 60-125	% Rec		05/01/15 1142	05/04/15 1703	

Percent Solids	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216								
Percent Solids	94.5	1.00	1.00	% by Weight			04/03/15 0914	

Mercury	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW7471B								
Mercury, Total	<0.0101	0.0101	0.252	mg/kg dry		04/02/15 0657	04/06/15 1047	

Metals by 6010	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C								
Barium, Total	18.8	0.186	0.372	mg/kg dry		04/02/15 1359	04/03/15 1350	
Cadmium, Total	<0.186	0.186	0.372	mg/kg dry		04/02/15 1359	04/03/15 1350	
Chromium, Total	9.02	0.0929	0.186	mg/kg dry		04/02/15 1359	04/03/15 1350	
Lead, Total	18.9	1.86	3.72	mg/kg dry		04/02/15 1359	04/03/15 1350	
Silver, Total	<0.743	0.743	1.49	mg/kg dry		04/02/15 1359	04/03/15 1350	

Metals by 6020	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6020								
Arsenic, Total	1.63	0.155	0.310	mg/kg dry		04/03/15 0853	04/05/15 2323	
Selenium, Total	0.177	0.103	0.207	mg/kg dry	**J**	04/03/15 0853	04/05/15 2323	

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8270D								
Acenaphthene	<462	462	925	ug/kg dry		04/02/15 0842	04/04/15 0018	
Acenaphthylene	<462	462	925	ug/kg dry		04/02/15 0842	04/04/15 0018	
Anthracene	<462	462	925	ug/kg dry		04/02/15 0842	04/04/15 0018	
Benzo(a)anthracene	<462	462	925	ug/kg dry		04/02/15 0842	04/04/15 0018	
Benzo(a)pyrene	697	462	925	ug/kg dry	**J**	04/02/15 0842	04/04/15 0018	
Benzo(b)fluoranthene	1040	462	925	ug/kg dry		04/02/15 0842	04/04/15 0018	
Benzo(g,h,i)Perylene	700	462	925	ug/kg dry	**J**	04/02/15 0842	04/04/15 0018	
Benzo(k)fluoranthene	804	462	925	ug/kg dry	**J**	04/02/15 0842	04/04/15 0018	

Analytical Testing Parameters

Client Sample ID:	**TB-9**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-08**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	11:20

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Chrysene	717	462	925	ug/kg dry	J	04/02/15 0842	04/04/15 0018	
Dibenz(a,h)anthracene	<462	462	925	ug/kg dry		04/02/15 0842	04/04/15 0018	
Fluoranthene	<462	462	925	ug/kg dry		04/02/15 0842	04/04/15 0018	
Fluorene	<462	462	925	ug/kg dry		04/02/15 0842	04/04/15 0018	
Indeno(1,2,3-cd)pyrene	579	462	925	ug/kg dry	J	04/02/15 0842	04/04/15 0018	
Naphthalene	<462	462	925	ug/kg dry		04/02/15 0842	04/04/15 0018	
Phenanthrene	<462	462	925	ug/kg dry		04/02/15 0842	04/04/15 0018	
Pyrene	<462	462	925	ug/kg dry		04/02/15 0842	04/04/15 0018	
Surrogate: 2,4,6-Tribromophenol	73.3		Limit: 19-122	% Rec		04/02/15 0842	04/04/15 0018	
Surrogate: 2-Fluorobiphenyl	74.4		Limit: 30-115	% Rec		04/02/15 0842	04/04/15 0018	
Surrogate: 2-Fluorophenol	57.9		Limit: 25-121	% Rec		04/02/15 0842	04/04/15 0018	
Surrogate: Nitrobenzene-d5	63.9		Limit: 23-120	% Rec		04/02/15 0842	04/04/15 0018	
Surrogate: p-Terphenyl-d14	88.3		Limit: 18-137	% Rec		04/02/15 0842	04/04/15 0018	
Surrogate: Phenol-d5	53.8		Limit: 24-113	% Rec		04/02/15 0842	04/04/15 0018	

Analytical Testing Parameters

Client Sample ID:	**TB-10**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-09**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	12:50

Analytical Testing Parameters

Client Sample ID:	**TB-10**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-09**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	12:50

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

PCB SOLID	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8082								
Aroclor-1016	<8.95	8.95	17.9	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1720	
Aroclor-1221	<8.95	8.95	17.9	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1720	
Aroclor-1232	<8.95	8.95	17.9	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1720	
Aroclor-1242	<8.95	8.95	17.9	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1720	
Aroclor-1248	<8.95	8.95	17.9	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1720	
Aroclor-1254	23.7	8.95	17.9	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1720	
Aroclor-1260	<8.95	8.95	17.9	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1720	
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene	80.5		Limit: 29-133	% Rec		05/01/15 1142	05/04/15 1720	
Surrogate: Decachlorobiphenyl	79.2		Limit: 60-125	% Rec		05/01/15 1142	05/04/15 1720	

Percent Solids	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216								
Percent Solids	91.4	1.00	1.00	% by Weight			04/03/15 0914	

Mercury	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW7471B								
Mercury, Total	0.0112	0.0107	0.267	mg/kg dry	**J**	04/02/15 0657	04/06/15 1050	

Metals by 6010	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C								
Barium, Total	29.2	0.200	0.401	mg/kg dry		04/02/15 1359	04/03/15 1413	
Cadmium, Total	<0.200	0.200	0.401	mg/kg dry		04/02/15 1359	04/03/15 1413	
Chromium, Total	12.0	0.100	0.200	mg/kg dry		04/02/15 1359	04/03/15 1413	
Lead, Total	12.6	2.00	4.01	mg/kg dry		04/02/15 1359	04/03/15 1413	
Silver, Total	<0.802	0.802	1.60	mg/kg dry		04/02/15 1359	04/03/15 1413	

Metals by 6020	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6020								
Arsenic, Total	1.98	0.163	0.327	mg/kg dry		04/03/15 0853	04/05/15 2326	
Selenium, Total	0.305	0.109	0.218	mg/kg dry		04/03/15 0853	04/05/15 2326	

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8270D								
Acenaphthene	<938	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Acenaphthylene	<938	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Anthracene	<938	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Benzo(a)anthracene	1300	938	1880	ug/kg dry	**J**	04/02/15 0842	04/04/15 0050	
Benzo(a)pyrene	2240	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Benzo(b)fluoranthene	4430	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Benzo(g,h,i)Perylene	2820	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Benzo(k)fluoranthene	2720	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	

Analytical Testing Parameters

Client Sample ID:	**TB-10**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-09**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	12:50

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Chrysene	2410	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Dibenz(a,h)anthracene	<938	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Fluoranthene	1110	938	1880	ug/kg dry	J	04/02/15 0842	04/04/15 0050	
Fluorene	<938	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Indeno(1,2,3-cd)pyrene	2340	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Naphthalene	<938	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Phenanthrene	<938	938	1880	ug/kg dry		04/02/15 0842	04/04/15 0050	
Pyrene	1100	938	1880	ug/kg dry	J	04/02/15 0842	04/04/15 0050	
Surrogate: 2,4,6-Tribromophenol	61.7		Limit: 19-122	% Rec		04/02/15 0842	04/04/15 0050	
Surrogate: 2-Fluorobiphenyl	70.1		Limit: 30-115	% Rec		04/02/15 0842	04/04/15 0050	
Surrogate: 2-Fluorophenol	51.1		Limit: 25-121	% Rec		04/02/15 0842	04/04/15 0050	
Surrogate: Nitrobenzene-d5	57.8		Limit: 23-120	% Rec		04/02/15 0842	04/04/15 0050	
Surrogate: p-Terphenyl-d14	79.6		Limit: 18-137	% Rec		04/02/15 0842	04/04/15 0050	
Surrogate: Phenol-d5	48.5		Limit: 24-113	% Rec		04/02/15 0842	04/04/15 0050	

Analytical Testing Parameters

Client Sample ID:	**TB-11**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-10**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	13:10

Analytical Testing Parameters

Client Sample ID:	**TB-11**	**Collected By:**	MPC
Lab Sample ID:	**S5C1945-10**	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	13:10

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

PCB SOLID	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8082								
Aroclor-1016	<8.37	8.37	16.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1737	
Aroclor-1221	<8.37	8.37	16.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1737	
Aroclor-1232	<8.37	8.37	16.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1737	
Aroclor-1242	<8.37	8.37	16.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1737	
Aroclor-1248	<8.37	8.37	16.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1737	
Aroclor-1254	<8.37	8.37	16.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1737	
Aroclor-1260	<8.37	8.37	16.7	ug/kg dry	**H1a**	05/01/15 1142	05/04/15 1737	
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene	85.2		Limit: 29-133	% Rec		05/01/15 1142	05/04/15 1737	
Surrogate: Decachlorobiphenyl	80.4		Limit: 60-125	% Rec		05/01/15 1142	05/04/15 1737	

Percent Solids	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: D2216								
Percent Solids	93.5	1.00	1.00	% by Weight			04/03/15 0914	

Mercury	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW7471B								
Mercury, Total	0.0192	0.0104	0.260	mg/kg dry	**J**	04/02/15 0657	04/06/15 1052	

Metals by 6010	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6010C								
Barium, Total	18.4	0.192	0.384	mg/kg dry		04/02/15 1359	04/03/15 1252	
Cadmium, Total	<0.192	0.192	0.384	mg/kg dry		04/02/15 1359	04/03/15 1252	
Chromium, Total	14.5	0.0959	0.192	mg/kg dry		04/02/15 1359	04/03/15 1252	
Lead, Total	31.1	1.92	3.84	mg/kg dry		04/02/15 1359	04/03/15 1252	
Silver, Total	<0.768	0.768	1.54	mg/kg dry		04/02/15 1359	04/03/15 1252	

Metals by 6020	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW6020								
Arsenic, Total	1.59	0.159	0.317	mg/kg dry		04/03/15 0853	04/05/15 2235	
Selenium, Total	0.220	0.106	0.211	mg/kg dry		04/03/15 0853	04/05/15 2235	

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Method: SW8270D								
Acenaphthene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Acenaphthylene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Anthracene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Benzo(a)anthracene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Benzo(a)pyrene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Benzo(b)fluoranthene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Benzo(g,h,i)Perylene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Benzo(k)fluoranthene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	

Analytical Testing Parameters

Client Sample ID:	TB-11	**Collected By:**	MPC
Lab Sample ID:	S5C1945-10	**Collection Date:**	03/26/15
Sample Type:	Grab	**Collection Time:**	13:10

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

SEMIVOLATILE ORGANICS	Result	MDL	PQL	Units	Note	Prepared	Analyzed	Lab
Chrysene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Dibenz(a,h)anthracene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Fluoranthene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Fluorene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Indeno(1,2,3-cd)pyrene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Naphthalene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Phenanthrene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Pyrene	<2070	2070	4140	ug/kg dry		04/02/15 0842	04/04/15 0121	
Surrogate: 2,4,6-Tribromophenol			Limit: 19-122	% Rec	DL	04/02/15 0842	04/04/15 0121	
Surrogate: 2-Fluorobiphenyl			Limit: 30-115	% Rec	DL	04/02/15 0842	04/04/15 0121	
Surrogate: 2-Fluorophenol			Limit: 25-121	% Rec	DL	04/02/15 0842	04/04/15 0121	
Surrogate: Nitrobenzene-d5			Limit: 23-120	% Rec	DL	04/02/15 0842	04/04/15 0121	
Surrogate: p-Terphenyl-d14			Limit: 18-137	% Rec	DL	04/02/15 0842	04/04/15 0121	
Surrogate: Phenol-d5			Limit: 24-113	% Rec	DL	04/02/15 0842	04/04/15 0121	

Laboratory

SAY: Microbac Laboratories Inc., - Sayre

Definitions

DL: Surrogate or spike compound was diluted out
H1: [Undefined]
H1a: Sample analysis performed past holding time.
J: The analyte was positively identified, but the quantitation was below the RL
MDL: Minimum Detection Limit
PQL: Practical Quantitation Limit
RPD: Relative Pecent Difference
Ua: Not detected at or above adjusted sample detection limit

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 14.2°C

Cooler Inspection Checklist

Custody Seals Intact and/or No Evidence of Tampering	Yes	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Correct (or not required)	Yes
Received on Ice (or not required)	Yes		

Microbac Laboratories, Inc., Sayre Division

CERTIFICATE OF ANALYSIS

S5C1945

Project Requested Certification(s)

Microbac Laboratories Inc., - Sayre	
PA-Sayre DEP ID: 08-00380	Pennsylvania Department of Environmental Protection
Microbac Laboratories, Inc. - Ohio Valley	
NY Lab ID No.: 10861, Serial No.: 50396	New York State Department of Health
DEP ID: 68-01670, Cert No.: 010	State of Pennsylvania (NELAC)
VA ID: 460187, Cert: 6338	Virginia

Report Comments

In accordance with NYSDOH-ELAP and NELAC, any non-conformance of these regulations are noted directly on the laboratory report as qualifiers and/or noted in the case narrative.

Reviewed and Approved By:

Theresa Fenstermaker For Renee Lantz
Project Manager
10/12/2015 12:09

Go Green: Contact Renee Lantz to set up email reporting and invoicing options.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. For any feedback concerning our services, please contact Renee Lantz at renee.lantz@microbac.com. You may also contact Trevor Boyce President, at president@microbac.com.

CHAIN OF CUSTODY

Benchmark Analytics, Inc.
Eastern Division
2566 Pennsylvania Avenue • Sayre, PA 18840
Phone: (570) 888-0169
Fax: (570) 888-0717

REPORT TO:

Moody and Associates, Inc
685 Broad St Ext. Suite 1
Waverly, NY 14892
CONTACT Tim Eriksen, PG
PH# 607-565-8800
FAX# 607-565-8805
BILL TO: Same as above

PO# 15-107-TE
PROJECT DESCRIPTION
Village of Painted Post - Monroe Tractor
SAMPLER SIGNATURE / AFFILIATION
M. Caldwell Moody & Associates, Inc.
CONTAINER SAMPLING POINT

REFRIGERATE SAMPLES AFTER COLLECTION

TRANSPORT TO LABORATORY IN COOLER WITH ICE

DW	DRINKING WATER	SL	SLUDGE
GW	GROUND WATER	SO	SOIL
SW	SURFACE WATER	HZ	HAZARDOUS
WW	WASTE WATER	OTHER	
DE	DEIONIZED WATER	DI	DISTILLED WATER

RESULTS ARE BEING USED FOR:
☐ NYDOH ☐ NYDEC ☐ PADEP
☐ LANDFILL_____
☐ PERSONAL OTHER_____

ARE SPECIAL DETECTION LIMITS
NEEDED: ☐ YES / ☑ NO
IF YES, PLEASE ATTACH
IS A QC PACKAGE NEEDED?
☐ YES ☑ NO
IF YES, PLEASE ATTACH REQUIREMENTS

H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO_3	SODIUM SULFITE	NH_4	AMMONIUM CHLORIDE
Thio	SODIUM THIOSULFATE	ZN	ZINC ACETATE
–	NONE	Hg	MERCURIC CHLORIDE

An incomplete chain of custody may delay the processing of your sample(s).

	CONTAINER	DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	ANALYSIS TO BE PERFORMED (PER CONTAINER)	COMPOSITED ON RECEIPT	PRESERVATIVE ADDED ON RECEIPT	LAB USE
1	TB-1	3/26/15	11:50	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
2	TB-2	3/26/15	09:12	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
3	TB-3	3/26/15	09:50	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
4	TB-4	3/26/15	10:55	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
5	TB-6	3/26/15	12:28	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
6	TB-7	3/26/15	12:10	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
7	TB-8	3/26/15	11:35	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
8	TB-9	3/26/15	11:20	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
9	TB-10	3/26/15	12:50	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
10	TB-11	3/26/15	13:10	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
11											

Pleas
appli
co

Moody & Associates, Inc-Waverly
S5C1945

DELIVERED BY Client TEMPERATURE UPON RECEIPT 4.2 °C ARRIVAL ON ICE Y N 3/26/15

RELINQUISHED BY:	DATE: 3/26/15	TIME: 1525	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: 3/26/15	TIME: 1525

Ad Graphics Printing 570-888-0685

CHAIN OF CUSTODY

Benchmark Analytics, Inc.
Eastern Division
2566 Pennsylvania Avenue • Sayre, PA 18840
Phone: (570) 888-0169
Fax: (570) 888-0717

REPORT TO:

Moody and Associates, Inc
685 Broad St Ext. Suite 1
Waverly, NY 14892
CONTACT Tim Eriksen, PG
PH# 607-565-8800
FAX# 607-565-8805
BILL TO: Same as above

PO# 15-107-TE
PROJECT DESCRIPTION
Village of Painted Post - Monroe Tractor
SAMPLER SIGNATURE / AFFILIATION
M Caldwell Moody & Associates, Inc.
CONTAINER SAMPLING POINT

REFRIGERATE SAMPLES AFTER COLLECTION

TRANSPORT TO LABORATORY IN COOLER WITH ICE

DW	DRINKING WATER	SL	SLUDGE
GW	GROUND WATER	SO	SOIL
SW	SURFACE WATER	HZ	HAZARDOUS
WW	WASTE WATER	OTHER	
DE	DEIONIZED WATER	DI	DISTILLED WATER

RESULTS ARE BEING USED FOR:
☐ NYDOH ☐ NYDEC ☐ PADEP
☐ LANDFILL _____
☐ PERSONAL OTHER _____

ARE SPECIAL DETECTION LIMITS NEEDED: ☐ YES / ☑ NO
IF YES, PLEASE ATTACH
IS A QC PACKAGE NEEDED?
☐ YES ☑ NO
IF YES, PLEASE ATTACH REQUIREMENTS

H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO_3	SODIUM SULFITE	NH_4	AMMONIUM CHLORIDE
Thio	SODIUM THIOSULFATE	ZN	ZINC ACETATE
-	NONE	Hg	MERCURIC CHLORIDE

An incomplete chain of custody may delay the processing of your sample(s).

	CONTAINER	DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	ANALYSIS TO BE PERFORMED (PER CONTAINER)	COMPOSITED ON RECEIPT	PRESERVATIVE ADDED ON RECEIPT	LAB USE
1	TB-1	3/26/15	11:50	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
2	TB-2	3/26/15	09:12	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
3	TB-3	3/26/15	09:50	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
4	TB-4	3/26/15	10:55	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
5	TB-6	3/26/15	12:28	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
6	TB-7	3/26/15	12:10	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
7	TB-8	3/26/15	11:35	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
8	TB-9	3/26/15	11:20	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
9	TB-10	3/26/15	12:50	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
10	TB-11	3/26/15	13:10	SO	G	MPC	--	NYSDEC 8270 STARS List, 8 RCRA Metals, % Solids			
11								Add PCBs to samples listed above			

Please apply to all results

Moody & Associates, Inc-Waverly

S5C19145

DELIVERED BY: Client TEMPERATURE UPON RECEIPT 4.2 °C ARRIVAL ON ICE YES NO

	DATE	TIME		DATE	TIME
RELINQUISHED BY: M Caldwell	3/26/15	1525	RECEIVED BY:	/ /	
RELINQUISHED BY:	/ /		RECEIVED BY:	/ /	
RELINQUISHED BY:	/ /		RECEIVED BY:	3/26/15	1525

Ad Graphics Printing 570-888-0685

TABLE 1

Analytical Detection Summary

PHASE II ENVIRONMENTAL SITE ASSESSMENT
FORMER INGERSOLL-RAND FOUNDRY SITE
TOWN OF ERWIN, STEUBEN COUNTY, NEW YORK

TABLE 1

Soil Analytical Results Summary Table

PARAMETERS	TB-1 3/26/2015	TB-2 3/26/2015	TB-3 3/26/2015	TB-4 3/26/2015	TB-6 3/26/2015	TB-7 3/26/2015	TB-8 3/26/2015	TB-9 3/26/2015	TB-10 3/26/2015	TB-11 3/26/2015	NYSDEC Restricted Use Soil Cleanup Objectives				
											Unrestricted Use	Residential	Restricted-Residential	Commercial	Industrial
SVOCs mg/kg dry															
Napthalene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	<0.424	<0.435	<0.462	<0.938	<2.07		100	100	500	1000
Acenaphthylene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	<0.424	<0.435	<0.462	<0.938	<2.07		100	100	500	1000
Acenaphthene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	<0.424	<0.435	<0.462	<0.938	<2.07	20	100	100	500	1000
Fluorene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	<0.424	<0.435	<0.462	<0.938	<2.07	30	100	100	500	1000
Phenanthrene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	<0.424	<0.435	<0.462	<0.938	<2.07	100	100	100	500	1000
Anthracene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	<0.424	<0.435	<0.462	<0.938	<2.07	100	100	100	500	1000
Fluoranthene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	<0.424	<0.435	<0.462	1.11	<2.07	100	100	100	500	1000
Pyrene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	<0.424	<0.435	<0.462	1.10	<2.07	100	100	100	500	1000
Benzo(a)anthracene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	<0.424	<0.435	<0.462	1.30	<2.07	1	1	1	5.6	11
Chrysene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	0.632	0.54	0.717	2.41	<2.07	1	1	3.9	56	110
Benzo(b)fluoranthene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	0.932	0.758	1.04	4.43	<2.07	1	1	1	5.6	11
Benzo(k)fluoranthene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	0.744	0.657	0.804	2.72	<2.07	0.8	1	3.9	56	110
Benzo(a)pyrene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	0.601	0.672	0.697	2.24	<2.07	1	1	1	1	1.1
Indeno(1,2,3-cd)pyrene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	0.495	<0.435	<0.462	2.34	<2.07	0.5	0.5	0.5	5.6	11
Dibenz(a,h)anthracene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	<0.424	<0.435	<0.462	<0.938	<2.07	0.33	0.33	0.33	0.56	1.1
Benzo(g,h,i)perylene	<0.0925	<0.102	<0.0946	<0.0913	<0.413	<0.424	0.478	0.700	2.82	<2.07	100	100	100	500	1000
% Solids	96.20	88.6	96.4	95.5	92.9	94.2	91.8	94.5	91.4	93.5	-	-	-	-	-
Metals mg/kg dry															
Mercury	<0.00976	0.0304	<0.0103	0.0125	<0.0106	<0.0106	<0.0101	<0.0101	0.0112	0.0192	0.18	0.81	0.81	2.8	5.7
Arsenic	0.832	4.35	5.44	7.09	1.47	3.7	1.51	1.63	1.98	1.59	13	16	16	16	16
Barium	8.92	147	76.4	94.9	11.0	13.7	8.21	18.8	29.2	18.4	350	350	400	400	10000
Cadmium	<0.185	<0.214	<0.177	<0.190	<0.198	<0.191	<0.193	<0.186	<0.200	<0.192	2.5	2.5	4.3	9.3	60
Chromium	4.24	15.2	11.4	10.5	5.64	32.6	5.31	9.02	12	14.5	30	36	180	1500	6800
Lead	<0.738	8.48	7.05	7.87	2.99	26.3	3.05	18.9	12.6	31.1	63	400	400	1000	3900
Selenium	0.109	1.06	0.587	0.577	0.181	0.420	0.151	0.177	0.305	0.22	3.9	36	180	1500	6800
Silver	<0.738	<0.856	1.12	<0.761	<0.790	<0.765	<0.774	<0.743	<0.802	<0.768	2	36	180	1500	6800
PCB Solid mg/kg dry															
Aroclor-1016	<0.00881	<0.00970	<0.00909	<0.00914	<0.00984	<0.00900	<0.00875	<0.00811	<0.00895	<0.00837	0.1	1	1	1	25
Aroclor-1221	<0.00881	<0.00970	<0.00909	<0.00914	<0.00984	<0.00900	<0.00875	<0.00811	<0.00895	<0.00837	0.1	1	1	1	25
Aroclor-1232	<0.00881	<0.00970	<0.00909	<0.00914	<0.00984	<0.00900	<0.00875	<0.00811	<0.00895	<0.00837	0.1	1	1	1	25
Aroclor-1242	<0.00881	<0.00970	<0.00909	<0.00914	<0.00984	<0.00900	<0.00875	<0.00811	<0.00895	<0.00837	0.1	1	1	1	25
Aroclor-1248	<0.00881	<0.00970	<0.00909	<0.00914	<0.00984	<0.00900	<0.00875	<0.00811	<0.00895	<0.00837	0.1	1	1	1	25
Aroclor-1254	<0.00881	<0.00970	<0.00909	<0.00914	<0.00984	0.01040	<0.00875	<0.00811	0.02370	<0.00837	0.1	1	1	1	25
Aroclor-1260	<0.00881	<0.00970	<0.00909	<0.00914	<0.00984	<0.00900	<0.00875	<0.00811	<0.00895	<0.00837	0.1	1	1	1	25

Notes

	= Parameter detected below Commercial Use Standard
	= Parameter detected above Commercial Use Standard
<0.002	= non-detectable concentration by the approved analytical method

Unrestricted Use	"Unrestricted use" which is a use without imposed restrictions, such as environmental easements or other land use controls
Residential	"Residential use" which is the land use category which allows a site to be used for any use other than raising live stock or producing animal products for human consumption. Restrictions on the use of groundwater are allowed, but no other institutional or engineering controls are allowed relative to the residential use soil cleanup objectives. This is the land use category which will be considered for single family housing
Restricted-Residential	"Restricted-residential use" which is the land use category which shall only be considered when there is common ownership or a single owner/managing entity of the site. Restricted-residential use:
	(a) shall, at a minimum, include restrictions which prohibit:
	(1) any vegetable gardens on a site, although community vegetable gardens may be considered with Department approval; and
	(2) single family housing; and
	(b) includes active recreational uses, which are public uses with a reasonable potential for soil contact;
Commercial	"Commercial use" which is the land use category which shall only be considered for the primary purpose of buying, selling or trading of merchandise or services. Commercial use includes passive recreational uses, which are public uses with limited potential for soil contact
Industrial	"Industrial use" which is the land use category which shall only be considered for the primary purpose of manufacturing, production, fabrication or assembly processes and ancillary services. Industrial use does not include any recreational component

Appendix H
Historic and Archaeological Resources

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

May 19, 2020

Amanda Ratchford
Larson Design Group
1 W Market St
Suite 301
Corning, NY 14830

Re: DEC
Painted Post Distribution Center
450 W Water St, Painted Post, NY 14870
20PR03036

Dear Amanda Ratchford:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the OPRHP and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

Appendix I
Transportation and Circulation

TRAFFIC IMPACT STUDY
WEST WATER STREET
REDEVELOPMENT PROJECT

PREPARED FOR

VILLAGE OF PAINTED POST
261 STEUBEN STREET
PAINTED POST, NY 14870

PREPARED BY

FAGAN
ENGINEERS
& LAND SURVEYORS PC

July 2025
FE PROJECT NO. 2020-045.001

TRAFFIC IMPACT STUDY
WEST WATER STREET REDEVELOPMENT PROJECT
FE PROJECT NO. 2020-045.001

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IX	**Level of Service (LOS) Requirements**	7
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TRAFFIC IMPACT STUDY
WEST WATER STREET REDEVELOPMENT PROJECT
FE PROJECT NO. 2020-045.001

Maps and Figures

1. Project Location
2. Concept – Alternative of Choice
3. Concept – Maximum Development Alternative
4. 2025 Existing Condition
5. 2030 Background Condition
6. Trip Distribution – AM
7. Trip Distribution – PM
8. Trip Generation – Alternative of Choice – AM
9. Trip Generation – Alternative of Choice – PM
10. Trip Generation – Maximum Development Alternative – AM
11. Trip Generation – Maximum Development Alternative – PM
12. 2030 Alternative of Choice
13. 2030 Maximum Development Alternative

LIST OF APPENDICES

Appendix A ..... Figures and Trip Generation

Appendix B ..... LOS Summary and Synchro Results

Appendix C ..... DOT Traffic Signal Timing

Executive Summary

The purpose of this Traffic Impact Study (TIS) is to analyze potential impacts of traffic generated by the proposed West Water Street Redevelopment Project in the Village of Painted Post, Steuben County, New York.

A Draft Generic Environmental Impact Statement (DGEIS) is being prepared for the Village with the intention of repurposing and rehabilitating a cleared 49-acre parcel of the former Ingersoll-Rand iron foundry facility. Through this DGEIS, three alternatives have been proposed; a No Build alternative, a 249,000 SF Alternative of Choice and a 352,800 SF Maximum Development Alternative. The property is currently undeveloped, mainly consisting of a combination of grass and wooded cover, a paved parking area and remnants of prior structure foundations. A Village owned rail siding and a Village Department of Public Works building are also located on the parcel.

Both proposed developments are variations of a business park with multiple structures composed of office and commercial buildings. The proposed facilities are anticipated to operate at 16-hour days (two shifts), five days a week.

There are 452 automobile parking spaces and 11 tractor trailer loading spaces proposed for the Alternative of Choice. There are 555 automobile parking spaces and 16 tractor trailer loading spaces proposed for the Maximum Development Alternative.

The completed TIS has determined:

- The TIS was performed in accordance with ITE industry standards. The following is a list of intersections that were evaluated:
    - S. Hamilton Street & Highway I-86 EB Ramps
    - N. Hamilton Street & Highway I-86 WB Ramps
    - N. Hamilton Street & W. Water Street
    - N. Hamilton Street & High Street
    - Steuben Street & High Street
    - Highway I-86 Ramps & W. Pulteney Street
- The proposed land-use for the Alternative of Choice is 249,000 square feet of building space.
- The proposed land-use for the Maximum Development Alternative is 352,800 square feet of building space.
- Site access would occur via West Water Street, the street terminates at the proposed redevelopment location.
- The Alternative of Choice option would generate the following additional trip ends:

	AM Peak Hour	PM Peak Hour
Average Trip Ends	350	349
Entering	294	80
Exiting	56	269

- The Maximum Development Alternative option would generate the following additional trip ends:

	AM Peak Hour	PM Peak Hour
Average Trip Ends	492	481
Entering	413	111
Exiting	79	371

- Raw traffic counts were collected between the dates of 6/10/2025-6/24/2025 prior to the Corning-Painted Post Middle School closing for the semester. AM traffic data was collected between the hours of 7-9AM and PM traffic data was collected between 2-4PM to encompass school and work traffic. This data was then used to calculate the Peak Hour Traffic for AM and PM.
- New traffic associated with the proposed development would not cause a significant impact on level-of-service for any of the intersections analyzed during the study periods.
- Proposed lane modifications:
    - A protected left turn should be considered for the S. Hamilton Street & Highway I-86 EB Ramps intersection in the EB direction along S. Hamilton Street due to existing traffic restrictions.
    - Extending the left turn signal duration for the I-86 WB off-ramp. This will improve the overall lane LOS for both the No Build and Build Alternatives.

I. Introduction

Fagan Engineers (FE) was retained by the Village of Painted Post to conduct this Transportation Impact Study (TIS) for the proposed West Water Street Redevelopment Project in the Village of Painted Post, New York (see location map in Figure 1). The site is located at the west end of West Water Street.

A Draft Generic Environmental Impact Statement (DGEIS) is being prepared for the Village with the intention of repurposing and rehabilitating a cleared 49-acre parcel of former Ingersoll-Rand iron foundry facility. Through this DGEIS, three alternatives have been proposed; a No Build alternative, a 249,000 SF Alternative of Choice and a 352,800 SF Maximum Development Alternative. A Village owned rail siding and a Village Department of Public Works building are also located on the parcel.

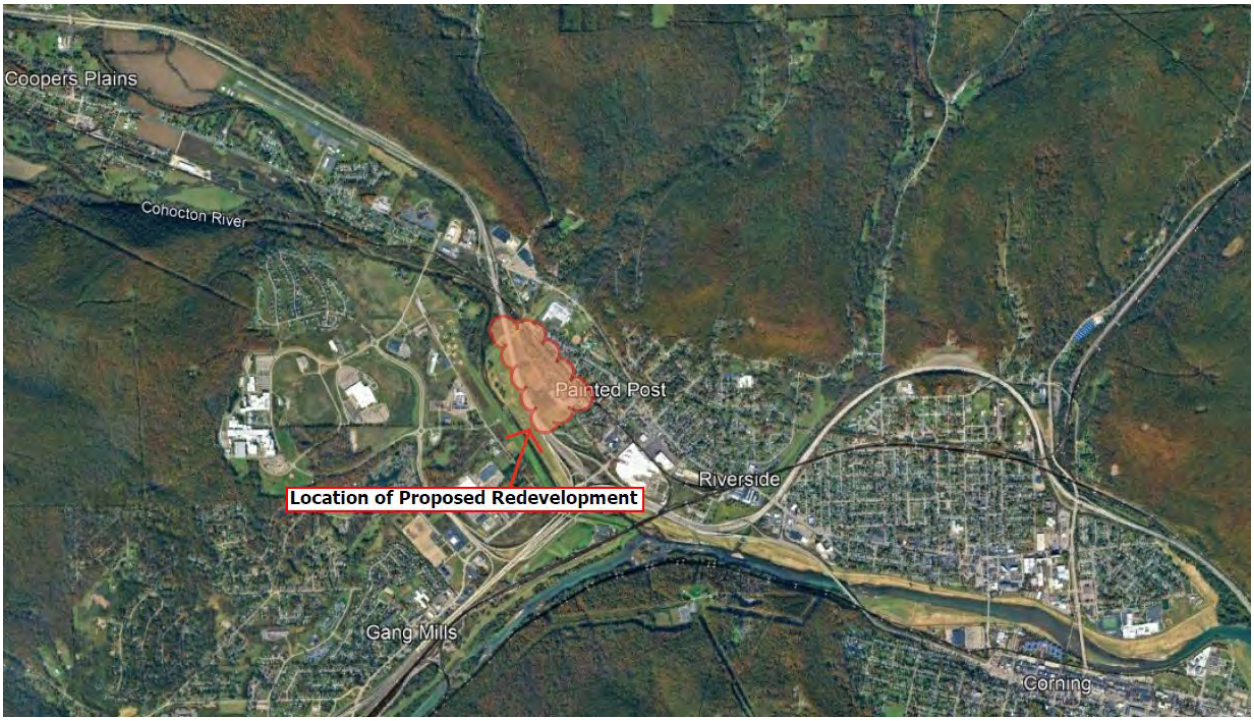

Figure 1: Project Location Map

Both proposed developments are variations of a business park with multiple structures composed of office and commercial buildings. See Figures 2 and 3 for concepts of each alternative considered. Both proposed facilities are anticipated to operate at 16-hour days (two shifts), five days a week.

There are 452 automobile parking spaces and 11 tractor trailer loading spaces proposed for the Alternative of Choice. There are 555 automobile parking spaces and 16 tractor trailer loading spaces proposed for the Maximum Development Alternative.

DENSITY TABLE

COMMERCIAL SPACE	249,000 SQ. FT.
VEHICLE PARKING SPACES	452
TRACTOR TRAILER LOADING SPACES	11

ALTERNATIVE OF CHOICE

0 200' 400'

Scale:	1" =200'
Date:	7/31/2025
Design By:	-
Drawn By:	MAB
Checked By:	-
Project No.:	2020.045.001
Drawing Name:	altofchoicelayout.dwg

WEST WATER STREET REDEVELOPMENT PROJECT

VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

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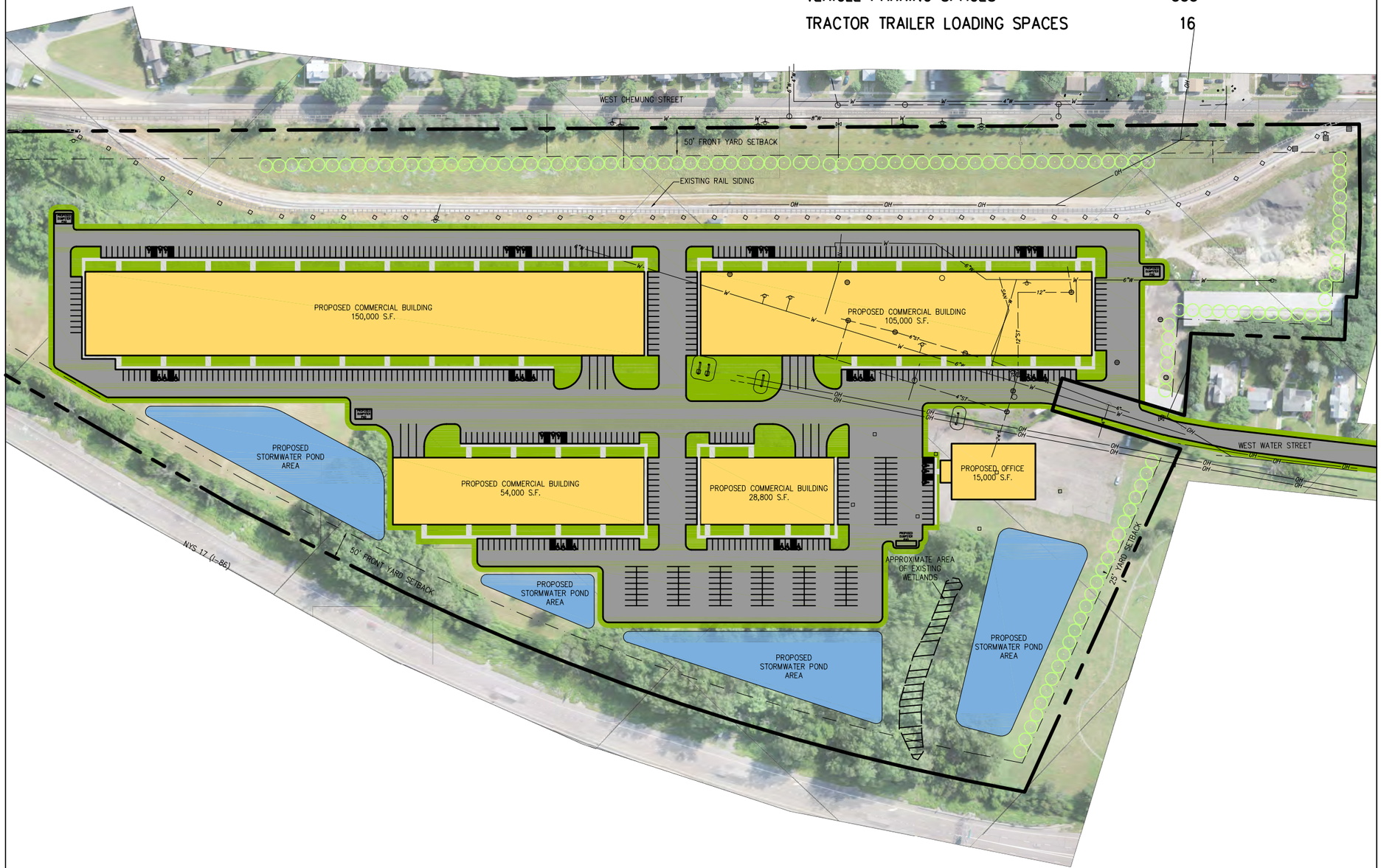
DENSITY TABLE

OFFICE SPACE	15,000 SQ. FT.
COMMERCIAL SPACE	337,800 SQ. FT.
VEHICLE PARKING SPACES	555
TRACTOR TRAILER LOADING SPACES	16



MAXIMUM BUILD ALTERNATIVE

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Drawn By:	MAB
Checked By:	-
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II. Facility Operation

Both proposed Alternatives are designed as business parks with commercial and office spaces distributed between several buildings across the project site. The following facility activity is expected based on the proposed design:

- Staff are expected to work two shifts, five days/week; Shift one – 7AM-3PM, Shift two – 3PM-11PM.
- Warehouse products will be transported to and from facility with tractor trailers loaded via the proposed loading spaces during operational hours.

III. Data Collection

Raw traffic counts were collected between the dates of 6/10/2025-6/24/2025. AM traffic data was collected between the hours of 7-9AM and PM traffic data was collected between 2-4PM to encompass school and work traffic. This data was then used to calculate the Peak Hour Traffic for AM and PM. Traffic counts were taken over several days at the following intersections:

- S. Hamilton Street & Highway I-86 EB Ramps
- N. Hamilton Street & Highway I-86 WB Ramps
- N. Hamilton Street & W. Water Street
- N. Hamilton Street & High Street
- Steuben Street & High Street
- Highway I-86 Ramps & W. Pulteney Street

Raw traffic counts are included in Appendix A of this report. The overall peak hour volume was then calculated by taking the most conservative directional volume and peak hour factor for each intersection.

IV. Existing Roadway Characteristics

Roadway characteristics for the study area are shown in the following table:

Roadway	**Pavement**		**Shoulders**	**Speed Limit (mph)**	**Roadway Class**
	Lanes	*Markings*			
W. Water Street	24’ 2 lane	Edge lines and parking lanes	8’ on street parking	25	Local Roads
N. Hamilton Street	24’-36’ 2-3 lanes	Edge lines and parking line	8’ on street parking, both sides	35	Major Collector

There are two signalized pedestrian crossings located at the intersection of N. Hamilton Street & W. Water Street.

The W. Water Street roadway starts at 48’ wide at the intersection with N. Hamilton Street and narrows to 20’ wide after the intersection with Charles Street. There is parking on both sides of the street. There are no bicycle facilities present throughout the study area.

V. Assessment Criteria

Highway Capacity Analyses in the assessment were performed based on the methodology defined in the Transportation Research Board, Highway Capacity Manual, HCM 2010, using Trafficware's Synchro 12 software. Traffic operations are represented by a Level of Service (LOS) which is defined in terms of delay. It is a qualitative measure of speed and travel time, freedom to maneuver, traffic interruptions, and driver comfort and convenience. It ranges from a LOS of A with little or no delay to a LOS of F where the available capacity is exceeded causing extreme delays.

VI. Existing Traffic Analysis

The turning movement counts were reviewed for individual intersection and system peak hours. Through movements at the system peak-hour volumes from intersection to intersection were within expected tolerances.

VII. Future No Build Traffic Analysis

VII.A. Traffic Projections

Future-year traffic projections were established through application of a 1.0 percent per year growth rate. The peak hour factors for the proposed traffic utilized the same peak hour factors as the existing traffic. It should be noted that traffic counts for the study intersections have actually decreased since the previous TIS performed for the project site (May 2020).

VII.B. Existing Traffic Condition (2025)

Existing traffic conditions were determined by using the most conservative directional traffic volumes and peak hour factors for each intersection split into AM and PM peak hour volumes. Figure 4 illustrates the existing traffic conditions.

VII.C. Background Traffic Condition (2030)

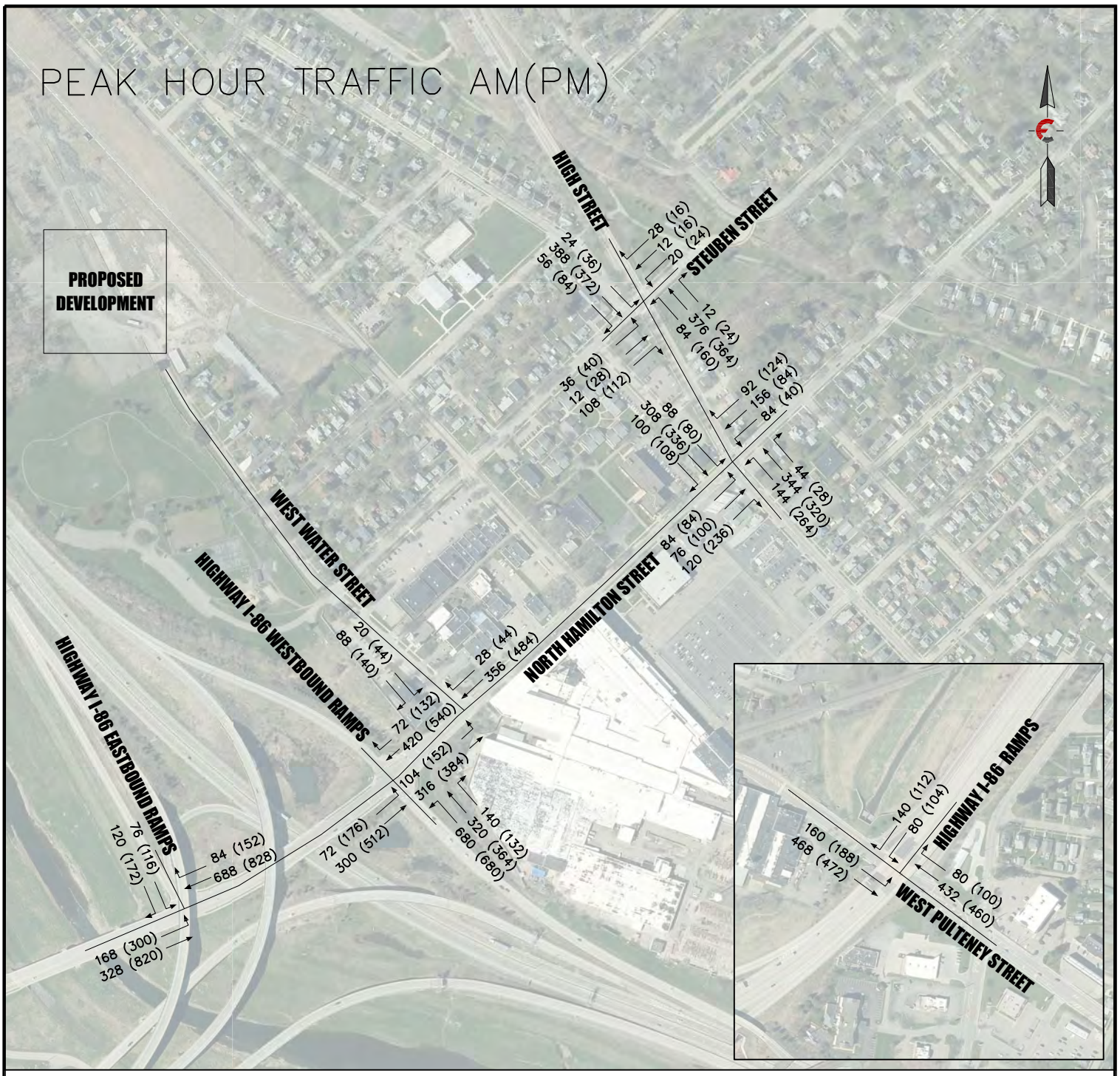
2030 traffic projections were determined by applying the growth rate to the existing conditions. Figures 5 illustrates the projected Year 2030 horizon year traffic projections for the no build scenario.

VIII. Development Analysis

Figures 2 and 3 illustrate the proposed site plan for each Alternative. The land-use for each development are 249,000 SF for the Alternative of Choice and 352,800 SF for the Maximum Development Alternative.

VIII.A. Trip Generation

The Institute of Transportation Engineers (ITE), Trip Generation Manual, 8th Edition was referenced to estimate the number of trips which could be generated by the proposed development. The average rates for ITE Land Use #770 Business Park were referenced to calculate trips for daily conditions and for the AM and PM peak hour of adjacent street traffic. These numbers are summarized in the tables below.



EXISTING TRAFFIC CONDITIONS (2025)

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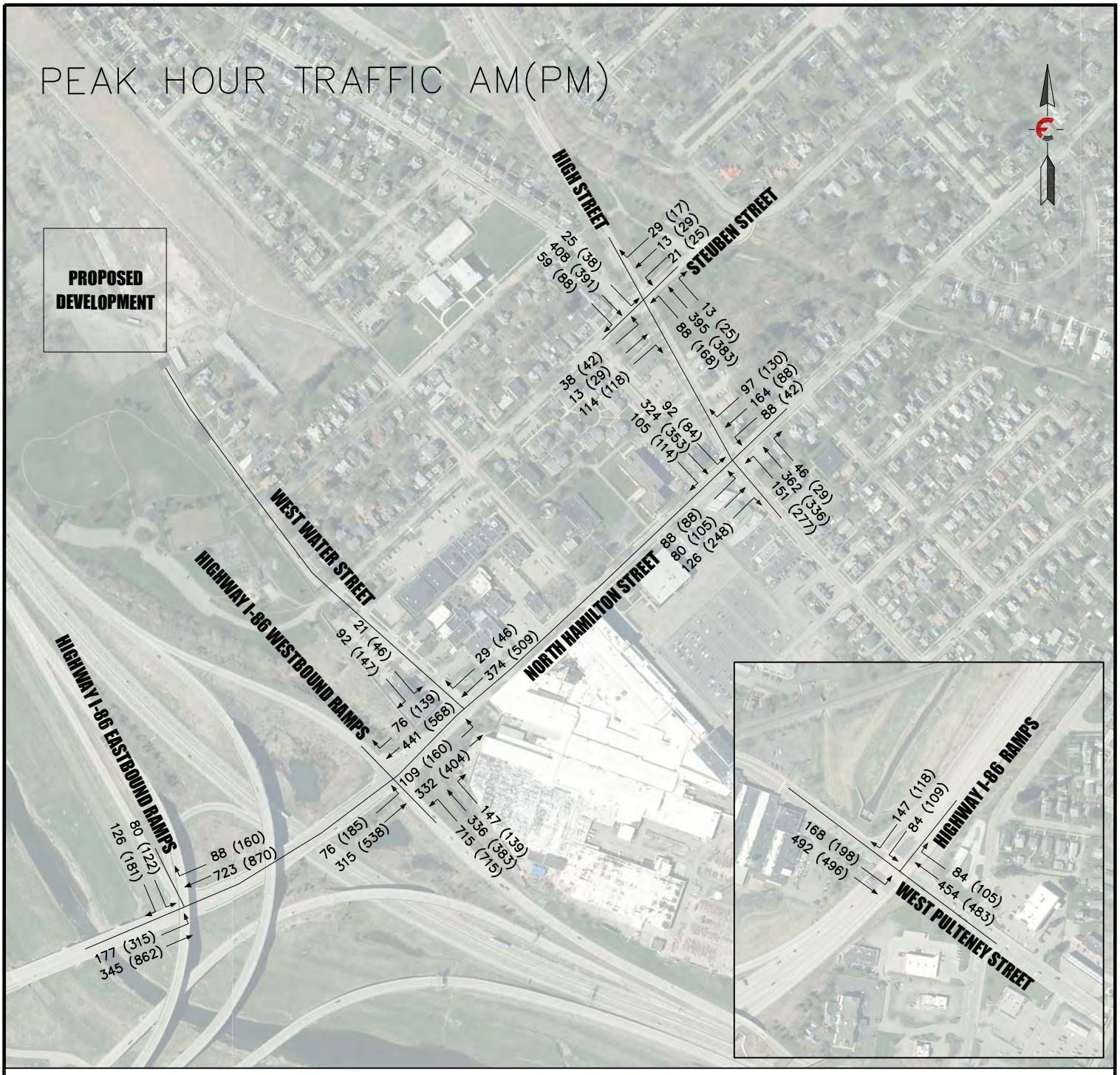

BACKGROUND CONDITION (2030)

0 500' 1000'

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The Alternative of Choice option would generate the following additional trip ends:

	AM Peak Hour	PM Peak Hour
Average Trip Ends	350	349
Entering	294	80
Exiting	56	269

The Maximum Development Alternative option would generate the following additional trip ends:

	AM Peak Hour	PM Peak Hour
Average Trip Ends	492	481
Entering	413	111
Exiting	79	371

Staff are expected to work two shifts, five days/week; Shift One: 7AM-3PM, Shift Two: 3PM-11PM with products to be transported to and from facility with tractor trailers loaded via the proposed loading spaces during operational hours. The projected truck trips are going to occur throughout the day so there is not an overload of truck traffic through the neighborhood.

VIII.B. Trip Distribution

The distribution of new trips generated by the proposed Alternatives was based on the proximity of nearby populations and the expected route taken to get to the proposed development. Figures 6 and 7 illustrate the anticipated distribution of entering and exiting traffic during AM and PM conditions.

VIII.C. Traffic Assignment

Figures 8-11 demonstrate the new trip assignments for each proposed Alternative. This traffic assignment was calculated by multiplying the entering/existing distribution by the anticipated new trip generation.

VIII.D. Developed Conditions

Figures 12 and 13 depict the expected total traffic encompassing the 2030 background condition with the added trips generated by the proposed developments. This provides a conservative estimation of the expected traffic conditions with the fully developed scenarios.

NEW TRIP DISTRIBUTION (AM)

OVERALL
ENTERING - 85%
EXITING - 15%

0 500' 1000'

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Drawing Name:	trafficstudy-tripdistribution-am.dwg

OVERALL
ENTERING - 20%
EXITING - 80%

NEW TRIP DISTRIBUTION (PM)

0 500' 1000'

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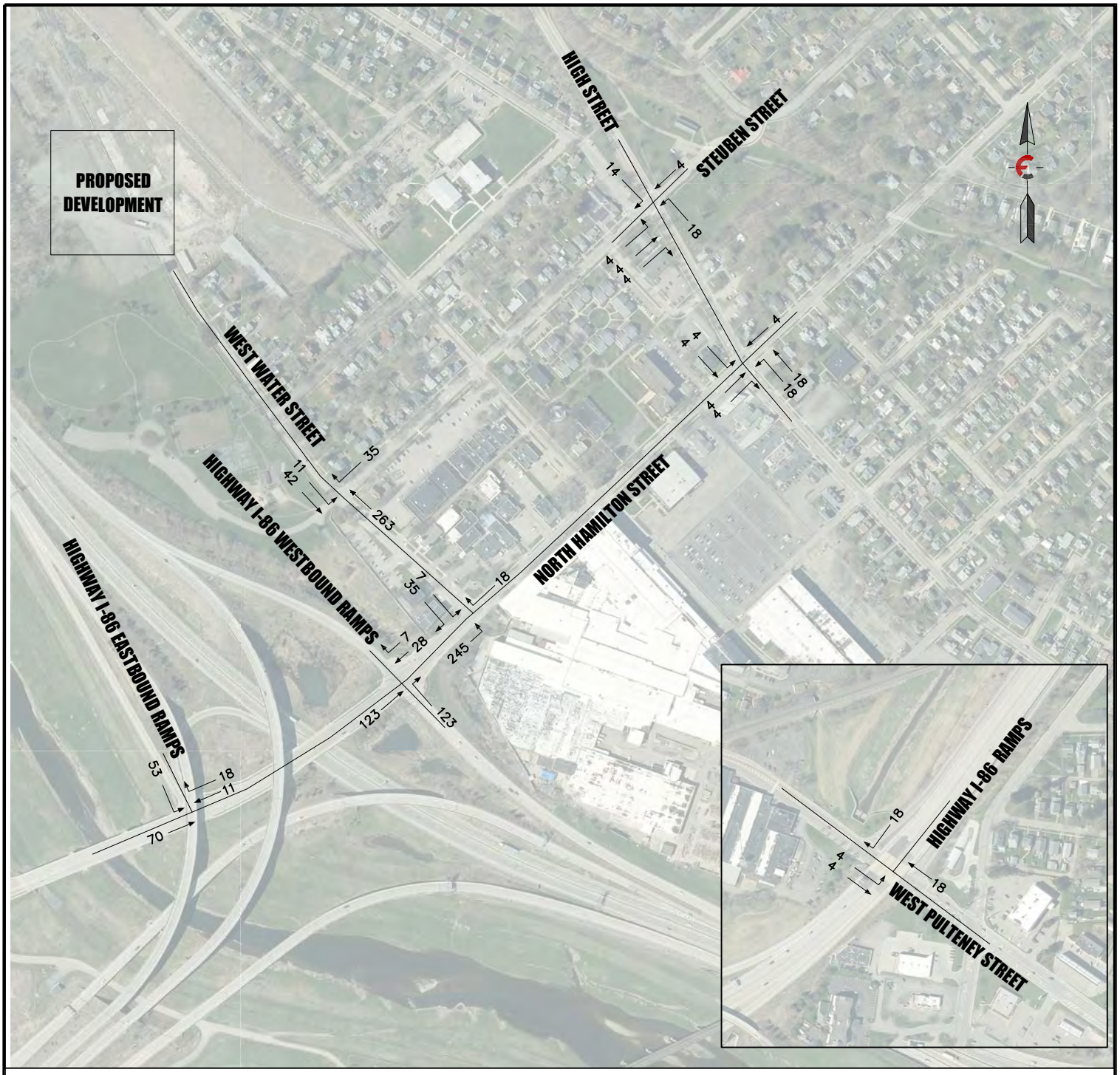

ALTERNATIVE OF CHOICE - TRIP GENERATION (AM)

OVERALL
ENTERING - 85%
EXITING - 15%

0 500' 1000'

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Drawing Name:	trafficstudy-tripgeneration-altofchoice-am.dwg

OVERALL
ENTERING - 20%
EXITING - 80%

ALTERNATIVE OF CHOICE - TRIP GENERATION (PM)

0 500' 1000'

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MAXIMUM DEVELOPMENT ALTERNATIVE - TRIP GENERATION (AM)

OVERALL
ENTERING - 85%
EXITING - 15%

0 500' 1000'

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Drawing Name:	trafficstudy-tripgeneration-maxbuild-am.dwg

MAXIMUM DEVELOPMENT ALTERNATIVE - TRIP GENERATION (PM)

OVERALL
ENTERING - 20%
EXITING - 80%

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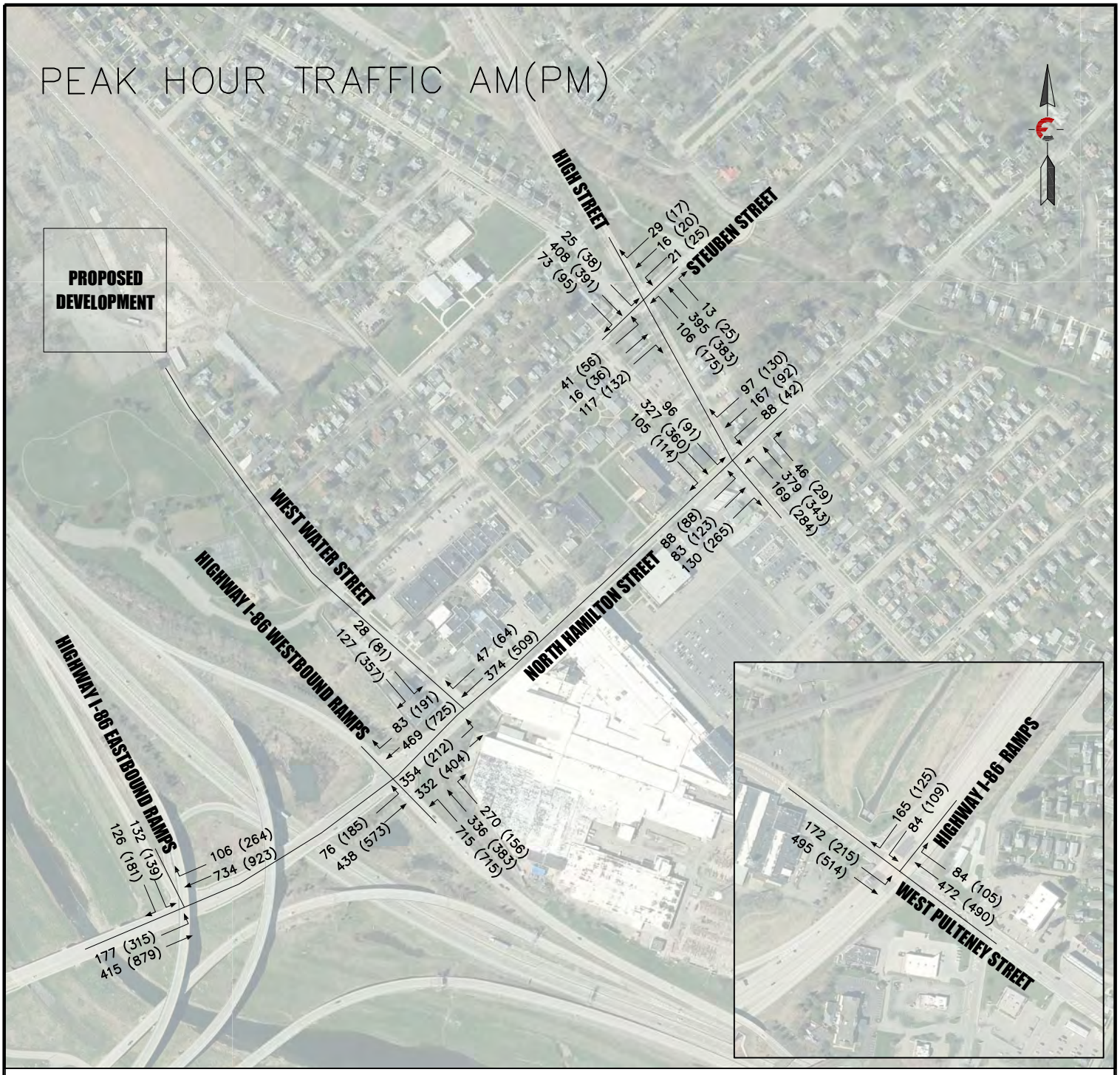

ALTERNATIVE OF CHOICE (2030)

0 500' 1000'

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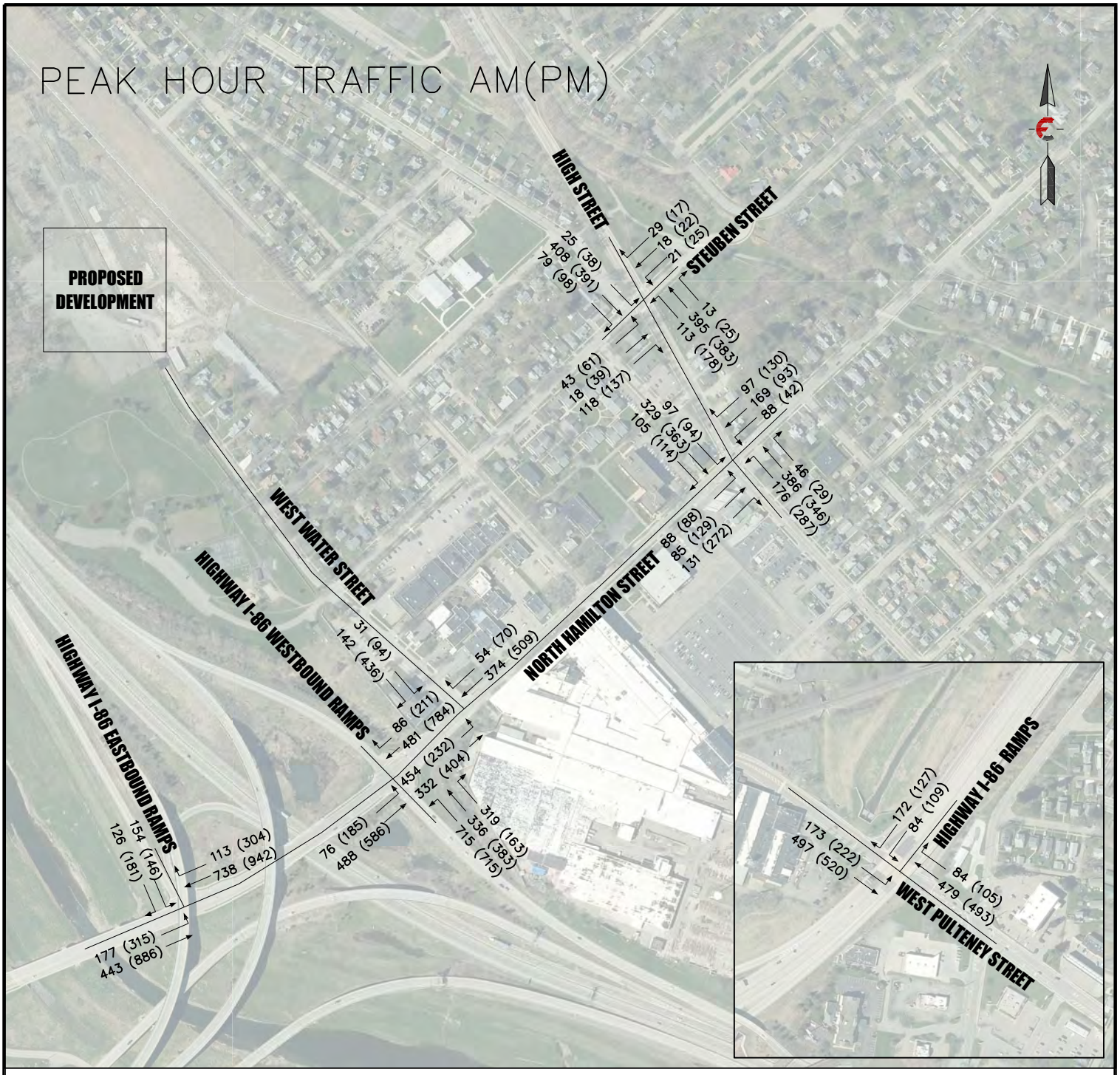

MAXIMUM DEVELOPMENT ALTERNATIVE (2030)

0 500' 1000'

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Drawing Name:	trafficstudy-maxbuild-2030.dwg

IX. Level of Service (LOS) Requirements

The tables below provide a summary of overall intersection LOS estimates. A review of the intersection LOS and delay between the no-build and build scenarios for the existing and future conditions suggests the following:

- The only decrease in LOS over any intersection between the 2030 Background Condition and the developed Alternatives would be from a level A (free flow) to a level B (stable flow with unaffected speed).

AM Intersection LOS				
	Existing Condition (2025)	**Background Condition (2030)**	**Alternative of Choice (2030)**	**Maximum Development Alternative (2030)**
I-86 Exit 44/S. Hamilton	A	A	B	B
I-86 Exit 44/N. Hamilton	C	C	C	C
N. Hamilton/W. Water	A	A	A	B
High St./Steuben St. (ICU)	A	A	A	B
High St./N. Hamilton	B	B	B	B
Pulteney/Exit 45 Off-Ramp	B	B	B	B
Pulteney/Exit 45 On-Ramp	A	A	B	B

PM Intersection LOS				
	Existing Condition (2025)	**Background Condition (2030)**	**Alternative of Choice (2030)**	**Maximum Development Alternative (2030)**
I-86 Exit 44/S. Hamilton	B	C	C	C
I-86 Exit 44/N. Hamilton	C	C	C	C
N. Hamilton/W. Water	A	A	B	B
High St./Steuben St. (ICU)	B	B	B	B
High St./N. Hamilton	C	C	C	C
Pulteney/Exit 45 Off-Ramp	B	B	B	B
Pulteney/Exit 45 On-Ramp	A	B	B	B

X. Queue Length Analysis

Appendix B provides a summary table and reports produced through Synchro 12 depicting the LOS of each intersection and turns and how it changes with each development scenario and traffic growth rate.

Issues were noted as follows:

- The intersection of S. Hamilton Street & Highway I-86 EB Ramps is showing a drop from an LOS of D to F for the EB Hamilton left turn approach during PM conditions due to the lack of a protected left turn phase. Although the LOS worsens with the development scenarios, the existing 2030 condition demonstrates unstable flow with considerable delay with no development in place.
- The intersection of N. Hamilton Street & Highway I-86 WB Ramps is showing a drop in LOS for the Exit 44 NB left turn between the no build and build conditions.

XI. Suggested Mitigation

It is recommended that the NYSDOT should:

- Evaluate a protected left turn phase at the intersection of S. Hamilton Street & Highway I-86 EB Ramps. There is a significant quantity of left turning traffic accumulated during the PM peak hour.
- Extend the left turn signal duration for the I-86 WB off-ramp. An evaluation of the Exit 44 NB left turn timing demonstrates an improvement in lane LOS when the signal is extended from the current 30-second interval to 45-seconds for both the No Build and Build Alternatives.

XII. Conclusions

The purpose of this Traffic Impact Study (TIS) is to analyze potential impacts of the new traffic generated by the West Water Street Redevelopment Project in the Village of Painted Post, New York.

Through this DGEIS, three alternatives have been proposed; a No Build alternative, a 249,000 SF Alternative of Choice and a 352,800 SF Maximum Development Alternative. Parking for the proposed facilities will vary with 452 automobile parking spaces and 11 tractor trailer loading spaces proposed for the Alternative of Choice. There are 555 automobile parking spaces and 16 tractor trailer loading spaces proposed for the Maximum Development Alternative.

The completed TIS has determined:

- The TIS was performed in accordance with ITE industry standards. The following is a list of intersections that were evaluated:
    - S. Hamilton Street & Highway I-86 EB Ramps
    - N. Hamilton Street & Highway I-86 WB Ramps
    - N. Hamilton Street & W. Water Street
    - N. Hamilton Street & High Street
    - Steuben Street & High Street
    - Highway I-86 Ramps & W. Pulteney Street
- Site access would occur via West Water Street, the street terminates at the site entrance.
- The Alternative of Choice option would generate the following additional trip ends:

	AM Peak Hour	PM Peak Hour
Average Trip Ends	350	349
Entering	294	80
Exiting	56	269

- The Maximum Development Alternative option would generate the following additional trip ends:

	AM Peak Hour	PM Peak Hour
Average Trip Ends	492	481
Entering	413	111
Exiting	79	371

- New traffic associated with the proposed development would not cause a significant impact on level-of-service for any of the intersections analyzed during the study.
- Proposed lane modifications:
    - A protected left turn should be considered for the S. Hamilton Street & Highway I-86 EB Ramps intersection in the EB direction along S. Hamilton Street due to existing traffic restrictions.

- Extending the left turn signal duration for the I-86 WB off-ramp. This will improve the overall lane LOS for both the No Build and Build Alternatives.

APPENDIX A

FIGURES
AND
TRIP GENERATION

Alt of Choice

Square Footage 249000

	AM	PM
Average Trip Ends	350	349
Entering	294	80
Exiting	56	269

Business Park AM

Ln(T) = 0.98 Ln(X) + 0.45

X = 1000 SF Gross Floor Area

T = Average Vehicle Trip Ends

Directional Distribution

Entering	84%
Exiting	16%

** Information sourced from ITE 8th Edition Trip Generation Manual*

Maximum Build

Square Footage 352800

	AM	PM
Average Trip Ends	492	481
Entering	413	111
Exiting	79	371

Business Park PM

Ln(T) = 0.92 Ln(X) + 0.78

X = 1000 SF Gross Floor Area

T = Average Vehicle Trip Ends

Directional Distribution

Entering	23%
Exiting	77%

DENSITY TABLE

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TRACTOR TRAILER LOADING SPACES	11

ALTERNATIVE OF CHOICE

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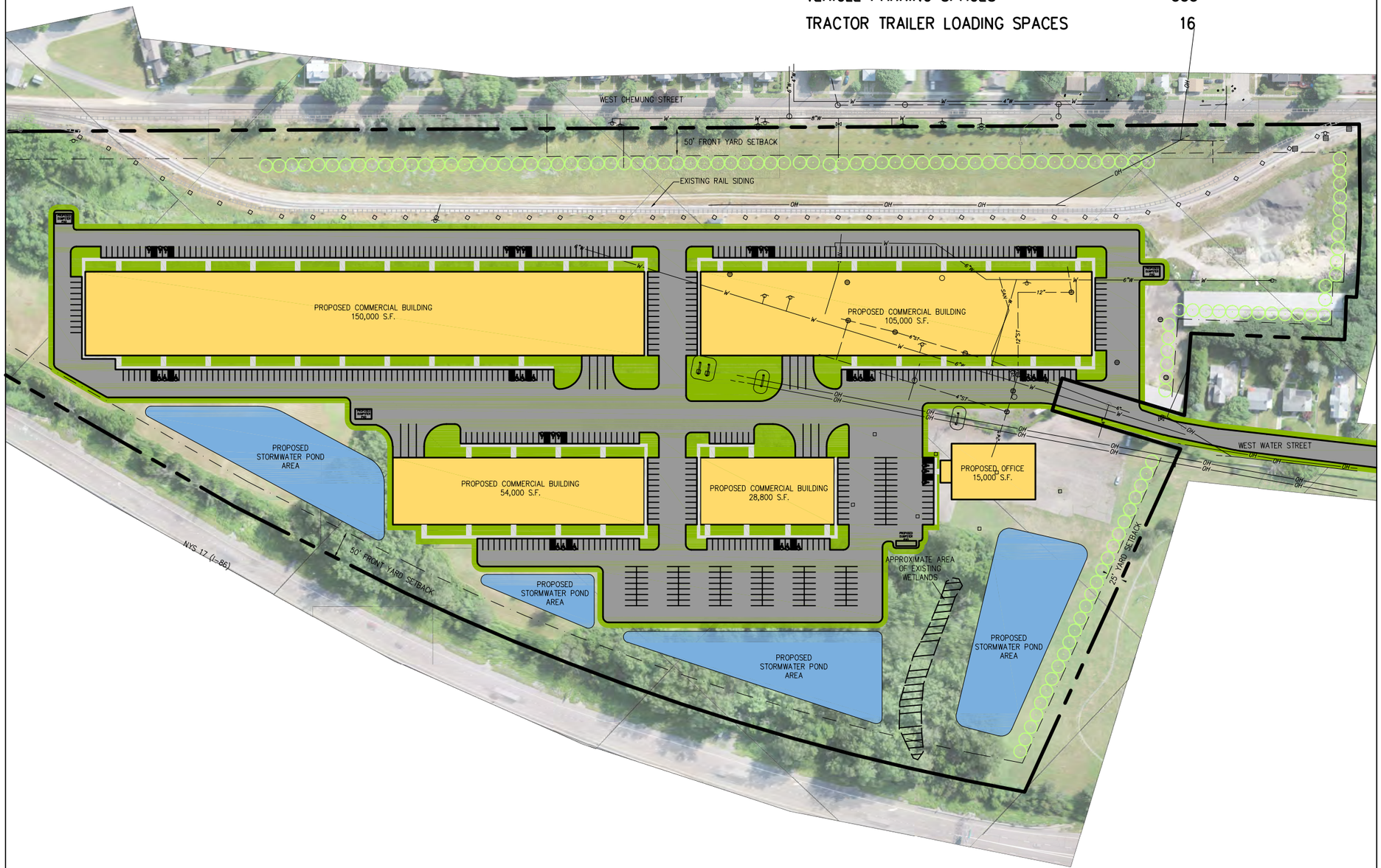

MAXIMUM BUILD ALTERNATIVE

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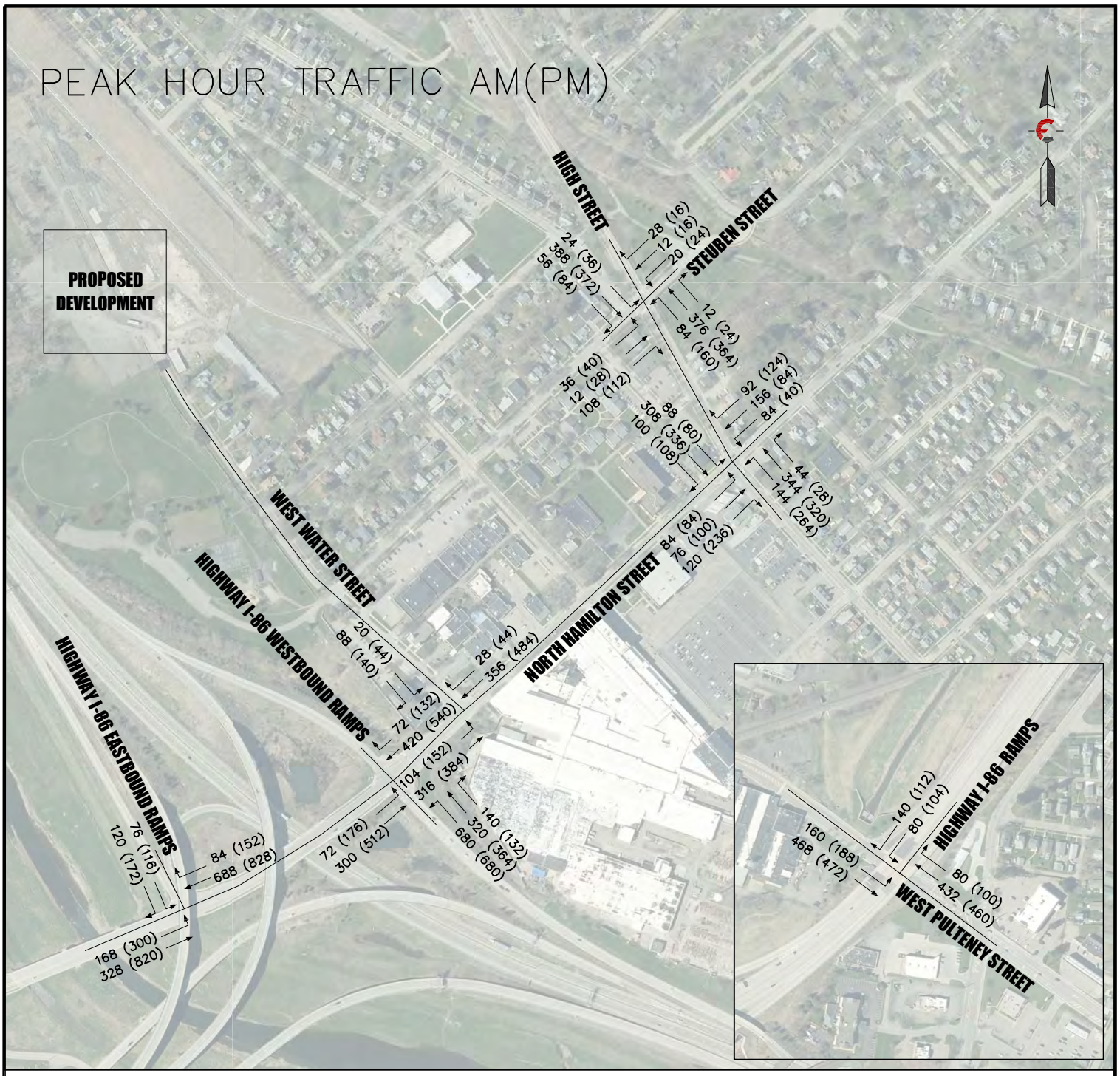

EXISTING TRAFFIC CONDITIONS (2025)

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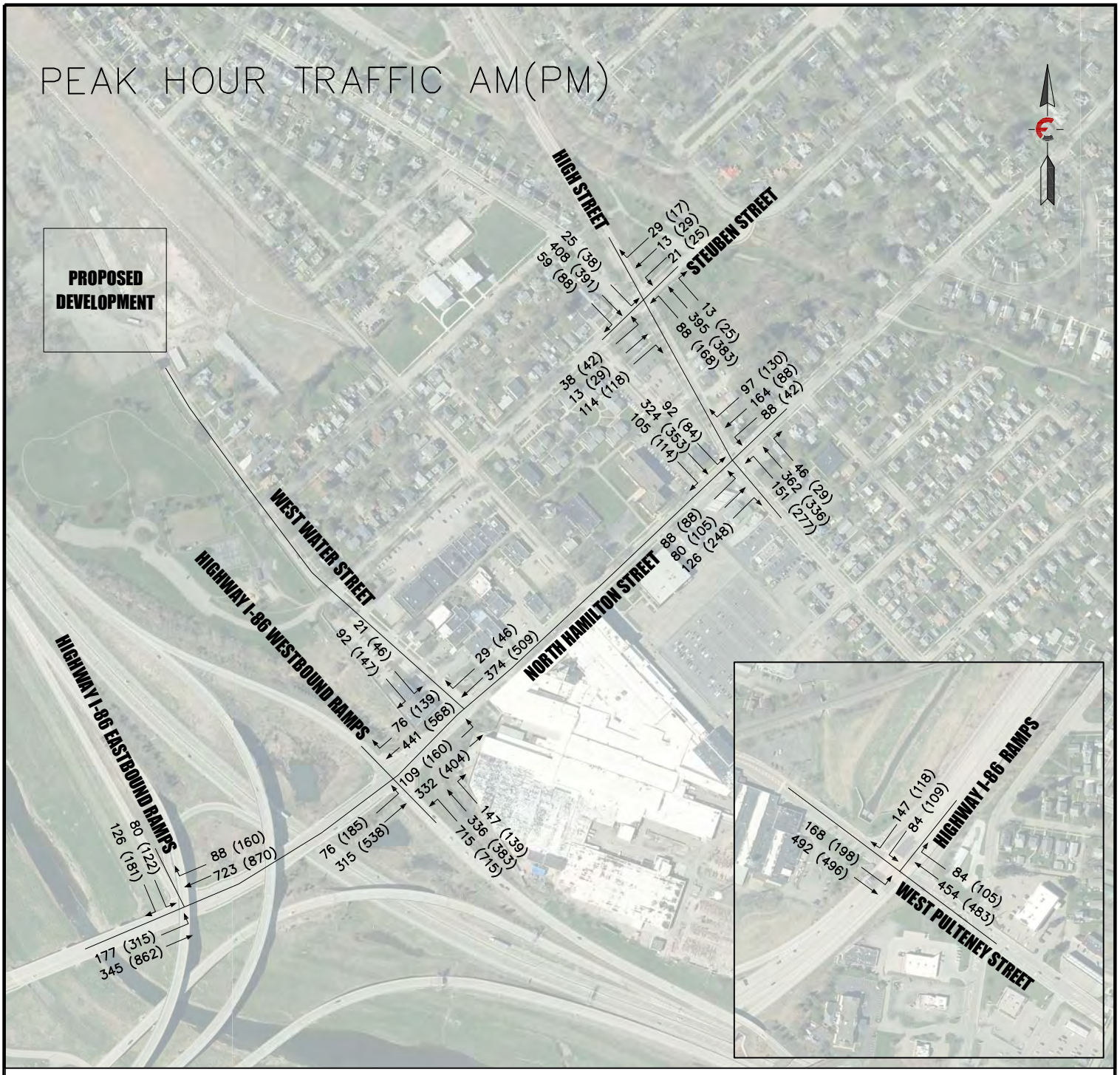

BACKGROUND CONDITION (2030)

0 500' 1000'

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NEW TRIP DISTRIBUTION (AM)

OVERALL
ENTERING - 85%
EXITING - 15%

0 500' 1000'

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Checked By:	-
Project No.:	2020.045.001
Drawing Name:	trafficstudy-tripdistribution-am.dwg

OVERALL
ENTERING - 20%
EXITING - 80%

NEW TRIP DISTRIBUTION (PM)

0 500' 1000'

FAGAN ENGINEERS
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Fax (607) 734-2169
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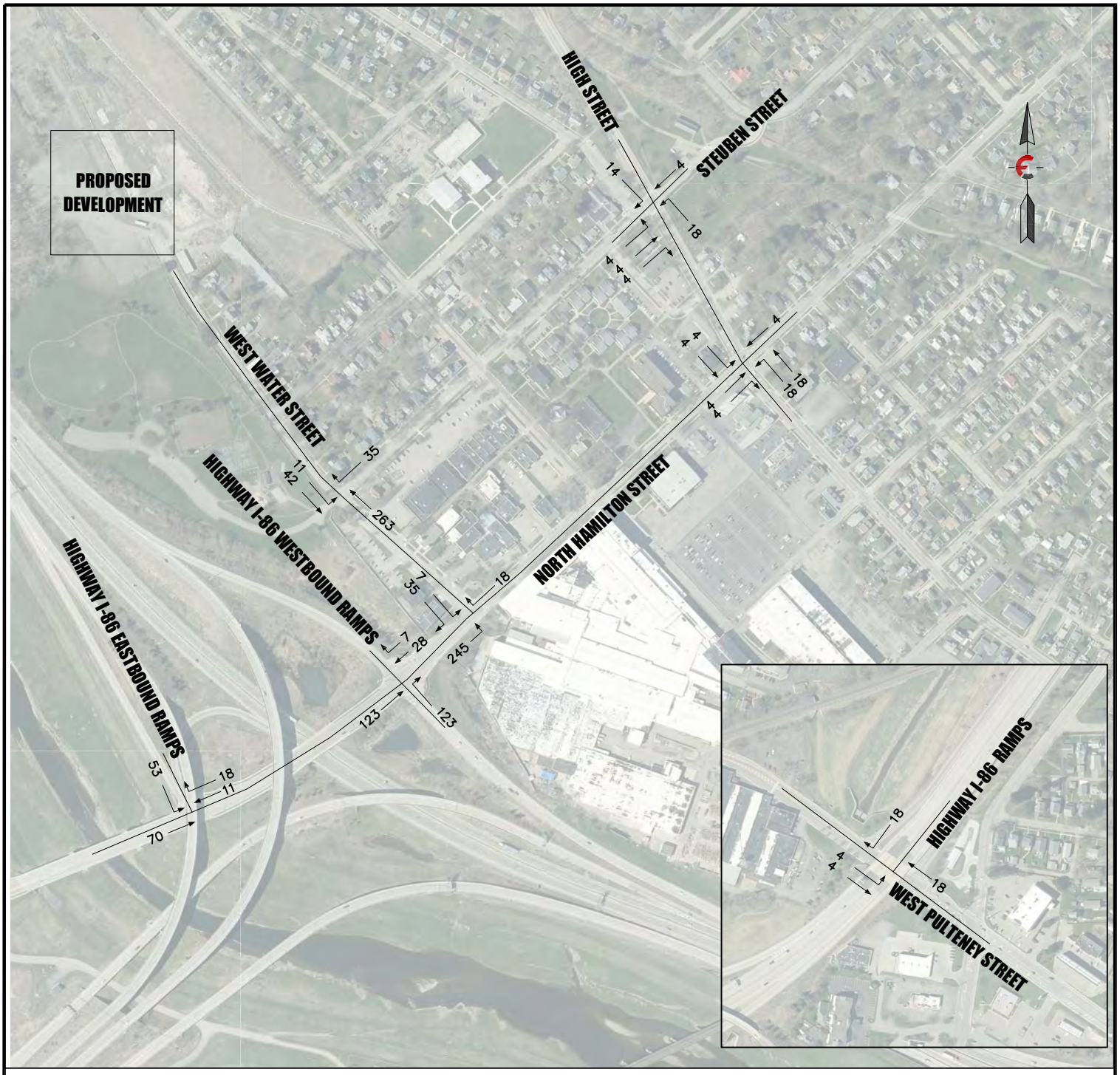
WEST WATER STREET REDEVELOPMENT PROJECT

VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

Scale:	1" = 500'
Date:	7/28/2025
Design By:	-
Drawn By:	MAB
Checked By:	-
Project No.:	2020.045.001
Drawing Name:	trafficstudy-tripdistribution-pm.dwg



ALTERNATIVE OF CHOICE - TRIP GENERATION (AM)

OVERALL
ENTERING - 85%
EXITING - 15%

0 500' 1000'

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WEST WATER STREET REDEVELOPMENT PROJECT

VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

Scale:	1" = 500'
Date:	7/28/2025
Design By:	-
Drawn By:	MAB
Checked By:	-
Project No.:	2020.045.001
Drawing Name:	trafficstudy-tripgeneration-altofchoice-am.dwg

OVERALL
ENTERING - 20%
EXITING - 80%

ALTERNATIVE OF CHOICE - TRIP GENERATION (PM)

0 500' 1000'

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WEST WATER STREET REDEVELOPMENT PROJECT

VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

Scale:	1" = 500'
Date:	7/28/2025
Design By:	-
Drawn By:	MAB
Checked By:	-
Project No.:	2020.045.001
Drawing Name:	trafficstudy-tripgeneration-altofchoice-pm.dwg

MAXIMUM DEVELOPMENT ALTERNATIVE - TRIP GENERATION (AM)

OVERALL
ENTERING - 85%
EXITING - 15%

0 500' 1000'

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WEST WATER STREET REDEVELOPMENT PROJECT

VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

Scale:	1" = 500'
Date:	7/28/2025
Design By:	-
Drawn By:	MAB
Checked By:	-
Project No.:	2020.045.001
Drawing Name:	trafficstudy-tripgeneration-maxbuild-am.dwg

MAXIMUM DEVELOPMENT ALTERNATIVE - TRIP GENERATION (PM)

OVERALL
ENTERING - 20%
EXITING - 80%

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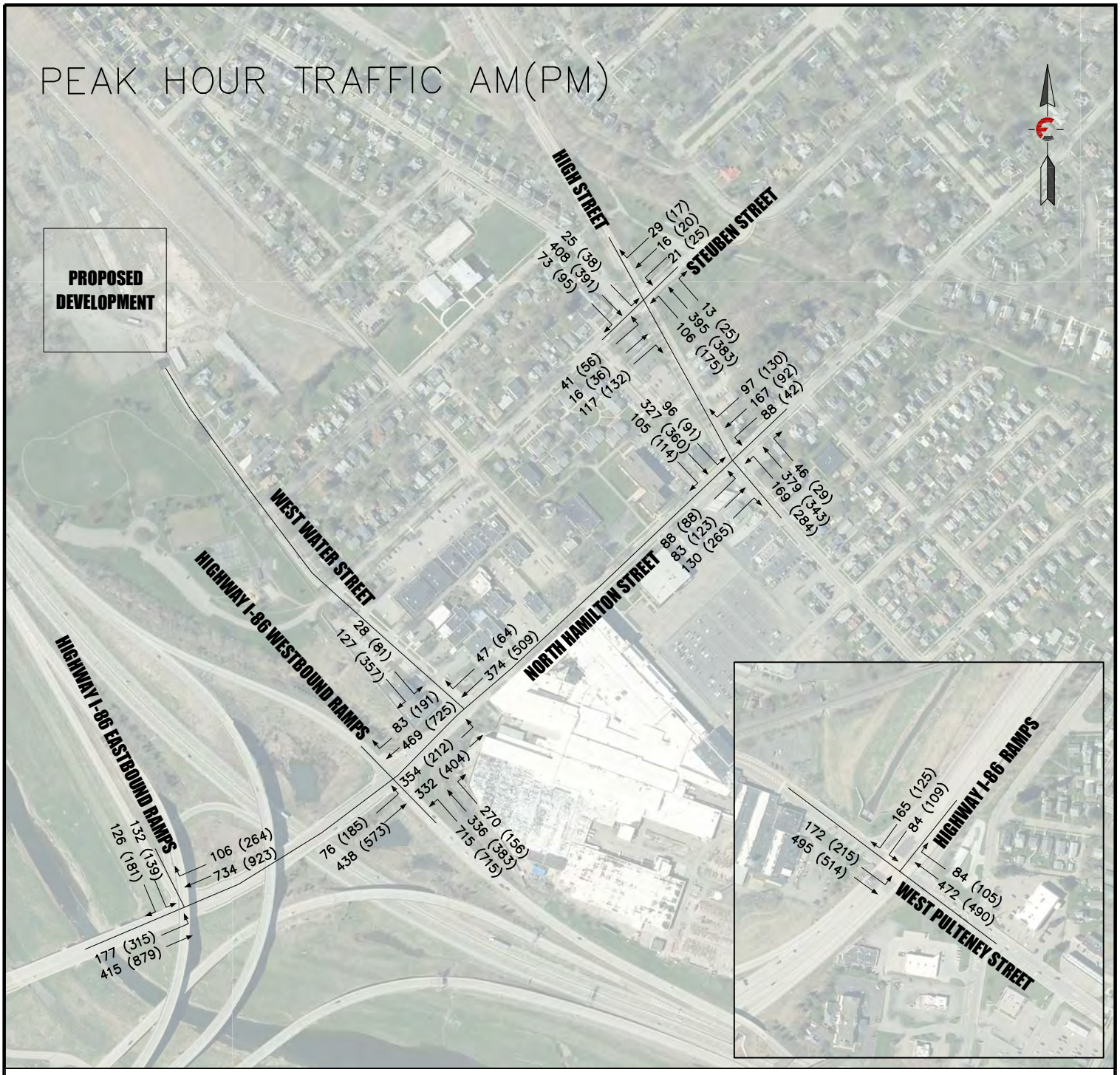
WEST WATER STREET REDEVELOPMENT PROJECT

VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

Scale:	1" = 500'
Date:	7/28/2025
Design By:	-
Drawn By:	MAB
Checked By:	-
Project No.:	2020.045.001
Drawing Name:	trafficstudy-tripgeneration-maxbuild-pm.dwg



ALTERNATIVE OF CHOICE (2030)

0 500' 1000'

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WEST WATER STREET REDEVELOPMENT PROJECT

VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

Scale:	1"=500'
Date:	7/28/2025
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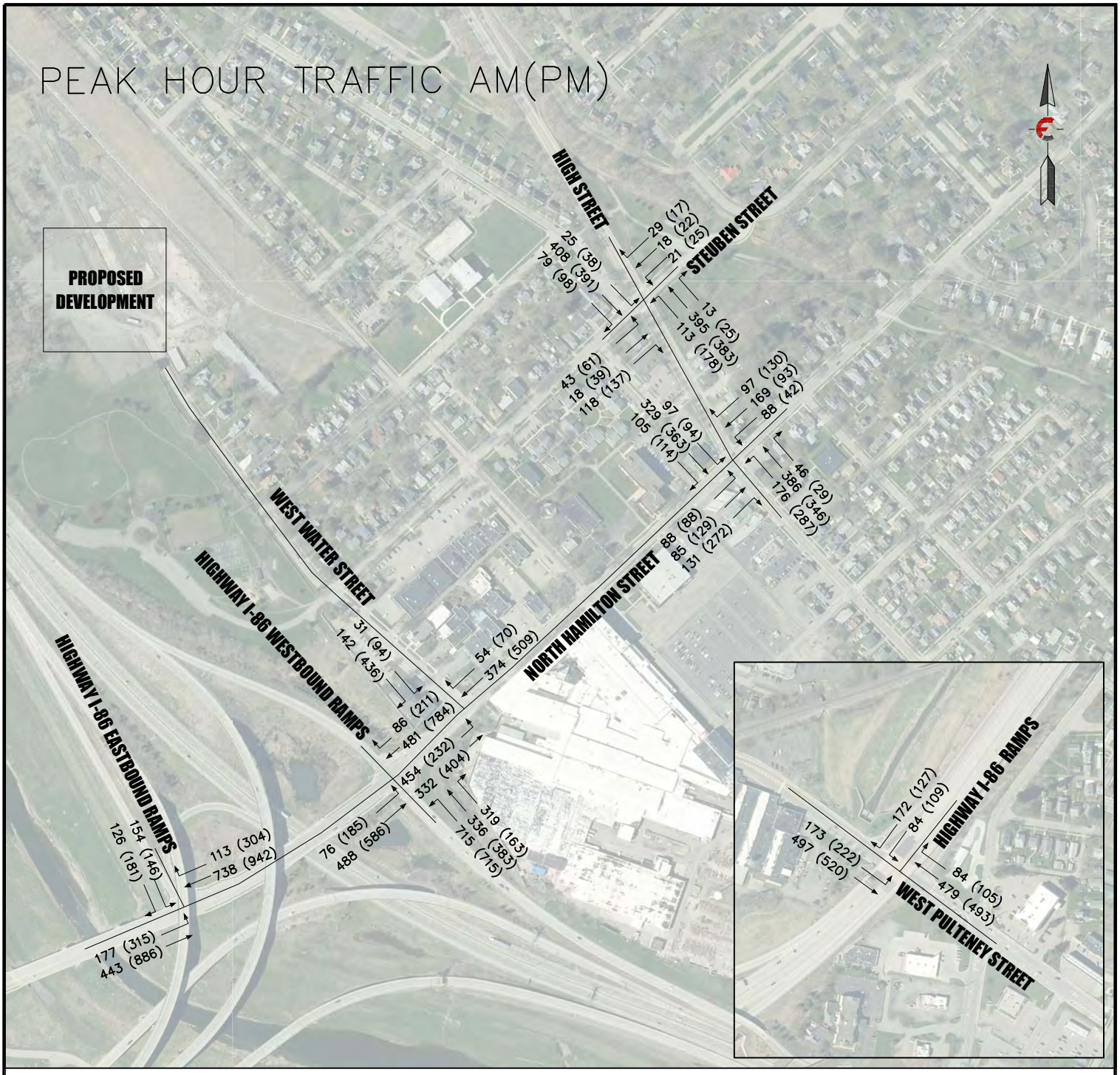

MAXIMUM DEVELOPMENT ALTERNATIVE (2030)

0 500' 1000'

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WEST WATER STREET REDEVELOPMENT PROJECT

VILLAGE OF PAINTED POST, STEUBEN COUNTY, NEW YORK

Scale:	1"=500'
Date:	7/28/2025
Design By:	-
Drawn By:	MAB
Checked By:	-
Project No.:	2020.045.001
Drawing Name:	trafficstudy-maxbuild-2030.dwg

APPENDIX B

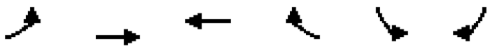
LOS SUMMARY
AND
SYNCHRO RESULTS

AM Intersection LOS				
	Existing Condition (2025)	Background Condition (2030)	Alternative of Choice (2030)	Maximum Development Alternative (2030)
I-86 Exit 44/S. Hamilton	A	A	B	B
I-86 Exit 44/N. Hamilton	C	C	C	C
N. Hamilton/W. Water	A	A	A	B
High St./Steuben St. (ICU)	A	A	A	B
High St./N.Hamilton	B	B	B	B
Pulteney/Exit 45 Off-Ramp	B	B	B	B
Pulteney/Exit 45 On-Ramp	A	A	B	B

PM Intersection LOS				
	Existing Condition (2025)	Background Condition (2030)	Alternative of Choice (2030)	Maximum Development Alternative (2030)
I-86 Exit 44/S. Hamilton	B	C	C	C
I-86 Exit 44/N. Hamilton	C	C	C	C
N. Hamilton/W. Water	A	A	B	B
High St./Steuben St. (ICU)	B	B	B	B
High St./N.Hamilton	C	C	C	C
Pulteney/Exit 45 Off-Ramp	B	B	B	B
Pulteney/Exit 45 On-Ramp	A	B	B	B

AM	Existing Condition (2025)	Background Condition (2030)	Alternative of Choice (2030)	Maximum Development Alternative (2030)
Pulteney/Exit 45 Off-Ramp				
Exit 45 WB Left	B	B	B	B
Exit 45 WB Right	A	A	A	A
Pulteney EB Left				
Pulteney EB Thru	B	B	B	B
Pulteney WB Thru	A	A	A	A
Pulteney WB Right				
Pulteney/Exit 45 On-Ramp				
Exit 45 WB Left				
Exit 45 WB Right				
Pulteney EB Left	A	A	A	A
Pulteney EB Thru	A	A	A	A
Pulteney WB Thru	C	C	C	C
Pulteney WB Right	A	A	A	A
Exit 44/S. Hamilton				
Exit 44 SB Left	B	B	C	C
Exit 44 SB Right				
S. Hamilton EB Left	A	B	B	B
S. Hamilton EB Thru	A	A	A	A
S. Hamilton WB Thru	A	A	A	A
S. Hamilton WB Right	A	A	A	A
Exit 44/N. Hamilton				
Exit 44 NB Left	D	D	E	E
Exit 44 NB Thru	C	D	D	D
Exit 44 NB Right				
N. Hamilton EB Left	A	A	A	A
N. Hamilton EB Thru	B	B	B	B
N. Hamilton WB Thru	B	B	B	B
N. Hamilton WB Right	A	A	A	A
N. Hamilton/W. Water				
N. Hamilton NB Left	A	A	A	B
N. Hamilton NB Thru	A	A	A	A
N. Hamilton SB Thru	A	A	A	A
N. Hamilton SB Right				
W. Water EB Left	C	C	C	C
W Water EB Right	A	B	B	B
High St./N.Hamilton				
High St NB Left	A	A	A	A
High St NB Thru	A	A	A	A
High St NB Right				
High St SB Left	B	B	B	B
High St SB Thru	B	B	B	B
High St SB Right				
N. Hamilton EB Left	D	D	D	D
N. Hamilton EB Thru	C	C	C	C
N. Hamilton EB Right				
N. Hamilton WB Left	C	D	D	D
N. Hamilton WB Thru	D	D	D	D
N. Hamilton WB Right				

PM	Existing Condition (2025)	Background Condition (2030)	Alternative of Choice (2030)	Maximum Development Alternative (2030)
Pulteney/Exit 45 Off-Ramp				
Exit 45 WB Left	B	B	B	B
Exit 45 WB Right	A	A	A	A
Pulteney EB Left				
Pulteney EB Thru	B	B	B	B
Pulteney WB Thru	A	A	A	A
Pulteney WB Right				
Pulteney/Exit 45 On-Ramp				
Exit 45 WB Left				
Exit 45 WB Right				
Pulteney EB Left	A	A	A	A
Pulteney EB Thru	A	A	A	A
Pulteney WB Thru	C	C	C	C
Pulteney WB Right	A	A	A	A
Exit 44/S. Hamilton				
Exit 44 SB Left	C	C	C	C
Exit 44 SB Right				
S. Hamilton EB Left	D	E	F	F
S. Hamilton EB Thru	B	C	C	C
S. Hamilton WB Thru	A	A	B	B
S. Hamilton WB Right	A	A	A	A
Exit 44/N. Hamilton				
Exit 44 NB Left	D	E	E	E
Exit 44 NB Thru	D	D	D	D
Exit 44 NB Right				
N. Hamilton EB Left	B	B	B	B
N. Hamilton EB Thru	B	B	B	B
N. Hamilton WB Thru	C	C	C	C
N. Hamilton WB Right	A	A	A	A
N. Hamilton/W. Water				
N. Hamilton NB Left	A	A	A	A
N. Hamilton NB Thru	A	A	A	A
N. Hamilton SB Thru	A	A	B	B
N. Hamilton SB Right				
W. Water EB Left	C	C	C	C
W Water EB Right	B	B	B	B
High St./N.Hamilton				
High St NB Left	A	B	B	B
High St NB Thru	A	A	A	A
High St NB Right				
High St SB Left	B	B	C	C
High St SB Thru	C	C	C	C
High St SB Right				
N. Hamilton EB Left	D	D	C	C
N. Hamilton EB Thru	C	D	D	D
N. Hamilton EB Right				
N. Hamilton WB Left	D	D	D	D
N. Hamilton WB Thru	C	C	C	C
N. Hamilton WB Right				

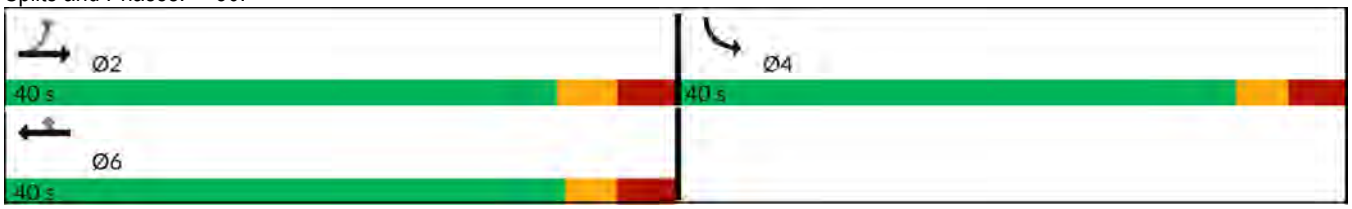


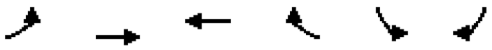
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	168	328	688	84	76	120
Future Volume (vph)	168	328	688	84	76	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415			130	0	0
Storage Lanes	0			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850	0.917	
Flt Protected	0.950				0.981	
Satd. Flow (prot)	1770	1863	3539	1583	1676	0
Flt Permitted	0.390				0.981	
Satd. Flow (perm)	726	1863	3539	1583	1676	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				84	120	
Link Speed (mph)		35	35		35	
Link Distance (ft)		572	399		208	
Travel Time (s)		11.1	7.8		4.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	168	328	688	84	76	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	168	328	688	84	196	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	0	0	0	0	1	
Detector Template					Left	
Leading Detector (ft)	0	0	0	0	50	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)					0	
Detector 1 Size(ft)					50	
Detector 1 Type					Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)					0.0	
Detector 1 Queue (s)					0.0	
Detector 1 Delay (s)					0.0	
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	1.0	1.0	1.0	1.0	6.0	
Minimum Split (s)	25.0	25.0	41.5	41.5	24.5	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	33.0	33.0	33.5	33.5	33.5	
Yellow Time (s)	3.6	3.6	3.1	3.1	3.1	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	Max	Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Don't Walk (s)	11.0	11.0	28.0	28.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	37.8	37.8	38.3	38.3	8.7	
Actuated g/C Ratio	0.63	0.63	0.64	0.64	0.14	
v/c Ratio	0.37	0.28	0.30	0.08	0.57	
Control Delay (s/veh)	9.2	6.3	5.7	1.8	16.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	9.2	6.3	5.7	1.8	16.4	
LOS	A	A	A	A	B	
Approach Delay (s/veh)		7.3	5.3		16.4	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 60.1			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay (s/veh): 7.5		Intersection LOS: A	
Intersection Capacity Utilization 56.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 30:



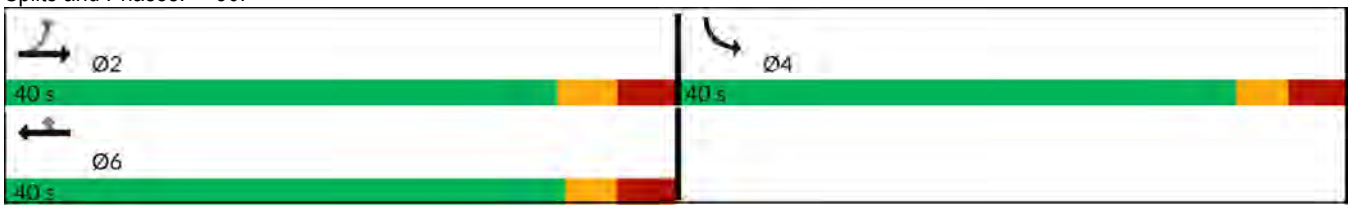


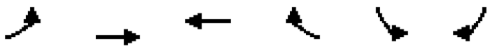
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	300	820	828	152	116	172
Future Volume (vph)	300	820	828	152	116	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415			130	0	0
Storage Lanes	0			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850	0.919	
Flt Protected	0.950				0.980	
Satd. Flow (prot)	1770	1863	3539	1583	1678	0
Flt Permitted	0.322				0.980	
Satd. Flow (perm)	600	1863	3539	1583	1678	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				152	78	
Link Speed (mph)		35	35		35	
Link Distance (ft)		572	399		208	
Travel Time (s)		11.1	7.8		4.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	300	820	828	152	116	172
Shared Lane Traffic (%)						
Lane Group Flow (vph)	300	820	828	152	288	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	0	0	0	0	1	
Detector Template					Left	
Leading Detector (ft)	0	0	0	0	50	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)					0	
Detector 1 Size(ft)					50	
Detector 1 Type					Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)					0.0	
Detector 1 Queue (s)					0.0	
Detector 1 Delay (s)					0.0	
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	1.0	1.0	1.0	1.0	6.0	
Minimum Split (s)	25.0	25.0	41.5	41.5	24.5	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	33.0	33.0	33.5	33.5	33.5	
Yellow Time (s)	3.6	3.6	3.1	3.1	3.1	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	Max	Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Don't Walk (s)	11.0	11.0	28.0	28.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	35.2	35.2	35.7	35.7	13.2	
Actuated g/C Ratio	0.57	0.57	0.58	0.58	0.21	
v/c Ratio	0.88	0.78	0.41	0.16	0.69	
Control Delay (s/veh)	45.2	18.7	8.7	2.1	24.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	45.2	18.7	8.7	2.1	24.7	
LOS	D	B	A	A	C	
Approach Delay (s/veh)		25.8	7.7		24.7	
Approach LOS		C	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 62			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 18.3		Intersection LOS: B	
Intersection Capacity Utilization 73.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 30:



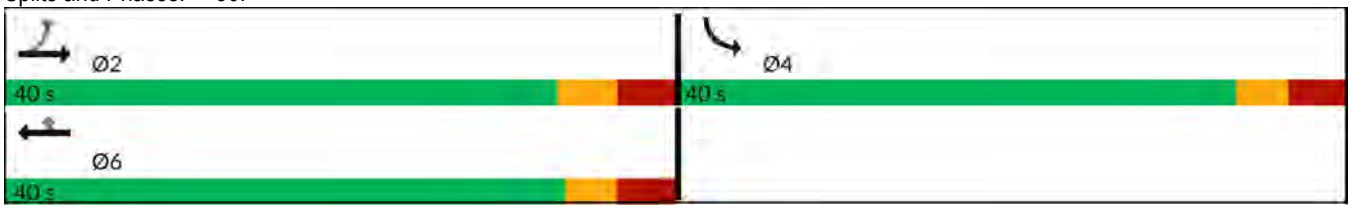


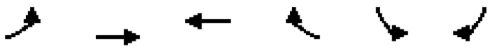
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	177	415	734	106	132	126
Future Volume (vph)	177	415	734	106	132	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415			130	0	0
Storage Lanes	0			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850	0.934	
Flt Protected	0.950				0.975	
Satd. Flow (prot)	1770	1863	3539	1583	1696	0
Flt Permitted	0.369				0.975	
Satd. Flow (perm)	687	1863	3539	1583	1696	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				106	74	
Link Speed (mph)		35	35		35	
Link Distance (ft)		572	399		208	
Travel Time (s)		11.1	7.8		4.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	177	415	734	106	132	126
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	415	734	106	258	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	0	0	0	0	1	
Detector Template					Left	
Leading Detector (ft)	0	0	0	0	50	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)					0	
Detector 1 Size(ft)					50	
Detector 1 Type					Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)					0.0	
Detector 1 Queue (s)					0.0	
Detector 1 Delay (s)					0.0	
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	1.0	1.0	1.0	1.0	6.0	
Minimum Split (s)	25.0	25.0	41.5	41.5	24.5	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	33.0	33.0	33.5	33.5	33.5	
Yellow Time (s)	3.6	3.6	3.1	3.1	3.1	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	Max	Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Don't Walk (s)	11.0	11.0	28.0	28.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	35.8	35.8	36.3	36.3	12.1	
Actuated g/C Ratio	0.58	0.58	0.59	0.59	0.20	
v/c Ratio	0.44	0.38	0.35	0.11	0.66	
Control Delay (s/veh)	13.0	9.0	7.7	2.1	23.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	13.0	9.0	7.7	2.1	23.9	
LOS	B	A	A	A	C	
Approach Delay (s/veh)		10.2	7.0		23.9	
Approach LOS		B	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 61.4			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay (s/veh): 10.7		Intersection LOS: B	
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 30:



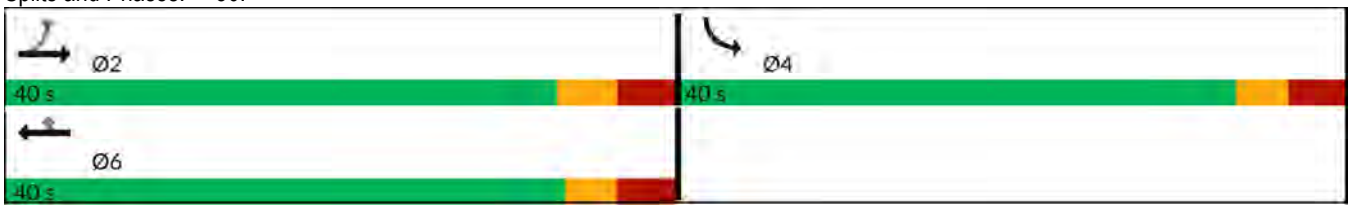


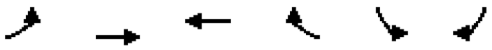
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	315	879	923	264	139	181
Future Volume (vph)	315	879	923	264	139	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415			130	0	0
Storage Lanes	0			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850	0.924	
Flt Protected	0.950				0.979	
Satd. Flow (prot)	1770	1863	3539	1583	1685	0
Flt Permitted	0.274				0.979	
Satd. Flow (perm)	510	1863	3539	1583	1685	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				261	57	
Link Speed (mph)		35	35		35	
Link Distance (ft)		572	399		208	
Travel Time (s)		11.1	7.8		4.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	315	879	923	264	139	181
Shared Lane Traffic (%)						
Lane Group Flow (vph)	315	879	923	264	320	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	0	0	0	0	1	
Detector Template						
Leading Detector (ft)	0	0	0	0	50	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)					0	
Detector 1 Size(ft)					50	
Detector 1 Type					Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)					0.0	
Detector 1 Queue (s)					0.0	
Detector 1 Delay (s)					0.0	
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	1.0	1.0	1.0	1.0	6.0	
Minimum Split (s)	25.0	25.0	41.5	41.5	24.5	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	33.0	33.0	33.5	33.5	33.5	
Yellow Time (s)	3.6	3.6	3.1	3.1	3.1	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	Max	Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Don't Walk (s)	11.0	11.0	28.0	28.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	34.8	34.8	35.3	35.3	15.3	
Actuated g/C Ratio	0.55	0.55	0.56	0.56	0.24	
v/c Ratio	1.13	0.86	0.47	0.27	0.71	
Control Delay (s/veh)	116.7	25.6	10.4	2.3	27.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	116.7	25.6	10.4	2.3	27.3	
LOS	F	C	B	A	C	
Approach Delay (s/veh)		49.6	8.6		27.3	
Approach LOS		D	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 63.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.13			
Intersection Signal Delay (s/veh): 28.9		Intersection LOS: C	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 30:



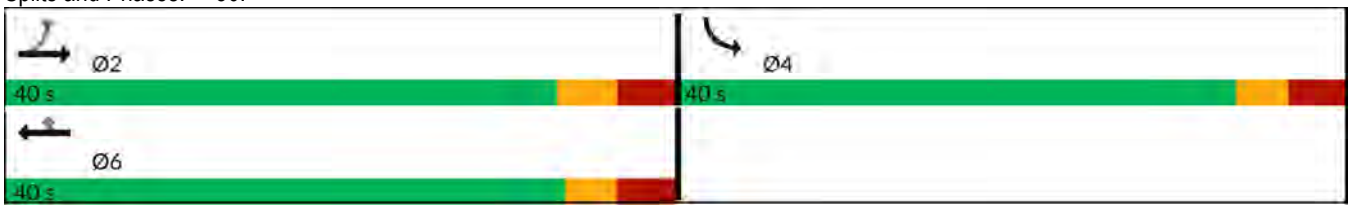


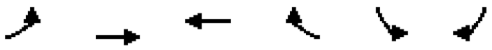
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	177	345	723	88	80	126
Future Volume (vph)	177	345	723	88	80	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415			130	0	0
Storage Lanes	0			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850	0.917	
Flt Protected	0.950				0.981	
Satd. Flow (prot)	1770	1863	3539	1583	1676	0
Flt Permitted	0.377				0.981	
Satd. Flow (perm)	702	1863	3539	1583	1676	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				88	111	
Link Speed (mph)		35	35		35	
Link Distance (ft)		572	399		208	
Travel Time (s)		11.1	7.8		4.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	177	345	723	88	80	126
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	345	723	88	206	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	0	0	0	0	1	
Detector Template					Left	
Leading Detector (ft)	0	0	0	0	50	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)					0	
Detector 1 Size(ft)					50	
Detector 1 Type					Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)					0.0	
Detector 1 Queue (s)					0.0	
Detector 1 Delay (s)					0.0	
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	1.0	1.0	1.0	1.0	6.0	
Minimum Split (s)	25.0	25.0	41.5	41.5	24.5	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	33.0	33.0	33.5	33.5	33.5	
Yellow Time (s)	3.6	3.6	3.1	3.1	3.1	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	Max	Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Don't Walk (s)	11.0	11.0	28.0	28.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	37.7	37.7	38.2	38.2	9.3	
Actuated g/C Ratio	0.62	0.62	0.63	0.63	0.15	
v/c Ratio	0.41	0.30	0.32	0.09	0.59	
Control Delay (s/veh)	10.3	6.8	6.1	1.9	18.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	10.3	6.8	6.1	1.9	18.0	
LOS	B	A	A	A	B	
Approach Delay (s/veh)		8.0	5.7		18.0	
Approach LOS		A	A		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 60.5			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay (s/veh): 8.1		Intersection LOS: A	
Intersection Capacity Utilization 58.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 30:



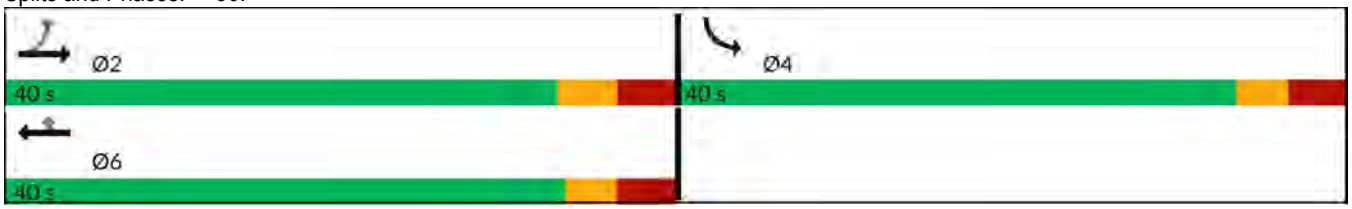


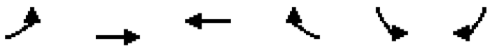
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	315	862	870	160	122	181
Future Volume (vph)	315	862	870	160	122	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415			130	0	0
Storage Lanes	0			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850	0.919	
Flt Protected	0.950				0.980	
Satd. Flow (prot)	1770	1863	3539	1583	1678	0
Flt Permitted	0.300				0.980	
Satd. Flow (perm)	559	1863	3539	1583	1678	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				160	68	
Link Speed (mph)		35	35		35	
Link Distance (ft)		572	399		208	
Travel Time (s)		11.1	7.8		4.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	315	862	870	160	122	181
Shared Lane Traffic (%)						
Lane Group Flow (vph)	315	862	870	160	303	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	0	0	0	0	1	
Detector Template					Left	
Leading Detector (ft)	0	0	0	0	50	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)					0	
Detector 1 Size(ft)					50	
Detector 1 Type					Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)					0.0	
Detector 1 Queue (s)					0.0	
Detector 1 Delay (s)					0.0	
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	1.0	1.0	1.0	1.0	6.0	
Minimum Split (s)	25.0	25.0	41.5	41.5	24.5	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	33.0	33.0	33.5	33.5	33.5	
Yellow Time (s)	3.6	3.6	3.1	3.1	3.1	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	Max	Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Don't Walk (s)	11.0	11.0	28.0	28.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	35.0	35.0	35.5	35.5	14.2	
Actuated g/C Ratio	0.56	0.56	0.57	0.57	0.23	
v/c Ratio	1.01	0.83	0.43	0.17	0.70	
Control Delay (s/veh)	75.8	22.4	9.5	2.2	26.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	75.8	22.4	9.5	2.2	26.0	
LOS	E	C	A	A	C	
Approach Delay (s/veh)		36.7	8.3		26.0	
Approach LOS		D	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 62.8			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay (s/veh): 23.8		Intersection LOS: C	
Intersection Capacity Utilization 76.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 30:



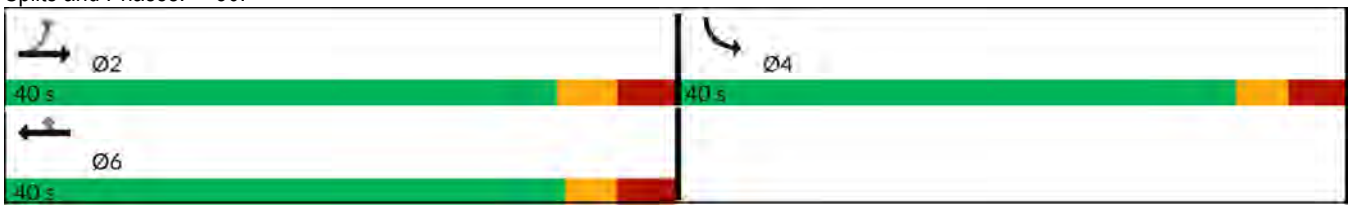


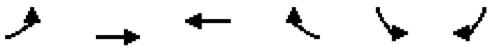
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	177	315	738	113	154	126
Future Volume (vph)	177	315	738	113	154	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415			130	0	0
Storage Lanes	0			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850	0.939	
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1770	1863	3539	1583	1702	0
Flt Permitted	0.364				0.973	
Satd. Flow (perm)	678	1863	3539	1583	1702	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				113	63	
Link Speed (mph)		35	35		35	
Link Distance (ft)		572	399		208	
Travel Time (s)		11.1	7.8		4.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	177	315	738	113	154	126
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	315	738	113	280	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	0	0	0	0	1	
Detector Template					Left	
Leading Detector (ft)	0	0	0	0	50	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)					0	
Detector 1 Size(ft)					50	
Detector 1 Type					Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)					0.0	
Detector 1 Queue (s)					0.0	
Detector 1 Delay (s)					0.0	
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	1.0	1.0	1.0	1.0	6.0	
Minimum Split (s)	25.0	25.0	41.5	41.5	24.5	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	33.0	33.0	33.5	33.5	33.5	
Yellow Time (s)	3.6	3.6	3.1	3.1	3.1	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	Max	Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Don't Walk (s)	11.0	11.0	28.0	28.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	35.3	35.3	35.8	35.8	13.3	
Actuated g/C Ratio	0.57	0.57	0.58	0.58	0.21	
v/c Ratio	0.46	0.30	0.36	0.12	0.68	
Control Delay (s/veh)	14.3	8.9	8.4	2.3	25.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	14.3	8.9	8.4	2.3	25.5	
LOS	B	A	A	A	C	
Approach Delay (s/veh)		10.8	7.6		25.5	
Approach LOS		B	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 62.2			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 11.7		Intersection LOS: B	
Intersection Capacity Utilization 63.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 30:



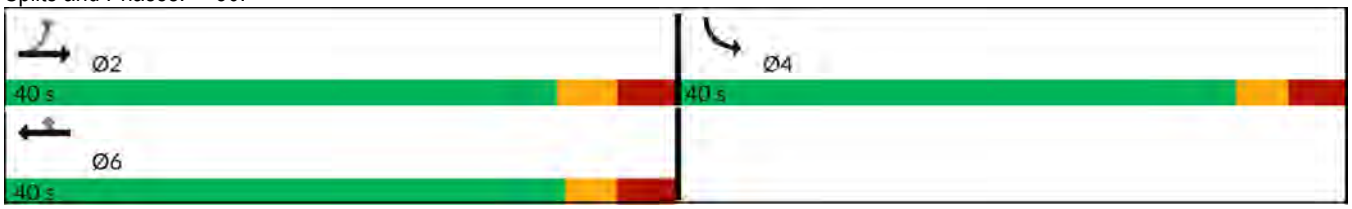


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	315	886	942	304	146	181
Future Volume (vph)	315	886	942	304	146	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	415			130	0	0
Storage Lanes	0			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850	0.925	
Flt Protected	0.950				0.978	
Satd. Flow (prot)	1770	1863	3539	1583	1685	0
Flt Permitted	0.265				0.978	
Satd. Flow (perm)	494	1863	3539	1583	1685	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				294	53	
Link Speed (mph)		35	35		35	
Link Distance (ft)		572	399		208	
Travel Time (s)		11.1	7.8		4.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	315	886	942	304	146	181
Shared Lane Traffic (%)						
Lane Group Flow (vph)	315	886	942	304	327	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	0	0	0	0	1	
Detector Template					Left	
Leading Detector (ft)	0	0	0	0	50	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)					0	
Detector 1 Size(ft)					50	
Detector 1 Type					Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)					0.0	
Detector 1 Queue (s)					0.0	
Detector 1 Delay (s)					0.0	
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	1.0	1.0	1.0	1.0	6.0	
Minimum Split (s)	25.0	25.0	41.5	41.5	24.5	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	33.0	33.0	33.5	33.5	33.5	
Yellow Time (s)	3.6	3.6	3.1	3.1	3.1	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	Max	Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Don't Walk (s)	11.0	11.0	28.0	28.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	34.7	34.7	35.2	35.2	15.7	
Actuated g/C Ratio	0.54	0.54	0.55	0.55	0.25	
v/c Ratio	1.18	0.88	0.48	0.30	0.72	
Control Delay (s/veh)	134.9	27.2	10.7	2.4	27.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	134.9	27.2	10.7	2.4	27.8	
LOS	F	C	B	A	C	
Approach Delay (s/veh)		55.4	8.7		27.8	
Approach LOS		E	A		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 64			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay (s/veh): 31.2		Intersection LOS: C	
Intersection Capacity Utilization 79.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 30:



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	680	320	140	72	300	0	0	420	72
Future Volume (vph)	0	0	0	680	320	140	72	300	0	0	420	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	472		0	308		0	0		120
Storage Lanes	0		0	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Frt					0.972							0.850
Flt Protected				0.950	0.981		0.950					
Satd. Flow (prot)	0	0	0	1610	3233	0	1770	1863	0	0	3539	1583
Flt Permitted				0.950	0.981		0.412					
Satd. Flow (perm)	0	0	0	1610	3233	0	767	1863	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					32							147
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		204			345			469			365	
Travel Time (s)		4.0			6.7			9.1			7.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	680	320	140	72	300	0	0	420	72
Shared Lane Traffic (%)				44%								
Lane Group Flow (vph)	0	0	0	381	759	0	72	300	0	0	420	72
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		0		1	1		1	1			1	1
Detector Template				Left			Left					Right
Leading Detector (ft)		0		100	100		100	100			100	100
Trailing Detector (ft)		0		0	0		0	80			80	0
Detector 1 Position(ft)				0	0		0	80			80	0
Detector 1 Size(ft)				100	100		100	20			20	100
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	0.0
Turn Type				Split	NA		pm+pt	NA			NA	Prot
Protected Phases				8	8		5	2			6	6
Permitted Phases							2					
Detector Phase				8	8		5	2			6	6
Switch Phase												
Minimum Initial (s)				6.0	6.0		6.0	6.0			6.0	6.0
Minimum Split (s)				25.7	25.7		12.1	29.1			33.1	33.1
Total Split (s)				30.0	30.0		15.0	35.0			35.0	35.0

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)				37.5%	37.5%		18.8%	43.8%			43.8%	43.8%
Maximum Green (s)				22.3	22.3		8.9	28.9			28.9	28.9
Yellow Time (s)				4.9	4.9		3.6	3.6			3.6	3.6
All-Red Time (s)				2.8	2.8		2.5	2.5			2.5	2.5
Lost Time Adjust (s)				0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)				7.7	7.7		6.1	6.1			6.1	6.1
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode				None	None		None	Max			Max	Max
Walk Time (s)								7.0			7.0	7.0
Flash Don't Walk (s)								16.0			20.0	20.0
Pedestrian Calls (#/hr)								0			0	0
Act Effct Green (s)				21.1	21.1		39.9	39.9			29.3	29.3
Actuated g/C Ratio				0.28	0.28		0.53	0.53			0.39	0.39
v/c Ratio				0.84	0.81		0.14	0.30			0.30	0.10
Control Delay (s/veh)				45.3	33.2		9.3	10.8			18.0	0.3
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0
Total Delay (s/veh)				45.3	33.2		9.3	10.8			18.0	0.3
LOS				D	C		A	B			B	A
Approach Delay (s/veh)					37.2			10.5			15.4	
Approach LOS					D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 75			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 26.9		Intersection LOS: C	
Intersection Capacity Utilization 55.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 27:

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	680	364	132	176	512	0	0	540	132
Future Volume (vph)	0	0	0	680	364	132	176	512	0	0	540	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	472		0	308		0	0		120
Storage Lanes	0		0	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Frt					0.975							0.850
Flt Protected				0.950	0.982		0.950					
Satd. Flow (prot)	0	0	0	1610	3246	0	1770	1863	0	0	3539	1583
Flt Permitted				0.950	0.982		0.330					
Satd. Flow (perm)	0	0	0	1610	3246	0	615	1863	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					28							147
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		204			345			469			365	
Travel Time (s)		4.0			6.7			9.1			7.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	680	364	132	176	512	0	0	540	132
Shared Lane Traffic (%)				42%								
Lane Group Flow (vph)	0	0	0	394	782	0	176	512	0	0	540	132
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		0		1	1		1	1			1	1
Detector Template				Left			Left					Right
Leading Detector (ft)		0		100	100		100	100			100	100
Trailing Detector (ft)		0		0	0		0	80			80	0
Detector 1 Position(ft)				0	0		0	80			80	0
Detector 1 Size(ft)				100	100		100	20			20	100
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	0.0
Turn Type				Split	NA		pm+pt	NA			NA	Prot
Protected Phases				8	8		5	2			6	6
Permitted Phases							2					
Detector Phase				8	8		5	2			6	6
Switch Phase												
Minimum Initial (s)				6.0	6.0		6.0	6.0			6.0	6.0
Minimum Split (s)				25.7	25.7		12.1	29.1			33.1	33.1
Total Split (s)				30.0	30.0		15.0	35.0			35.0	35.0

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)				37.5%	37.5%		18.8%	43.8%			43.8%	43.8%
Maximum Green (s)				22.3	22.3		8.9	28.9			28.9	28.9
Yellow Time (s)				4.9	4.9		3.6	3.6			3.6	3.6
All-Red Time (s)				2.8	2.8		2.5	2.5			2.5	2.5
Lost Time Adjust (s)				0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)				7.7	7.7		6.1	6.1			6.1	6.1
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode				None	None		None	Max			Max	Max
Walk Time (s)								7.0			7.0	7.0
Flash Don't Walk (s)								16.0			20.0	20.0
Pedestrian Calls (#/hr)								0			0	0
Act Effct Green (s)				21.7	21.7		43.5	43.5			28.9	28.9
Actuated g/C Ratio				0.27	0.27		0.55	0.55			0.37	0.37
v/c Ratio				0.89	0.86		0.38	0.50			0.42	0.20
Control Delay (s/veh)				52.8	37.5		11.6	13.2			20.2	3.5
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0
Total Delay (s/veh)				52.8	37.5		11.6	13.2			20.2	3.5
LOS				D	D		B	B			C	A
Approach Delay (s/veh)					42.6			12.8			16.9	
Approach LOS					D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 79			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay (s/veh): 27.7		Intersection LOS: C	
Intersection Capacity Utilization 64.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 27:

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	715	336	270	76	438	0	0	469	83
Future Volume (vph)	0	0	0	715	336	270	76	438	0	0	469	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	472		0	308		0	0		120
Storage Lanes	0		0	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Frt					0.954							0.850
Flt Protected				0.950	0.985		0.950					
Satd. Flow (prot)	0	0	0	1610	3186	0	1770	1863	0	0	3539	1583
Flt Permitted				0.950	0.985		0.377					
Satd. Flow (perm)	0	0	0	1610	3186	0	702	1863	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					79							147
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		204			345			469			365	
Travel Time (s)		4.0			6.7			9.1			7.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	715	336	270	76	438	0	0	469	83
Shared Lane Traffic (%)				38%								
Lane Group Flow (vph)	0	0	0	443	878	0	76	438	0	0	469	83
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		0		1	1		1	1			1	1
Detector Template				Left			Left					Right
Leading Detector (ft)		0		100	100		100	100			100	100
Trailing Detector (ft)		0		0	0		0	80			80	0
Detector 1 Position(ft)				0	0		0	80			80	0
Detector 1 Size(ft)				100	100		100	20			20	100
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	0.0
Turn Type				Split	NA		pm+pt	NA			NA	Prot
Protected Phases				8	8		5	2			6	6
Permitted Phases							2					
Detector Phase				8	8		5	2			6	6
Switch Phase												
Minimum Initial (s)				6.0	6.0		6.0	6.0			6.0	6.0
Minimum Split (s)				25.7	25.7		12.1	29.1			33.1	33.1
Total Split (s)				30.0	30.0		15.0	35.0			35.0	35.0

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)				37.5%	37.5%		18.8%	43.8%			43.8%	43.8%
Maximum Green (s)				22.3	22.3		8.9	28.9			28.9	28.9
Yellow Time (s)				4.9	4.9		3.6	3.6			3.6	3.6
All-Red Time (s)				2.8	2.8		2.5	2.5			2.5	2.5
Lost Time Adjust (s)				0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)				7.7	7.7		6.1	6.1			6.1	6.1
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode				None	None		None	Max			Max	Max
Walk Time (s)								7.0			7.0	7.0
Flash Don't Walk (s)								16.0			20.0	20.0
Pedestrian Calls (#/hr)								0			0	0
Act Effct Green (s)				22.4	22.4		40.0	40.0			29.1	29.1
Actuated g/C Ratio				0.29	0.29		0.52	0.52			0.38	0.38
v/c Ratio				0.94	0.88		0.16	0.45			0.35	0.12
Control Delay (s/veh)				58.4	36.9		9.5	12.8			18.7	0.9
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0
Total Delay (s/veh)				58.4	36.9		9.5	12.8			18.7	0.9
LOS				E	D		A	B			B	A
Approach Delay (s/veh)					44.1			12.3			16.0	
Approach LOS					D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 76.3			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay (s/veh): 30.8		Intersection LOS: C	
Intersection Capacity Utilization 60.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 27:

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	715	383	156	185	573	0	0	725	191
Future Volume (vph)	0	0	0	715	383	156	185	573	0	0	725	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	472		0	308		0	0		120
Storage Lanes	0		0	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Frt					0.972							0.850
Flt Protected				0.950	0.982		0.950					
Satd. Flow (prot)	0	0	0	1610	3236	0	1770	1863	0	0	3539	1583
Flt Permitted				0.950	0.982		0.230					
Satd. Flow (perm)	0	0	0	1610	3236	0	428	1863	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					32							191
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		204			345			469			365	
Travel Time (s)		4.0			6.7			9.1			7.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	715	383	156	185	573	0	0	725	191
Shared Lane Traffic (%)				42%								
Lane Group Flow (vph)	0	0	0	415	839	0	185	573	0	0	725	191
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		0		1	1		1	1			1	1
Detector Template				Left			Left					Right
Leading Detector (ft)		0		100	100		100	100			100	100
Trailing Detector (ft)		0		0	0		0	80			80	0
Detector 1 Position(ft)				0	0		0	80			80	0
Detector 1 Size(ft)				100	100		100	20			20	100
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	0.0
Turn Type				Split	NA		pm+pt	NA			NA	Prot
Protected Phases				8	8		5	2			6	6
Permitted Phases							2					
Detector Phase				8	8		5	2			6	6
Switch Phase												
Minimum Initial (s)				6.0	6.0		6.0	6.0			6.0	6.0
Minimum Split (s)				25.7	25.7		12.1	29.1			33.1	33.1
Total Split (s)				30.0	30.0		15.0	35.0			35.0	35.0

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)				37.5%	37.5%		18.8%	43.8%			43.8%	43.8%
Maximum Green (s)				22.3	22.3		8.9	28.9			28.9	28.9
Yellow Time (s)				4.9	4.9		3.6	3.6			3.6	3.6
All-Red Time (s)				2.8	2.8		2.5	2.5			2.5	2.5
Lost Time Adjust (s)				0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)				7.7	7.7		6.1	6.1			6.1	6.1
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode				None	None		None	Max			Max	Max
Walk Time (s)								7.0			7.0	7.0
Flash Don't Walk (s)								16.0			20.0	20.0
Pedestrian Calls (#/hr)								0			0	0
Act Effct Green (s)				22.2	22.2		43.6	43.6			28.9	28.9
Actuated g/C Ratio				0.28	0.28		0.55	0.55			0.36	0.36
v/c Ratio				0.92	0.91		0.49	0.56			0.56	0.27
Control Delay (s/veh)				57.7	41.9		13.8	14.5			22.5	4.1
Queue Delay				0.0	0.0		0.0	0.0			0.5	0.0
Total Delay (s/veh)				57.7	41.9		13.8	14.5			23.1	4.1
LOS				E	D		B	B			C	A
Approach Delay (s/veh)					47.1			14.3			19.1	
Approach LOS					D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 79.6			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay (s/veh): 29.9		Intersection LOS: C	
Intersection Capacity Utilization 71.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 27:

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	715	336	147	76	315	0	0	441	76
Future Volume (vph)	0	0	0	715	336	147	76	315	0	0	441	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	472		0	308		0	0		120
Storage Lanes	0		0	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Frt					0.972							0.850
Flt Protected				0.950	0.981		0.950					
Satd. Flow (prot)	0	0	0	1610	3233	0	1770	1863	0	0	3539	1583
Flt Permitted				0.950	0.981		0.398					
Satd. Flow (perm)	0	0	0	1610	3233	0	741	1863	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					32							147
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		204			345			469			365	
Travel Time (s)		4.0			6.7			9.1			7.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	715	336	147	76	315	0	0	441	76
Shared Lane Traffic (%)				44%								
Lane Group Flow (vph)	0	0	0	400	798	0	76	315	0	0	441	76
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		0		1	1		1	1			1	1
Detector Template				Left			Left					Right
Leading Detector (ft)		0		100	100		100	100			100	100
Trailing Detector (ft)		0		0	0		0	80			80	0
Detector 1 Position(ft)				0	0		0	80			80	0
Detector 1 Size(ft)				100	100		100	20			20	100
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	0.0
Turn Type				Split	NA		pm+pt	NA			NA	Prot
Protected Phases				8	8		5	2			6	6
Permitted Phases							2					
Detector Phase				8	8		5	2			6	6
Switch Phase												
Minimum Initial (s)				6.0	6.0		6.0	6.0			6.0	6.0
Minimum Split (s)				25.7	25.7		12.1	29.1			33.1	33.1
Total Split (s)				30.0	30.0		15.0	35.0			35.0	35.0

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)				37.5%	37.5%		18.8%	43.8%			43.8%	43.8%
Maximum Green (s)				22.3	22.3		8.9	28.9			28.9	28.9
Yellow Time (s)				4.9	4.9		3.6	3.6			3.6	3.6
All-Red Time (s)				2.8	2.8		2.5	2.5			2.5	2.5
Lost Time Adjust (s)				0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)				7.7	7.7		6.1	6.1			6.1	6.1
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode				None	None		None	Max			Max	Max
Walk Time (s)								7.0			7.0	7.0
Flash Don't Walk (s)								16.0			20.0	20.0
Pedestrian Calls (#/hr)								0			0	0
Act Effct Green (s)				21.4	21.4		40.0	40.0			29.3	29.3
Actuated g/C Ratio				0.28	0.28		0.53	0.53			0.39	0.39
v/c Ratio				0.88	0.85		0.15	0.32			0.32	0.11
Control Delay (s/veh)				49.2	35.4		9.4	11.0			18.2	0.5
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0
Total Delay (s/veh)				49.2	35.4		9.4	11.0			18.2	0.5
LOS				D	D		A	B			B	A
Approach Delay (s/veh)					40.0			10.7			15.6	
Approach LOS					D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 75.4			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 28.6		Intersection LOS: C	
Intersection Capacity Utilization 57.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 27:

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	715	383	139	185	538	0	0	568	139
Future Volume (vph)	0	0	0	715	383	139	185	538	0	0	568	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	472		0	308		0	0		120
Storage Lanes	0		0	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Frt					0.975							0.850
Flt Protected				0.950	0.982		0.950					
Satd. Flow (prot)	0	0	0	1610	3246	0	1770	1863	0	0	3539	1583
Flt Permitted				0.950	0.982		0.312					
Satd. Flow (perm)	0	0	0	1610	3246	0	581	1863	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					28							147
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		204			345			469			365	
Travel Time (s)		4.0			6.7			9.1			7.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	715	383	139	185	538	0	0	568	139
Shared Lane Traffic (%)				42%								
Lane Group Flow (vph)	0	0	0	415	822	0	185	538	0	0	568	139
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		0		1	1		1	1			1	1
Detector Template				Left			Left					Right
Leading Detector (ft)		0		100	100		100	100			100	100
Trailing Detector (ft)		0		0	0		0	80			80	0
Detector 1 Position(ft)				0	0		0	80			80	0
Detector 1 Size(ft)				100	100		100	20			20	100
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	0.0
Turn Type				Split	NA		pm+pt	NA			NA	Prot
Protected Phases				8	8		5	2			6	6
Permitted Phases							2					
Detector Phase				8	8		5	2			6	6
Switch Phase												
Minimum Initial (s)				6.0	6.0		6.0	6.0			6.0	6.0
Minimum Split (s)				25.7	25.7		12.1	29.1			33.1	33.1
Total Split (s)				30.0	30.0		15.0	35.0			35.0	35.0

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)				37.5%	37.5%		18.8%	43.8%			43.8%	43.8%
Maximum Green (s)				22.3	22.3		8.9	28.9			28.9	28.9
Yellow Time (s)				4.9	4.9		3.6	3.6			3.6	3.6
All-Red Time (s)				2.8	2.8		2.5	2.5			2.5	2.5
Lost Time Adjust (s)				0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)				7.7	7.7		6.1	6.1			6.1	6.1
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode				None	None		None	Max			Max	Max
Walk Time (s)								7.0			7.0	7.0
Flash Don't Walk (s)								16.0			20.0	20.0
Pedestrian Calls (#/hr)								0			0	0
Act Effct Green (s)				22.2	22.2		43.6	43.6			28.9	28.9
Actuated g/C Ratio				0.28	0.28		0.55	0.55			0.36	0.36
v/c Ratio				0.92	0.89		0.41	0.53			0.44	0.21
Control Delay (s/veh)				57.7	40.0		12.1	13.8			20.7	3.9
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0
Total Delay (s/veh)				57.7	40.0		12.1	13.8			20.7	3.9
LOS				E	D		B	B			C	A
Approach Delay (s/veh)					45.9			13.4			17.4	
Approach LOS					D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 79.6			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay (s/veh): 29.5		Intersection LOS: C	
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 27:

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	715	336	319	76	488	0	0	481	86
Future Volume (vph)	0	0	0	715	336	319	76	488	0	0	481	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	472		0	308		0	0		120
Storage Lanes	0		0	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Frt					0.947							0.850
Flt Protected				0.950	0.986		0.950					
Satd. Flow (prot)	0	0	0	1610	3166	0	1770	1863	0	0	3539	1583
Flt Permitted				0.950	0.986		0.370					
Satd. Flow (perm)	0	0	0	1610	3166	0	689	1863	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					112							147
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		204			345			469			365	
Travel Time (s)		4.0			6.7			9.1			7.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	715	336	319	76	488	0	0	481	86
Shared Lane Traffic (%)				35%								
Lane Group Flow (vph)	0	0	0	465	905	0	76	488	0	0	481	86
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		0		1	1		1	1			1	1
Detector Template				Left			Left					Right
Leading Detector (ft)		0		100	100		100	100			100	100
Trailing Detector (ft)		0		0	0		0	80			80	0
Detector 1 Position(ft)				0	0		0	80			80	0
Detector 1 Size(ft)				100	100		100	20			20	100
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	0.0
Turn Type				Split	NA		pm+pt	NA			NA	Prot
Protected Phases				8	8		5	2			6	6
Permitted Phases							2					
Detector Phase				8	8		5	2			6	6
Switch Phase												
Minimum Initial (s)				6.0	6.0		6.0	6.0			6.0	6.0
Minimum Split (s)				25.7	25.7		12.1	29.1			33.1	33.1
Total Split (s)				30.0	30.0		15.0	35.0			35.0	35.0

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)				37.5%	37.5%		18.8%	43.8%			43.8%	43.8%
Maximum Green (s)				22.3	22.3		8.9	28.9			28.9	28.9
Yellow Time (s)				4.9	4.9		3.6	3.6			3.6	3.6
All-Red Time (s)				2.8	2.8		2.5	2.5			2.5	2.5
Lost Time Adjust (s)				0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)				7.7	7.7		6.1	6.1			6.1	6.1
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode				None	None		None	Max			Max	Max
Walk Time (s)								7.0			7.0	7.0
Flash Don't Walk (s)								16.0			20.0	20.0
Pedestrian Calls (#/hr)								0			0	0
Act Effct Green (s)				22.4	22.4		40.0	40.0			29.1	29.1
Actuated g/C Ratio				0.29	0.29		0.52	0.52			0.38	0.38
v/c Ratio				0.98	0.90		0.16	0.50			0.36	0.12
Control Delay (s/veh)				68.4	37.0		9.5	13.6			18.8	1.1
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0
Total Delay (s/veh)				68.4	37.0		9.5	13.6			18.8	1.1
LOS				E	D		A	B			B	A
Approach Delay (s/veh)					47.6			13.0			16.1	
Approach LOS					D			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 76.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay (s/veh): 32.7	Intersection LOS: C
Intersection Capacity Utilization 64.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 27:

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	715	383	163	185	586	0	0	784	211
Future Volume (vph)	0	0	0	715	383	163	185	586	0	0	784	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	472		0	308		0	0		120
Storage Lanes	0		0	1		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00
Frt					0.971							0.850
Flt Protected				0.950	0.983		0.950					
Satd. Flow (prot)	0	0	0	1610	3236	0	1770	1863	0	0	3539	1583
Flt Permitted				0.950	0.983		0.202					
Satd. Flow (perm)	0	0	0	1610	3236	0	376	1863	0	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					34							209
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		204			345			469			365	
Travel Time (s)		4.0			6.7			9.1			7.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	715	383	163	185	586	0	0	784	211
Shared Lane Traffic (%)				41%								
Lane Group Flow (vph)	0	0	0	422	839	0	185	586	0	0	784	211
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		0		1	1		1	1			1	1
Detector Template				Left			Left					Right
Leading Detector (ft)		0		100	100		100	100			100	100
Trailing Detector (ft)		0		0	0		0	80			80	0
Detector 1 Position(ft)				0	0		0	80			80	0
Detector 1 Size(ft)				100	100		100	20			20	100
Detector 1 Type				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0		0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0		0.0	0.0			0.0	0.0
Turn Type				Split	NA		pm+pt	NA			NA	Prot
Protected Phases				8	8		5	2			6	6
Permitted Phases							2					
Detector Phase				8	8		5	2			6	6
Switch Phase												
Minimum Initial (s)				6.0	6.0		6.0	6.0			6.0	6.0
Minimum Split (s)				25.7	25.7		12.1	29.1			33.1	33.1
Total Split (s)				30.0	30.0		15.0	35.0			35.0	35.0

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)				37.5%	37.5%		18.8%	43.8%			43.8%	43.8%
Maximum Green (s)				22.3	22.3		8.9	28.9			28.9	28.9
Yellow Time (s)				4.9	4.9		3.6	3.6			3.6	3.6
All-Red Time (s)				2.8	2.8		2.5	2.5			2.5	2.5
Lost Time Adjust (s)				0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)				7.7	7.7		6.1	6.1			6.1	6.1
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Recall Mode				None	None		None	Max			Max	Max
Walk Time (s)								7.0			7.0	7.0
Flash Don't Walk (s)								16.0			20.0	20.0
Pedestrian Calls (#/hr)								0			0	0
Act Effct Green (s)				22.3	22.3		43.6	43.6			28.9	28.9
Actuated g/C Ratio				0.28	0.28		0.55	0.55			0.36	0.36
v/c Ratio				0.94	0.90		0.52	0.58			0.61	0.30
Control Delay (s/veh)				60.1	41.5		14.7	14.7			23.4	4.1
Queue Delay				0.0	0.0		0.0	0.0			0.7	0.0
Total Delay (s/veh)				60.1	41.5		14.7	14.7			24.1	4.1
LOS				E	D		B	B			C	A
Approach Delay (s/veh)					47.7			14.7			19.9	
Approach LOS					D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 79.7			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay (s/veh): 30.2		Intersection LOS: C	
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			

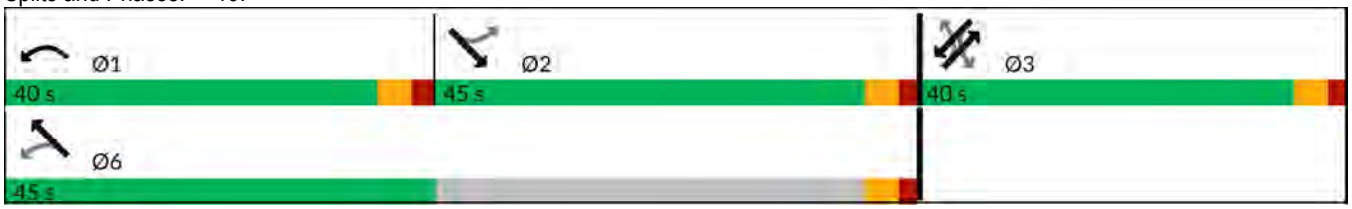
Splits and Phases: 27:

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	88	308	100	144	344	44	84	76	120	84	156	92
Future Volume (vph)	88	308	100	144	344	44	84	76	120	84	156	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	157		0	124		0	94		0	106		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.983			0.908			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1794	0	1770	1831	0	1770	1691	0	1770	1758	0
Flt Permitted	0.532			0.391			0.407			0.522		
Satd. Flow (perm)	991	1794	0	728	1831	0	758	1691	0	972	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			10			63			24	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			179			1299			243	
Travel Time (s)		3.4			4.1			29.5			5.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	88	308	100	144	344	44	84	76	120	84	156	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	408	0	144	388	0	84	196	0	84	248	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		1	0		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	0		20	0		20	20		20	20	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)				0			0	0		0	0	
Detector 1 Size(ft)				20			20	20		20	20	
Detector 1 Type				Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0			0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			3			3	
Permitted Phases	2			6			3			3		
Detector Phase	2	2		1	6		3	3		3	3	
Switch Phase												
Minimum Initial (s)	12.0	12.0		6.0	12.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.9	30.9		11.2	30.9		30.9	30.9		30.9	30.9	
Total Split (s)	45.0	45.0		40.0	45.0		40.0	40.0		40.0	40.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	36.0%	36.0%		32.0%	36.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	40.1	40.1		34.8	40.1		35.1	35.1		35.1	35.1	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.7	1.7		2.0	1.7		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.9	4.9		5.2	4.9		4.9	4.9		4.9	4.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.5	3.5		2.0	3.5		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	40.3	40.3		52.7	53.0		15.7	15.7		15.7	15.7	
Actuated g/C Ratio	0.51	0.51		0.67	0.68		0.20	0.20		0.20	0.20	
v/c Ratio	0.17	0.44		0.25	0.31		0.56	0.51		0.43	0.67	
Control Delay (s/veh)	13.2	14.7		6.5	6.6		43.2	23.3		34.8	35.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	13.2	14.7		6.5	6.6		43.2	23.3		34.8	35.6	
LOS	B	B		A	A		D	C		C	D	
Approach Delay (s/veh)		14.4			6.6			29.3			35.4	
Approach LOS		B			A			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 78.5			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay (s/veh): 18.6		Intersection LOS: B	
Intersection Capacity Utilization 65.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 19:

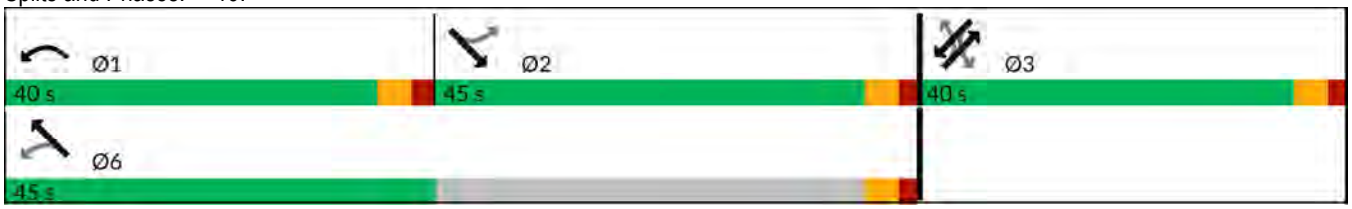


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	80	336	108	264	320	28	84	100	236	40	84	124
Future Volume (vph)	80	336	108	264	320	28	84	100	236	40	84	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	157		0	124		0	94		0	106		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.964			0.988			0.895			0.911	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1796	0	1770	1840	0	1770	1667	0	1770	1697	0
Flt Permitted	0.552			0.342			0.501			0.251		
Satd. Flow (perm)	1028	1796	0	637	1840	0	933	1667	0	468	1697	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			7			95			59	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			179			1299			243	
Travel Time (s)		3.4			4.1			29.5			5.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	336	108	264	320	28	84	100	236	40	84	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	444	0	264	348	0	84	336	0	40	208	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		1	0		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	0		20	0		20	20		20	20	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)				0			0	0		0	0	
Detector 1 Size(ft)				20			20	20		20	20	
Detector 1 Type				Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0			0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			3			3	
Permitted Phases	2			6			3			3		
Detector Phase	2	2		1	6		3	3		3	3	
Switch Phase												
Minimum Initial (s)	12.0	12.0		6.0	12.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.9	30.9		11.2	30.9		30.9	30.9		30.9	30.9	
Total Split (s)	45.0	45.0		40.0	45.0		40.0	40.0		40.0	40.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	36.0%	36.0%		32.0%	36.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	40.1	40.1		34.8	40.1		35.1	35.1		35.1	35.1	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.7	1.7		2.0	1.7		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.9	4.9		5.2	4.9		4.9	4.9		4.9	4.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.5	3.5		2.0	3.5		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	40.7	40.7		56.3	56.6		18.8	18.8		18.8	18.8	
Actuated g/C Ratio	0.48	0.48		0.66	0.66		0.22	0.22		0.22	0.22	
v/c Ratio	0.16	0.52		0.47	0.28		0.41	0.76		0.39	0.50	
Control Delay (s/veh)	17.5	20.1		9.8	7.6		35.0	34.0		40.4	24.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	17.5	20.1		9.8	7.6		35.0	34.0		40.4	24.6	
LOS	B	C		A	A		D	C		D	C	
Approach Delay (s/veh)		19.7			8.5			34.2			27.2	
Approach LOS		B			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 85.4			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay (s/veh): 20.3		Intersection LOS: C	
Intersection Capacity Utilization 80.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 19:

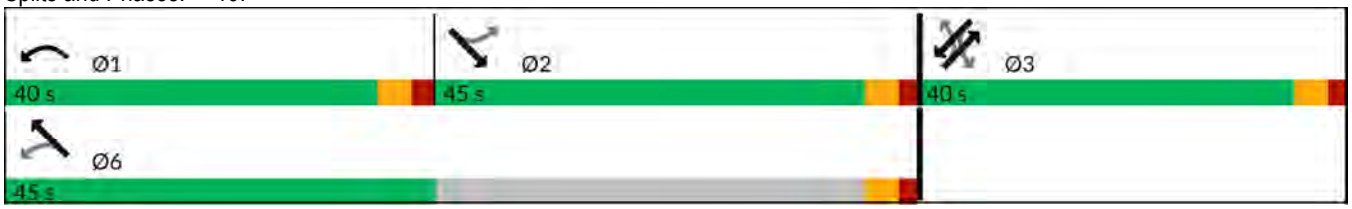


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	96	327	105	169	379	46	88	83	130	88	167	97
Future Volume (vph)	96	327	105	169	379	46	88	83	130	88	167	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	157		0	124		0	94		0	106		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.964			0.984			0.908			0.945	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1796	0	1770	1833	0	1770	1691	0	1770	1760	0
Flt Permitted	0.515			0.366			0.384			0.491		
Satd. Flow (perm)	959	1796	0	682	1833	0	715	1691	0	915	1760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			10			63			23	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			179			1299			243	
Travel Time (s)		3.4			4.1			29.5			5.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	96	327	105	169	379	46	88	83	130	88	167	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	432	0	169	425	0	88	213	0	88	264	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		1	0		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	0		20	0		20	20		20	20	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)				0			0	0		0	0	
Detector 1 Size(ft)				20			20	20		20	20	
Detector 1 Type				Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0			0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			3			3	
Permitted Phases	2			6			3			3		
Detector Phase	2	2		1	6		3	3		3	3	
Switch Phase												
Minimum Initial (s)	12.0	12.0		6.0	12.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.9	30.9		11.2	30.9		30.9	30.9		30.9	30.9	
Total Split (s)	45.0	45.0		40.0	45.0		40.0	40.0		40.0	40.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	36.0%	36.0%		32.0%	36.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	40.1	40.1		34.8	40.1		35.1	35.1		35.1	35.1	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.7	1.7		2.0	1.7		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.9	4.9		5.2	4.9		4.9	4.9		4.9	4.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.5	3.5		2.0	3.5		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	40.4	40.4		53.4	53.7		16.9	16.9		16.9	16.9	
Actuated g/C Ratio	0.50	0.50		0.66	0.67		0.21	0.21		0.21	0.21	
v/c Ratio	0.20	0.48		0.30	0.35		0.59	0.53		0.46	0.68	
Control Delay (s/veh)	14.7	16.3		7.4	7.3		45.6	24.4		36.1	36.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	14.7	16.3		7.4	7.3		45.6	24.4		36.1	36.2	
LOS	B	B		A	A		D	C		D	D	
Approach Delay (s/veh)		16.0			7.3			30.6			36.2	
Approach LOS		B			A			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 80.4			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 19.6		Intersection LOS: B	
Intersection Capacity Utilization 69.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 19:



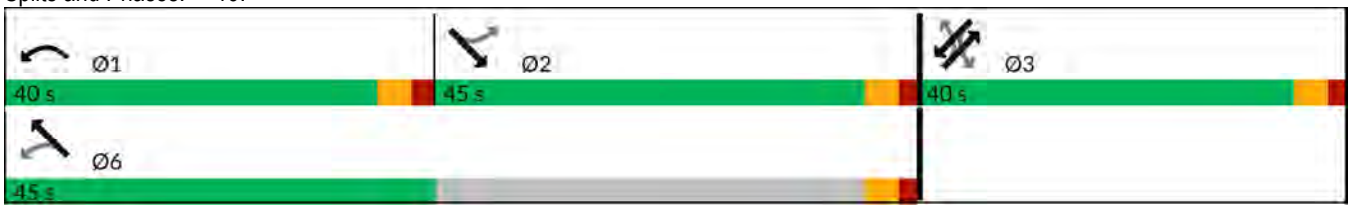
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	91	360	114	284	343	29	88	123	265	42	92	130
Future Volume (vph)	91	360	114	284	343	29	88	123	265	42	92	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	157		0	124		0	94		0	106		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.964			0.988			0.898			0.912	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1796	0	1770	1840	0	1770	1673	0	1770	1699	0
Flt Permitted	0.540			0.296			0.491			0.208		
Satd. Flow (perm)	1006	1796	0	551	1840	0	915	1673	0	387	1699	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			7			86			57	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			179			1299			243	
Travel Time (s)		3.4			4.1			29.5			5.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	91	360	114	284	343	29	88	123	265	42	92	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	474	0	284	372	0	88	388	0	42	222	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		1	0		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	0		20	0		20	20		20	20	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)				0			0	0		0	0	
Detector 1 Size(ft)				20			20	20		20	20	
Detector 1 Type				Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0			0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			3			3	
Permitted Phases	2			6			3			3		
Detector Phase	2	2		1	6		3	3		3	3	
Switch Phase												
Minimum Initial (s)	12.0	12.0		6.0	12.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.9	30.9		11.2	30.9		30.9	30.9		30.9	30.9	
Total Split (s)	45.0	45.0		40.0	45.0		40.0	40.0		40.0	40.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	36.0%	36.0%		32.0%	36.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	40.1	40.1		34.8	40.1		35.1	35.1		35.1	35.1	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.7	1.7		2.0	1.7		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.9	4.9		5.2	4.9		4.9	4.9		4.9	4.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.5	3.5		2.0	3.5		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	40.8	40.8		58.5	58.8		22.9	22.9		22.9	22.9	
Actuated g/C Ratio	0.44	0.44		0.64	0.64		0.25	0.25		0.25	0.25	
v/c Ratio	0.20	0.59		0.55	0.31		0.39	0.80		0.44	0.48	
Control Delay (s/veh)	21.3	25.2		12.5	9.2		34.2	38.6		44.7	24.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	21.3	25.2		12.5	9.2		34.2	38.6		44.7	24.9	
LOS	C	C		B	A		C	D		D	C	
Approach Delay (s/veh)		24.6			10.6			37.8			28.1	
Approach LOS		C			B			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 125
Actuated Cycle Length: 91.7
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay (s/veh): 23.6 Intersection LOS: C
Intersection Capacity Utilization 86.0% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 19:

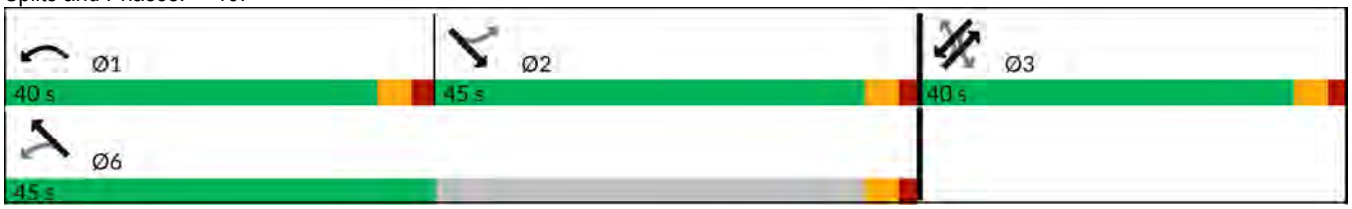


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	92	324	105	151	362	46	88	80	126	88	164	97
Future Volume (vph)	92	324	105	151	362	46	88	80	126	88	164	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	157		0	124		0	94		0	106		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.983			0.908			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1794	0	1770	1831	0	1770	1691	0	1770	1758	0
Flt Permitted	0.523			0.371			0.387			0.504		
Satd. Flow (perm)	974	1794	0	691	1831	0	721	1691	0	939	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			10			63			24	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			179			1299			243	
Travel Time (s)		3.4			4.1			29.5			5.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	92	324	105	151	362	46	88	80	126	88	164	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	429	0	151	408	0	88	206	0	88	261	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		1	0		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	0		20	0		20	20		20	20	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)				0			0	0		0	0	
Detector 1 Size(ft)				20			20	20		20	20	
Detector 1 Type				Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0			0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			3			3	
Permitted Phases	2			6			3			3		
Detector Phase	2	2		1	6		3	3		3	3	
Switch Phase												
Minimum Initial (s)	12.0	12.0		6.0	12.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.9	30.9		11.2	30.9		30.9	30.9		30.9	30.9	
Total Split (s)	45.0	45.0		40.0	45.0		40.0	40.0		40.0	40.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	36.0%	36.0%		32.0%	36.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	40.1	40.1		34.8	40.1		35.1	35.1		35.1	35.1	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.7	1.7		2.0	1.7		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.9	4.9		5.2	4.9		4.9	4.9		4.9	4.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.5	3.5		2.0	3.5		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	40.4	40.4		53.0	53.3		16.4	16.4		16.4	16.4	
Actuated g/C Ratio	0.51	0.51		0.67	0.67		0.21	0.21		0.21	0.21	
v/c Ratio	0.19	0.47		0.27	0.33		0.59	0.52		0.46	0.69	
Control Delay (s/veh)	13.9	15.6		6.9	7.0		45.9	23.9		35.7	36.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	13.9	15.6		6.9	7.0		45.9	23.9		35.7	36.1	
LOS	B	B		A	A		D	C		D	D	
Approach Delay (s/veh)		15.3			7.0			30.5			36.0	
Approach LOS		B			A			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 79.5			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 19.4		Intersection LOS: B	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 19:

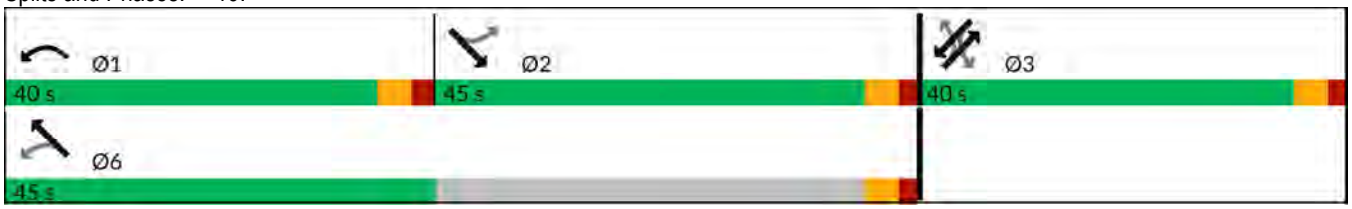


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	84	353	114	277	336	29	88	105	248	42	88	130
Future Volume (vph)	84	353	114	277	336	29	88	105	248	42	88	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	157		0	124		0	94		0	106		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.988			0.895			0.911	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1794	0	1770	1840	0	1770	1667	0	1770	1697	0
Flt Permitted	0.544			0.316			0.486			0.233		
Satd. Flow (perm)	1013	1794	0	589	1840	0	905	1667	0	434	1697	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			7			95			59	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			179			1299			243	
Travel Time (s)		3.4			4.1			29.5			5.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	84	353	114	277	336	29	88	105	248	42	88	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	467	0	277	365	0	88	353	0	42	218	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		1	0		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	0		20	0		20	20		20	20	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)				0			0	0		0	0	
Detector 1 Size(ft)				20			20	20		20	20	
Detector 1 Type				Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0			0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			3			3	
Permitted Phases	2			6			3			3		
Detector Phase	2	2		1	6		3	3		3	3	
Switch Phase												
Minimum Initial (s)	12.0	12.0		6.0	12.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.9	30.9		11.2	30.9		30.9	30.9		30.9	30.9	
Total Split (s)	45.0	45.0		40.0	45.0		40.0	40.0		40.0	40.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	36.0%	36.0%		32.0%	36.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	40.1	40.1		34.8	40.1		35.1	35.1		35.1	35.1	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.7	1.7		2.0	1.7		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.9	4.9		5.2	4.9		4.9	4.9		4.9	4.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.5	3.5		2.0	3.5		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	40.8	40.8		57.5	57.8		20.1	20.1		20.1	20.1	
Actuated g/C Ratio	0.46	0.46		0.65	0.66		0.23	0.23		0.23	0.23	
v/c Ratio	0.18	0.56		0.51	0.30		0.43	0.78		0.42	0.50	
Control Delay (s/veh)	19.1	22.4		10.9	8.1		35.9	35.3		43.3	25.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	19.1	22.4		10.9	8.1		35.9	35.3		43.3	25.3	
LOS	B	C		B	A		D	D		D	C	
Approach Delay (s/veh)		21.9			9.4			35.5			28.2	
Approach LOS		C			A			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 87.9			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 21.7		Intersection LOS: C	
Intersection Capacity Utilization 83.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 19:

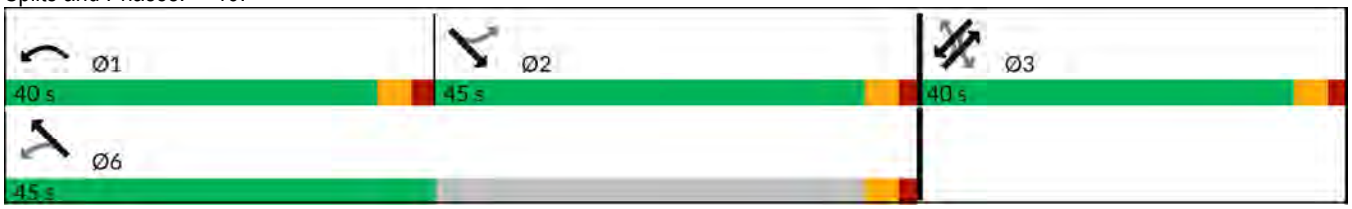


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	97	329	105	176	386	46	88	85	131	88	169	97
Future Volume (vph)	97	329	105	176	386	46	88	85	131	88	169	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	157		0	124		0	94		0	106		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.964			0.984			0.909			0.945	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1796	0	1770	1833	0	1770	1693	0	1770	1760	0
Flt Permitted	0.511			0.364			0.380			0.484		
Satd. Flow (perm)	952	1796	0	678	1833	0	708	1693	0	902	1760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			10			62			23	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			179			1299			243	
Travel Time (s)		3.4			4.1			29.5			5.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	97	329	105	176	386	46	88	85	131	88	169	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	97	434	0	176	432	0	88	216	0	88	266	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		1	0		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	0		20	0		20	20		20	20	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)				0			0	0		0	0	
Detector 1 Size(ft)				20			20	20		20	20	
Detector 1 Type				Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0			0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			3			3	
Permitted Phases	2			6			3			3		
Detector Phase	2	2		1	6		3	3		3	3	
Switch Phase												
Minimum Initial (s)	12.0	12.0		6.0	12.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.9	30.9		11.2	30.9		30.9	30.9		30.9	30.9	
Total Split (s)	45.0	45.0		40.0	45.0		40.0	40.0		40.0	40.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	36.0%	36.0%		32.0%	36.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	40.1	40.1		34.8	40.1		35.1	35.1		35.1	35.1	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.7	1.7		2.0	1.7		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.9	4.9		5.2	4.9		4.9	4.9		4.9	4.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.5	3.5		2.0	3.5		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	40.4	40.4		53.5	53.8		17.0	17.0		17.0	17.0	
Actuated g/C Ratio	0.50	0.50		0.66	0.67		0.21	0.21		0.21	0.21	
v/c Ratio	0.20	0.48		0.31	0.35		0.59	0.53		0.47	0.69	
Control Delay (s/veh)	14.9	16.5		7.5	7.4		46.0	24.8		36.4	36.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	14.9	16.5		7.5	7.4		46.0	24.8		36.4	36.4	
LOS	B	B		A	A		D	C		D	D	
Approach Delay (s/veh)		16.2			7.5			31.0			36.4	
Approach LOS		B			A			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 80.7			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 19.7		Intersection LOS: B	
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 19:

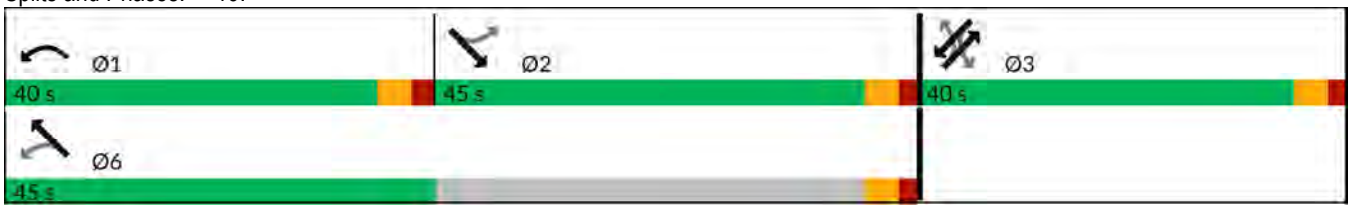


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	94	363	114	287	346	29	88	129	272	42	93	130
Future Volume (vph)	94	363	114	287	346	29	88	129	272	42	93	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	157		0	124		0	94		0	106		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.964			0.988			0.898			0.913	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1796	0	1770	1840	0	1770	1673	0	1770	1701	0
Flt Permitted	0.539			0.288			0.493			0.199		
Satd. Flow (perm)	1004	1796	0	536	1840	0	918	1673	0	371	1701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			7			84			56	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			179			1299			243	
Travel Time (s)		3.4			4.1			29.5			5.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	94	363	114	287	346	29	88	129	272	42	93	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	477	0	287	375	0	88	401	0	42	223	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		1	0		1	1		1	1	
Detector Template				Left			Left			Left		
Leading Detector (ft)	0	0		20	0		20	20		20	20	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)				0			0	0		0	0	
Detector 1 Size(ft)				20			20	20		20	20	
Detector 1 Type				Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Queue (s)				0.0			0.0	0.0		0.0	0.0	
Detector 1 Delay (s)				0.0			0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			3			3	
Permitted Phases	2			6			3			3		
Detector Phase	2	2		1	6		3	3		3	3	
Switch Phase												
Minimum Initial (s)	12.0	12.0		6.0	12.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.9	30.9		11.2	30.9		30.9	30.9		30.9	30.9	
Total Split (s)	45.0	45.0		40.0	45.0		40.0	40.0		40.0	40.0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	36.0%	36.0%		32.0%	36.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	40.1	40.1		34.8	40.1		35.1	35.1		35.1	35.1	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.2	3.2		3.2	3.2	
All-Red Time (s)	1.7	1.7		2.0	1.7		1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.9	4.9		5.2	4.9		4.9	4.9		4.9	4.9	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.5	3.5		2.0	3.5		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	15.0	15.0			15.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	40.8	40.8		58.9	59.2		23.9	23.9		23.9	23.9	
Actuated g/C Ratio	0.44	0.44		0.63	0.64		0.26	0.26		0.26	0.26	
v/c Ratio	0.21	0.60		0.56	0.32		0.37	0.82		0.44	0.47	
Control Delay (s/veh)	22.0	26.1		13.1	9.5		33.8	39.8		45.6	24.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	22.0	26.1		13.1	9.5		33.8	39.8		45.6	24.9	
LOS	C	C		B	A		C	D		D	C	
Approach Delay (s/veh)		25.5			11.1			38.7			28.2	
Approach LOS		C			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 93			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay (s/veh): 24.3		Intersection LOS: C	
Intersection Capacity Utilization 87.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 19:

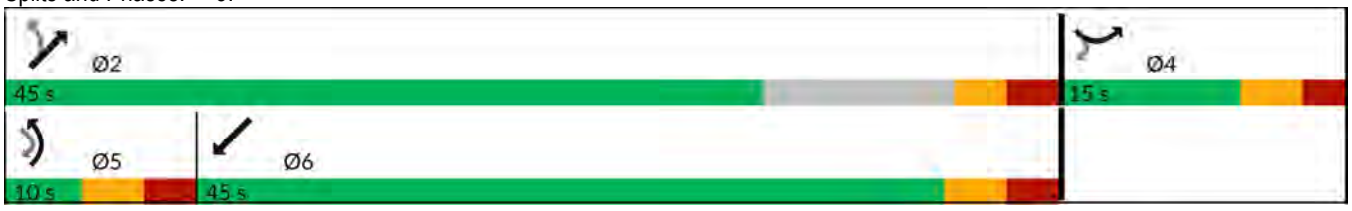


Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	20	88	104	316	356	28
Future Volume (vph)	20	88	104	316	356	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	46	0	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1844	0
Flt Permitted	0.950		0.458			
Satd. Flow (perm)	1770	1583	853	1863	1844	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		88			9	
Link Speed (mph)	30			30	30	
Link Distance (ft)	319			365	1299	
Travel Time (s)	7.3			8.3	29.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	20	88	104	316	356	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	88	104	316	384	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template	Left	Right	Left			
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0			
Detector 1 Size(ft)	20	20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4 5	2			
Detector Phase	4	4 5	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0		6.0	5.0	5.0	
Minimum Split (s)	23.5		23.9	23.4	24.9	
Total Split (s)	15.0		10.0	45.0	45.0	

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Total Split (%)	21.4%		14.3%	64.3%	64.3%	
Maximum Green (s)	9.5		4.1	39.6	39.1	
Yellow Time (s)	3.2		3.2	2.7	3.2	
All-Red Time (s)	2.3		2.7	2.7	2.7	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.9	5.4	5.9	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	Max	Max	
Walk Time (s)	7.0				7.0	
Flash Don't Walk (s)	9.0				12.0	
Pedestrian Calls (#/hr)	0				0	
Act Effct Green (s)	6.7	14.5	50.3	52.0	43.8	
Actuated g/C Ratio	0.10	0.22	0.76	0.79	0.66	
v/c Ratio	0.11	0.21	0.15	0.21	0.31	
Control Delay (s/veh)	28.9	6.6	3.2	3.1	7.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	28.9	6.6	3.2	3.1	7.7	
LOS	C	A	A	A	A	
Approach Delay (s/veh)	10.7			3.1	7.7	
Approach LOS	B			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 65.9			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay (s/veh): 5.9		Intersection LOS: A	
Intersection Capacity Utilization 45.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3:

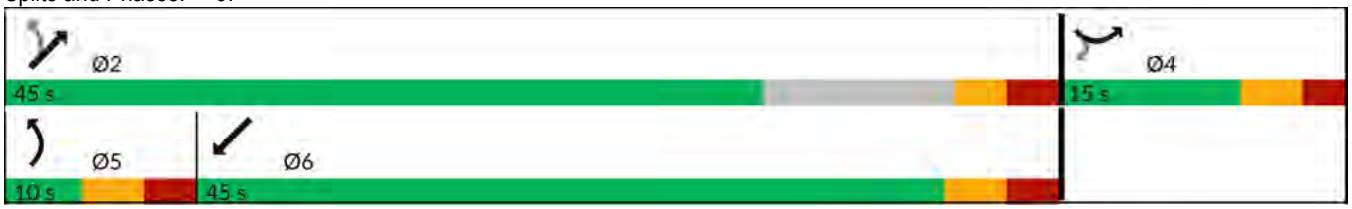


Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	44	140	152	384	484	44
Future Volume (vph)	44	140	152	384	484	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	46	0	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.989	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1842	0
Flt Permitted	0.950		0.359			
Satd. Flow (perm)	1770	1583	669	1863	1842	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		140			11	
Link Speed (mph)	30			30	30	
Link Distance (ft)	319			365	1299	
Travel Time (s)	7.3			8.3	29.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	44	140	152	384	484	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	140	152	384	528	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template	Left	Right	Left			
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0			
Detector 1 Size(ft)	20	20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	5.0	5.0	
Minimum Split (s)	23.5	23.5	23.9	23.4	24.9	
Total Split (s)	15.0	15.0	10.0	45.0	45.0	

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Total Split (%)	21.4%	21.4%	14.3%	64.3%	64.3%	
Maximum Green (s)	9.5	9.5	4.1	39.6	39.1	
Yellow Time (s)	3.2	3.2	3.2	2.7	3.2	
All-Red Time (s)	2.3	2.3	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.9	5.4	5.9	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0			7.0	
Flash Don't Walk (s)	9.0	9.0			12.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	7.4	7.4	47.6	49.7	41.8	
Actuated g/C Ratio	0.12	0.12	0.75	0.78	0.66	
v/c Ratio	0.21	0.45	0.26	0.26	0.43	
Control Delay (s/veh)	30.1	11.2	4.2	3.6	9.4	
Queue Delay	0.0	0.0	0.0	0.4	0.0	
Total Delay (s/veh)	30.1	11.2	4.2	4.0	9.4	
LOS	C	B	A	A	A	
Approach Delay (s/veh)	15.7			4.0	9.4	
Approach LOS	B			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 63.5			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay (s/veh): 8.0		Intersection LOS: A	
Intersection Capacity Utilization 56.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3:

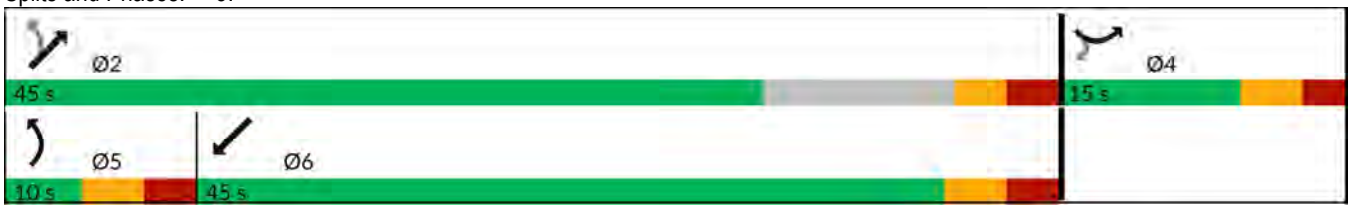


Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	28	127	354	332	374	47
Future Volume (vph)	28	127	354	332	374	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	46	0	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.985	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1835	0
Flt Permitted	0.950		0.424			
Satd. Flow (perm)	1770	1583	790	1863	1835	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		127			15	
Link Speed (mph)	30			30	30	
Link Distance (ft)	319			365	1299	
Travel Time (s)	7.3			8.3	29.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	28	127	354	332	374	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	127	354	332	421	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template	Left	Right	Left			
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0			
Detector 1 Size(ft)	20	20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	5.0	5.0	
Minimum Split (s)	23.5	23.5	23.9	23.4	24.9	
Total Split (s)	15.0	15.0	10.0	45.0	45.0	

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Total Split (%)	21.4%	21.4%	14.3%	64.3%	64.3%	
Maximum Green (s)	9.5	9.5	4.1	39.6	39.1	
Yellow Time (s)	3.2	3.2	3.2	2.7	3.2	
All-Red Time (s)	2.3	2.3	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.9	5.4	5.9	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0			7.0	
Flash Don't Walk (s)	9.0	9.0			12.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	7.0	7.0	49.5	51.3	39.4	
Actuated g/C Ratio	0.11	0.11	0.76	0.79	0.60	
v/c Ratio	0.15	0.45	0.54	0.23	0.38	
Control Delay (s/veh)	29.1	11.7	6.8	3.3	8.6	
Queue Delay	0.0	0.0	1.4	0.0	0.0	
Total Delay (s/veh)	29.1	11.7	8.2	3.3	8.6	
LOS	C	B	A	A	A	
Approach Delay (s/veh)	14.8			5.8	8.6	
Approach LOS	B			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 65.3			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay (s/veh): 7.9		Intersection LOS: A	
Intersection Capacity Utilization 61.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3:

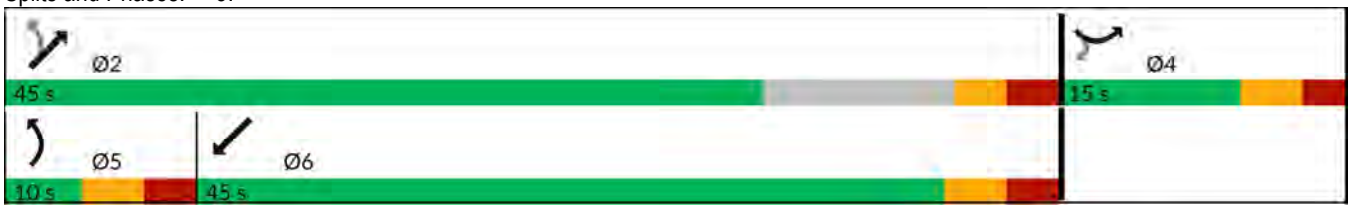


Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	81	357	212	404	509	64
Future Volume (vph)	81	357	212	404	509	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	46	0	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.985	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1835	0
Flt Permitted	0.950		0.313			
Satd. Flow (perm)	1770	1583	583	1863	1835	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		357			15	
Link Speed (mph)	30			30	30	
Link Distance (ft)	319			365	1299	
Travel Time (s)	7.3			8.3	29.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	81	357	212	404	509	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	357	212	404	573	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template	Left	Right	Left			
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0			
Detector 1 Size(ft)	20	20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	5.0	5.0	
Minimum Split (s)	23.5	23.5	23.9	23.4	24.9	
Total Split (s)	15.0	15.0	10.0	45.0	45.0	

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Total Split (%)	21.4%	21.4%	14.3%	64.3%	64.3%	
Maximum Green (s)	9.5	9.5	4.1	39.6	39.1	
Yellow Time (s)	3.2	3.2	3.2	2.7	3.2	
All-Red Time (s)	2.3	2.3	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.9	5.4	5.9	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0			7.0	
Flash Don't Walk (s)	9.0	9.0			12.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	8.1	8.1	49.1	49.6	39.1	
Actuated g/C Ratio	0.12	0.12	0.72	0.72	0.57	
v/c Ratio	0.39	0.71	0.43	0.30	0.54	
Control Delay (s/veh)	33.6	12.5	6.3	4.2	11.6	
Queue Delay	0.0	0.0	0.0	0.6	0.0	
Total Delay (s/veh)	33.6	12.5	6.3	4.8	11.6	
LOS	C	B	A	A	B	
Approach Delay (s/veh)	16.4			5.3	11.6	
Approach LOS	B			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 68.6			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 10.5		Intersection LOS: B	
Intersection Capacity Utilization 62.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3:

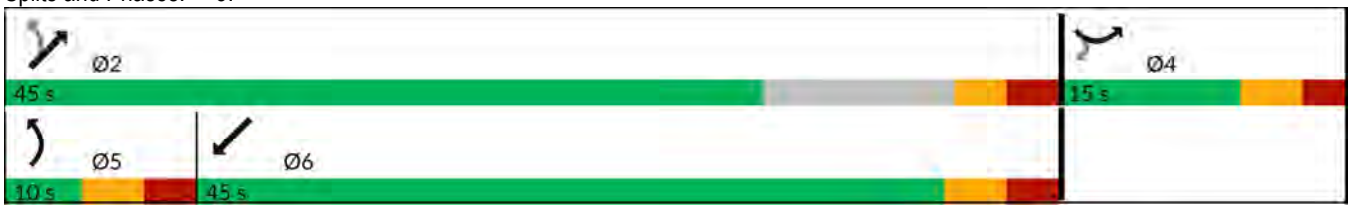


Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	21	92	109	332	374	29
Future Volume (vph)	21	92	109	332	374	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	46	0	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1844	0
Flt Permitted	0.950		0.444			
Satd. Flow (perm)	1770	1583	827	1863	1844	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		92			9	
Link Speed (mph)	30			30	30	
Link Distance (ft)	319			365	1299	
Travel Time (s)	7.3			8.3	29.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	21	92	109	332	374	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	92	109	332	403	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template	Left	Right	Left			
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0			
Detector 1 Size(ft)	20	20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	5.0	5.0	
Minimum Split (s)	23.5	23.5	23.9	23.4	24.9	
Total Split (s)	15.0	15.0	10.0	45.0	45.0	

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Total Split (%)	21.4%	21.4%	14.3%	64.3%	64.3%	
Maximum Green (s)	9.5	9.5	4.1	39.6	39.1	
Yellow Time (s)	3.2	3.2	3.2	2.7	3.2	
All-Red Time (s)	2.3	2.3	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.9	5.4	5.9	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0			7.0	
Flash Don't Walk (s)	9.0	9.0			12.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	6.9	6.9	50.3	52.0	43.8	
Actuated g/C Ratio	0.10	0.10	0.76	0.79	0.66	
v/c Ratio	0.11	0.37	0.16	0.23	0.33	
Control Delay (s/veh)	28.7	11.9	3.4	3.3	8.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	28.7	11.9	3.4	3.3	8.0	
LOS	C	B	A	A	A	
Approach Delay (s/veh)	15.0			3.3	8.0	
Approach LOS	B			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 66.1			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay (s/veh): 6.6		Intersection LOS: A	
Intersection Capacity Utilization 46.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3:

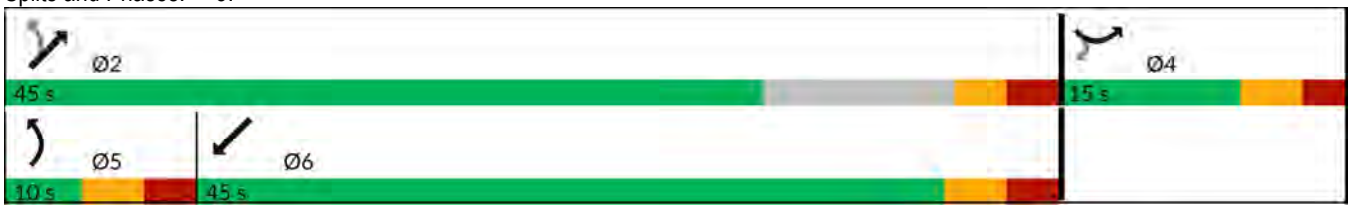


Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	46	147	160	404	509	46
Future Volume (vph)	46	147	160	404	509	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	46	0	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.989	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1842	0
Flt Permitted	0.950		0.342			
Satd. Flow (perm)	1770	1583	637	1863	1842	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		147			11	
Link Speed (mph)	30			30	30	
Link Distance (ft)	319			365	1299	
Travel Time (s)	7.3			8.3	29.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	46	147	160	404	509	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	147	160	404	555	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template	Left	Right	Left			
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0			
Detector 1 Size(ft)	20	20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	5.0	5.0	
Minimum Split (s)	23.5	23.5	23.9	23.4	24.9	
Total Split (s)	15.0	15.0	10.0	45.0	45.0	

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Total Split (%)	21.4%	21.4%	14.3%	64.3%	64.3%	
Maximum Green (s)	9.5	9.5	4.1	39.6	39.1	
Yellow Time (s)	3.2	3.2	3.2	2.7	3.2	
All-Red Time (s)	2.3	2.3	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.9	5.4	5.9	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0			7.0	
Flash Don't Walk (s)	9.0	9.0			12.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	7.4	7.4	47.7	49.7	41.9	
Actuated g/C Ratio	0.12	0.12	0.75	0.78	0.66	
v/c Ratio	0.22	0.47	0.29	0.28	0.46	
Control Delay (s/veh)	30.3	11.2	4.4	3.7	9.7	
Queue Delay	0.0	0.0	0.0	0.4	0.0	
Total Delay (s/veh)	30.3	11.2	4.4	4.1	9.7	
LOS	C	B	A	A	A	
Approach Delay (s/veh)	15.7			4.2	9.7	
Approach LOS	B			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 63.6			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay (s/veh): 8.2		Intersection LOS: A	
Intersection Capacity Utilization 57.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3:

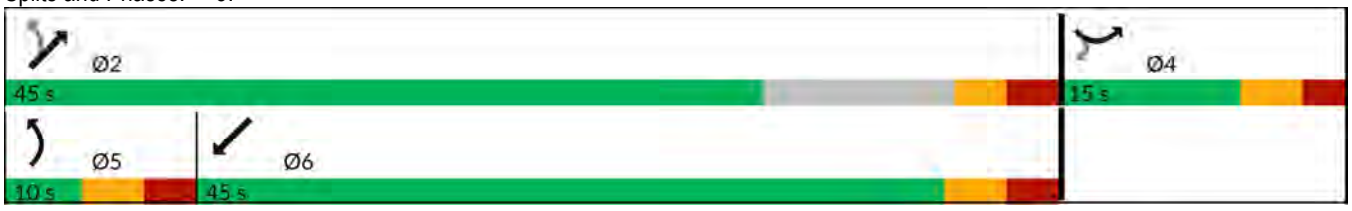


Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	31	142	454	332	374	54
Future Volume (vph)	31	142	454	332	374	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	46	0	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.983	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1831	0
Flt Permitted	0.950		0.419			
Satd. Flow (perm)	1770	1583	780	1863	1831	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		142			17	
Link Speed (mph)	30			30	30	
Link Distance (ft)	319			365	1299	
Travel Time (s)	7.3			8.3	29.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	31	142	454	332	374	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	142	454	332	428	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template	Left	Right	Left			
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0			
Detector 1 Size(ft)	20	20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	5.0	5.0	
Minimum Split (s)	23.5	23.5	23.9	23.4	24.9	
Total Split (s)	15.0	15.0	10.0	45.0	45.0	

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Total Split (%)	21.4%	21.4%	14.3%	64.3%	64.3%	
Maximum Green (s)	9.5	9.5	4.1	39.6	39.1	
Yellow Time (s)	3.2	3.2	3.2	2.7	3.2	
All-Red Time (s)	2.3	2.3	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.9	5.4	5.9	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0			7.0	
Flash Don't Walk (s)	9.0	9.0			12.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	7.1	7.1	49.4	51.2	39.4	
Actuated g/C Ratio	0.11	0.11	0.76	0.78	0.60	
v/c Ratio	0.16	0.48	0.70	0.23	0.39	
Control Delay (s/veh)	29.4	11.7	11.9	3.3	8.6	
Queue Delay	0.0	0.0	2.5	0.0	0.0	
Total Delay (s/veh)	29.4	11.7	14.4	3.3	8.6	
LOS	C	B	B	A	A	
Approach Delay (s/veh)	14.8			9.7	8.6	
Approach LOS	B			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 65.3			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 10.0		Intersection LOS: B	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3:

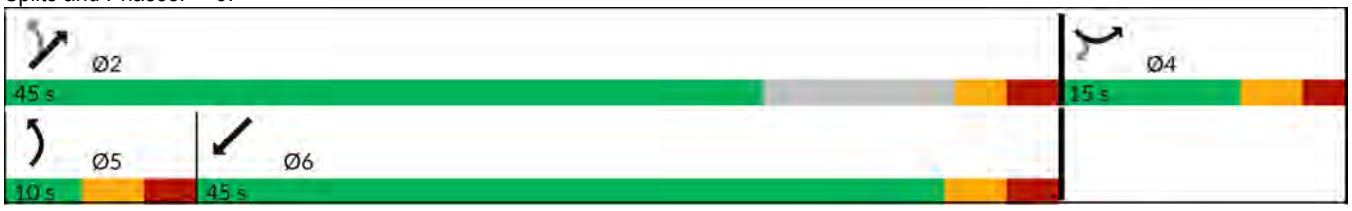


Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	94	436	232	404	509	70
Future Volume (vph)	94	436	232	404	509	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	46	0	190			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.984	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1833	0
Flt Permitted	0.950		0.308			
Satd. Flow (perm)	1770	1583	574	1863	1833	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		406			16	
Link Speed (mph)	30			30	30	
Link Distance (ft)	319			365	1299	
Travel Time (s)	7.3			8.3	29.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	94	436	232	404	509	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	436	232	404	579	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	0	0	
Detector Template	Left	Right	Left			
Leading Detector (ft)	20	20	20	0	0	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0			
Detector 1 Size(ft)	20	20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	5.0	5.0	
Minimum Split (s)	23.5	23.5	23.9	23.4	24.9	
Total Split (s)	15.0	15.0	10.0	45.0	45.0	

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Total Split (%)	21.4%	21.4%	14.3%	64.3%	64.3%	
Maximum Green (s)	9.5	9.5	4.1	39.6	39.1	
Yellow Time (s)	3.2	3.2	3.2	2.7	3.2	
All-Red Time (s)	2.3	2.3	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.9	5.4	5.9	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Max	Max	
Walk Time (s)	7.0	7.0			7.0	
Flash Don't Walk (s)	9.0	9.0			12.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	8.3	8.3	49.1	49.6	39.1	
Actuated g/C Ratio	0.12	0.12	0.71	0.72	0.57	
v/c Ratio	0.44	0.80	0.48	0.30	0.55	
Control Delay (s/veh)	34.9	17.1	7.1	4.3	11.8	
Queue Delay	0.0	0.0	0.0	0.6	0.0	
Total Delay (s/veh)	34.9	17.1	7.1	4.9	11.8	
LOS	C	B	A	A	B	
Approach Delay (s/veh)	20.3			5.7	11.8	
Approach LOS	C			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 68.9			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 12.1		Intersection LOS: B	
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3:

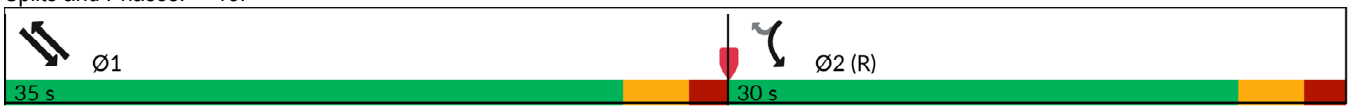


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	628	432	0	80	140
Future Volume (vph)	0	628	432	0	80	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						140
Link Speed (mph)		30	30		30	
Link Distance (ft)		287	200		286	
Travel Time (s)		6.5	4.5		6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	628	432	0	80	140
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	628	432	0	80	140
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)		6	6		20	20
Trailing Detector (ft)		0	0		0	0
Detector 1 Position(ft)		0	0		0	0
Detector 1 Size(ft)		6	6		20	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		1	1		2	
Permitted Phases						2
Detector Phase		1	1		2	2
Switch Phase						
Minimum Initial (s)		15.0	15.0		6.0	6.0
Minimum Split (s)		24.0	24.0		24.2	24.2
Total Split (s)		35.0	35.0		30.0	30.0
Total Split (%)		53.8%	53.8%		46.2%	46.2%
Maximum Green (s)		30.0	30.0		24.8	24.8
Yellow Time (s)		3.2	3.2		3.2	3.2

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
All-Red Time (s)		1.8	1.8		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.2	5.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)		3.0	3.0		2.0	2.0
Recall Mode		None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		12.0	12.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		21.8	21.8		33.0	33.0
Actuated g/C Ratio		0.34	0.34		0.51	0.51
v/c Ratio		0.53	0.69		0.09	0.16
Control Delay (s/veh)		18.5	8.4		10.7	3.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay (s/veh)		18.5	8.4		10.7	3.1
LOS		B	A		B	A
Approach Delay (s/veh)		18.5	8.4		5.8	
Approach LOS		B	A		A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SWL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 12.9		Intersection LOS: B	
Intersection Capacity Utilization 40.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 15:

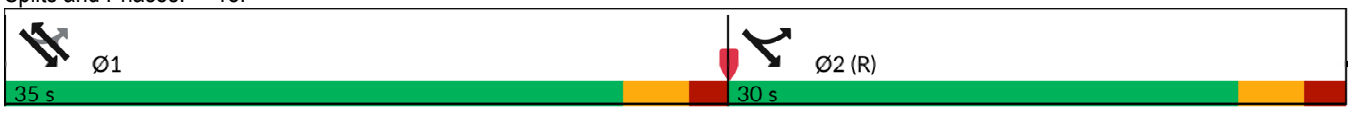


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	160	468	432	80	0	0
Future Volume (vph)	160	468	432	80	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	127			132	0	0
Storage Lanes	1			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	1863	1583	0	0
Flt Permitted	0.310					
Satd. Flow (perm)	577	3539	1863	1583	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				80		
Link Speed (mph)		30	30		30	
Link Distance (ft)		200	348		259	
Travel Time (s)		4.5	7.9		5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	468	432	80	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	468	432	80	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1	1	1	
Detector Template	Left			Right	Left	
Leading Detector (ft)	20	6	6	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		
Detector 1 Size(ft)	20	6	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		
Turn Type	pm+pt	NA	NA	Perm		
Protected Phases	2	1 2	1			
Permitted Phases	1 2			1		
Detector Phase	2	1 2	1	1		
Switch Phase						
Minimum Initial (s)	6.0		15.0	15.0		
Minimum Split (s)	23.2		24.0	24.0		
Total Split (s)	30.0		35.0	35.0		

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Total Split (%)	46.2%		53.8%	53.8%		
Maximum Green (s)	24.8		30.0	30.0		
Yellow Time (s)	3.2		3.2	3.2		
All-Red Time (s)	2.0		1.8	1.8		
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	5.2		5.0	5.0		
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Walk Time (s)			7.0	7.0		
Flash Don't Walk (s)			12.0	12.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	54.6	65.0	21.9	21.9		
Actuated g/C Ratio	0.84	1.00	0.34	0.34		
v/c Ratio	0.15	0.13	0.69	0.14		
Control Delay (s/veh)	2.9	0.1	24.0	3.8		
Queue Delay	0.4	0.0	0.0	0.0		
Total Delay (s/veh)	3.3	0.1	24.0	3.8		
LOS	A	A	C	A		
Approach Delay (s/veh)		0.9	20.8			
Approach LOS		A	C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SETL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 9.9		Intersection LOS: A	
Intersection Capacity Utilization 40.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 18:

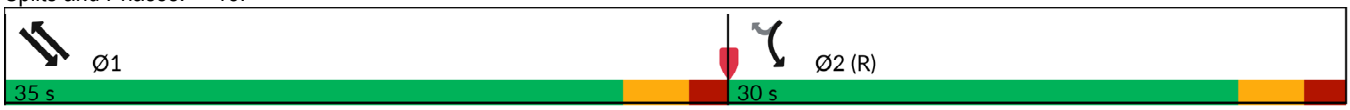


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	660	460	0	104	112
Future Volume (vph)	0	660	460	0	104	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						112
Link Speed (mph)		30	30		30	
Link Distance (ft)		287	200		286	
Travel Time (s)		6.5	4.5		6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	660	460	0	104	112
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	660	460	0	104	112
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)		6	6		20	20
Trailing Detector (ft)		0	0		0	0
Detector 1 Position(ft)		0	0		0	0
Detector 1 Size(ft)		6	6		20	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		1	1		2	
Permitted Phases						2
Detector Phase		1	1		2	2
Switch Phase						
Minimum Initial (s)		15.0	15.0		6.0	6.0
Minimum Split (s)		24.0	24.0		24.2	24.2
Total Split (s)		35.0	35.0		30.0	30.0
Total Split (%)		53.8%	53.8%		46.2%	46.2%
Maximum Green (s)		30.0	30.0		24.8	24.8
Yellow Time (s)		3.2	3.2		3.2	3.2

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
All-Red Time (s)		1.8	1.8		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.2	5.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)		3.0	3.0		2.0	2.0
Recall Mode		None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		12.0	12.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		22.5	22.5		32.3	32.3
Actuated g/C Ratio		0.35	0.35		0.50	0.50
v/c Ratio		0.54	0.71		0.12	0.13
Control Delay (s/veh)		18.1	8.6		11.3	3.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay (s/veh)		18.1	8.6		11.3	3.4
LOS		B	A		B	A
Approach Delay (s/veh)		18.1	8.6		7.2	
Approach LOS		B	A		A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SWL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 13.1		Intersection LOS: B	
Intersection Capacity Utilization 43.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 15:

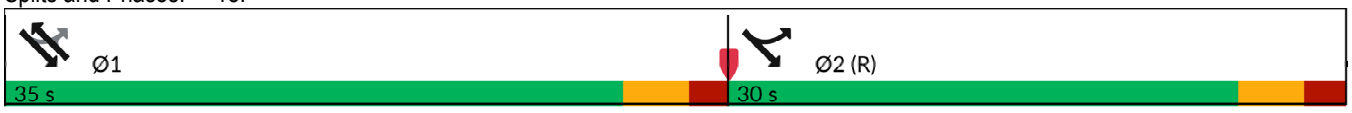


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	188	472	460	100	0	0
Future Volume (vph)	188	472	460	100	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	127			132	0	0
Storage Lanes	1			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	1863	1583	0	0
Flt Permitted	0.291					
Satd. Flow (perm)	542	3539	1863	1583	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				100		
Link Speed (mph)		30	30		30	
Link Distance (ft)		200	348		259	
Travel Time (s)		4.5	7.9		5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	188	472	460	100	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	188	472	460	100	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1	1	1	
Detector Template	Left			Right	Left	
Leading Detector (ft)	20	6	6	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		
Detector 1 Size(ft)	20	6	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		
Turn Type	pm+pt	NA	NA	Perm		
Protected Phases	2	1 2	1			
Permitted Phases	1 2			1		
Detector Phase	2	1 2	1	1		
Switch Phase						
Minimum Initial (s)	6.0		15.0	15.0		
Minimum Split (s)	23.2		24.0	24.0		
Total Split (s)	30.0		35.0	35.0		

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Total Split (%)	46.2%		53.8%	53.8%		
Maximum Green (s)	24.8		30.0	30.0		
Yellow Time (s)	3.2		3.2	3.2		
All-Red Time (s)	2.0		1.8	1.8		
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	5.2		5.0	5.0		
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Walk Time (s)			7.0	7.0		
Flash Don't Walk (s)			12.0	12.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	54.6	65.0	22.8	22.8		
Actuated g/C Ratio	0.84	1.00	0.35	0.35		
v/c Ratio	0.18	0.13	0.70	0.16		
Control Delay (s/veh)	4.2	0.1	23.7	3.4		
Queue Delay	0.5	0.0	0.0	0.0		
Total Delay (s/veh)	4.7	0.1	23.7	3.4		
LOS	A	A	C	A		
Approach Delay (s/veh)		1.4	20.0			
Approach LOS		A	C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SETL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 10.0		Intersection LOS: A	
Intersection Capacity Utilization 43.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 18:

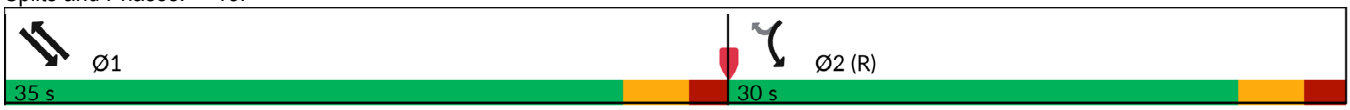


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	667	472	0	84	165
Future Volume (vph)	0	667	472	0	84	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						165
Link Speed (mph)		30	30		30	
Link Distance (ft)		287	200		286	
Travel Time (s)		6.5	4.5		6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	667	472	0	84	165
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	667	472	0	84	165
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)		6	6		20	20
Trailing Detector (ft)		0	0		0	0
Detector 1 Position(ft)		0	0		0	0
Detector 1 Size(ft)		6	6		20	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		1	1		2	
Permitted Phases						2
Detector Phase		1	1		2	2
Switch Phase						
Minimum Initial (s)		15.0	15.0		6.0	6.0
Minimum Split (s)		24.0	24.0		24.2	24.2
Total Split (s)		35.0	35.0		30.0	30.0
Total Split (%)		53.8%	53.8%		46.2%	46.2%
Maximum Green (s)		30.0	30.0		24.8	24.8
Yellow Time (s)		3.2	3.2		3.2	3.2

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
All-Red Time (s)		1.8	1.8		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.2	5.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)		3.0	3.0		2.0	2.0
Recall Mode		None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		12.0	12.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		22.9	22.9		31.9	31.9
Actuated g/C Ratio		0.35	0.35		0.49	0.49
v/c Ratio		0.53	0.72		0.10	0.19
Control Delay (s/veh)		17.7	8.5		11.5	3.2
Queue Delay		0.0	0.0		0.0	0.0
Total Delay (s/veh)		17.7	8.5		11.5	3.2
LOS		B	A		B	A
Approach Delay (s/veh)		17.7	8.5		6.0	
Approach LOS		B	A		A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SWL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 12.4		Intersection LOS: B	
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 15:

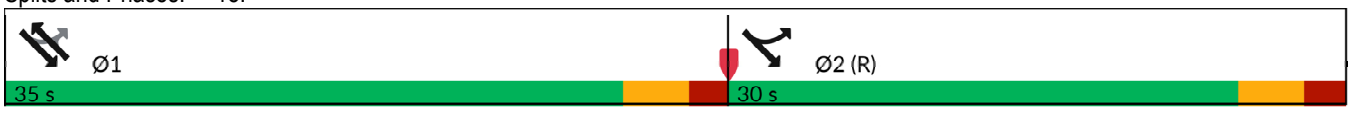


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	172	495	472	84	0	0
Future Volume (vph)	172	495	472	84	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	127			132	0	0
Storage Lanes	1			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	1863	1583	0	0
Flt Permitted	0.280					
Satd. Flow (perm)	522	3539	1863	1583	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				84		
Link Speed (mph)		30	30		30	
Link Distance (ft)		200	348		259	
Travel Time (s)		4.5	7.9		5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	172	495	472	84	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	172	495	472	84	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1	1	1	
Detector Template	Left			Right	Left	
Leading Detector (ft)	20	6	6	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		
Detector 1 Size(ft)	20	6	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		
Turn Type	pm+pt	NA	NA	Perm		
Protected Phases	2	1 2	1			
Permitted Phases	1 2			1		
Detector Phase	2	1 2	1	1		
Switch Phase						
Minimum Initial (s)	6.0		15.0	15.0		
Minimum Split (s)	23.2		24.0	24.0		
Total Split (s)	30.0		35.0	35.0		

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Total Split (%)	46.2%		53.8%	53.8%		
Maximum Green (s)	24.8		30.0	30.0		
Yellow Time (s)	3.2		3.2	3.2		
All-Red Time (s)	2.0		1.8	1.8		
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	5.2		5.0	5.0		
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Walk Time (s)			7.0	7.0		
Flash Don't Walk (s)			12.0	12.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	54.6	65.0	23.0	23.0		
Actuated g/C Ratio	0.84	1.00	0.35	0.35		
v/c Ratio	0.16	0.14	0.72	0.14		
Control Delay (s/veh)	4.1	0.1	23.9	3.5		
Queue Delay	0.5	0.0	0.0	0.0		
Total Delay (s/veh)	4.5	0.1	23.9	3.5		
LOS	A	A	C	A		
Approach Delay (s/veh)		1.2	20.8			
Approach LOS		A	C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SETL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 10.1		Intersection LOS: B	
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 18:

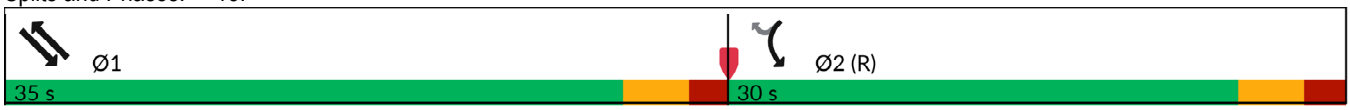


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	729	490	0	109	125
Future Volume (vph)	0	729	490	0	109	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						125
Link Speed (mph)		30	30		30	
Link Distance (ft)		287	200		286	
Travel Time (s)		6.5	4.5		6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	729	490	0	109	125
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	729	490	0	109	125
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)		6	6		20	20
Trailing Detector (ft)		0	0		0	0
Detector 1 Position(ft)		0	0		0	0
Detector 1 Size(ft)		6	6		20	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		1	1		2	
Permitted Phases						2
Detector Phase		1	1		2	2
Switch Phase						
Minimum Initial (s)		15.0	15.0		6.0	6.0
Minimum Split (s)		24.0	24.0		24.2	24.2
Total Split (s)		35.0	35.0		30.0	30.0
Total Split (%)		53.8%	53.8%		46.2%	46.2%
Maximum Green (s)		30.0	30.0		24.8	24.8
Yellow Time (s)		3.2	3.2		3.2	3.2

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
All-Red Time (s)		1.8	1.8		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.2	5.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)		3.0	3.0		2.0	2.0
Recall Mode		None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		12.0	12.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		23.4	23.4		31.4	31.4
Actuated g/C Ratio		0.36	0.36		0.48	0.48
v/c Ratio		0.57	0.73		0.13	0.15
Control Delay (s/veh)		17.9	8.5		11.9	3.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay (s/veh)		17.9	8.5		11.9	3.5
LOS		B	A		B	A
Approach Delay (s/veh)		17.9	8.5		7.4	
Approach LOS		B	A		A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SWL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 13.0		Intersection LOS: B	
Intersection Capacity Utilization 46.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 15:

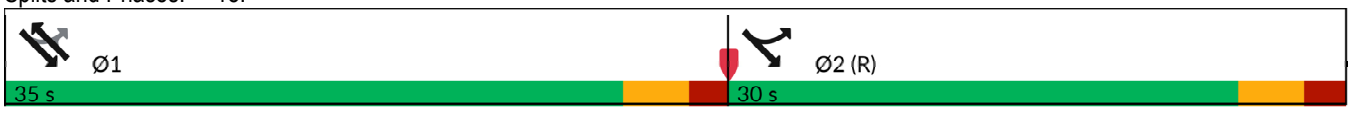


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	215	514	490	105	0	0
Future Volume (vph)	215	514	490	105	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	127			132	0	0
Storage Lanes	1			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	1863	1583	0	0
Flt Permitted	0.266					
Satd. Flow (perm)	495	3539	1863	1583	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				105		
Link Speed (mph)		30	30		30	
Link Distance (ft)		200	348		259	
Travel Time (s)		4.5	7.9		5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	215	514	490	105	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	215	514	490	105	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1	1	1	
Detector Template	Left			Right	Left	
Leading Detector (ft)	20	6	6	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		
Detector 1 Size(ft)	20	6	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		
Turn Type	pm+pt	NA	NA	Perm		
Protected Phases	2	1 2	1			
Permitted Phases	1 2			1		
Detector Phase	2	1 2	1	1		
Switch Phase						
Minimum Initial (s)	6.0		15.0	15.0		
Minimum Split (s)	23.2		24.0	24.0		
Total Split (s)	30.0		35.0	35.0		

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Total Split (%)	46.2%		53.8%	53.8%		
Maximum Green (s)	24.8		30.0	30.0		
Yellow Time (s)	3.2		3.2	3.2		
All-Red Time (s)	2.0		1.8	1.8		
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	5.2		5.0	5.0		
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Walk Time (s)			7.0	7.0		
Flash Don't Walk (s)			12.0	12.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	54.6	65.0	23.4	23.4		
Actuated g/C Ratio	0.84	1.00	0.36	0.36		
v/c Ratio	0.21	0.15	0.73	0.16		
Control Delay (s/veh)	6.1	0.1	24.2	3.3		
Queue Delay	0.6	0.0	0.0	0.0		
Total Delay (s/veh)	6.7	0.1	24.2	3.3		
LOS	A	A	C	A		
Approach Delay (s/veh)		2.0	20.5			
Approach LOS		A	C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SETL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 10.3		Intersection LOS: B	
Intersection Capacity Utilization 46.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 18:

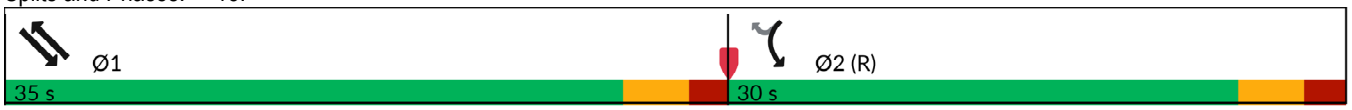


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	660	454	0	84	147
Future Volume (vph)	0	660	454	0	84	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						147
Link Speed (mph)		30	30		30	
Link Distance (ft)		287	200		286	
Travel Time (s)		6.5	4.5		6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	660	454	0	84	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	660	454	0	84	147
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)		6	6		20	20
Trailing Detector (ft)		0	0		0	0
Detector 1 Position(ft)		0	0		0	0
Detector 1 Size(ft)		6	6		20	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		1	1		2	
Permitted Phases						2
Detector Phase		1	1		2	2
Switch Phase						
Minimum Initial (s)		15.0	15.0		6.0	6.0
Minimum Split (s)		24.0	24.0		24.2	24.2
Total Split (s)		35.0	35.0		30.0	30.0
Total Split (%)		53.8%	53.8%		46.2%	46.2%
Maximum Green (s)		30.0	30.0		24.8	24.8
Yellow Time (s)		3.2	3.2		3.2	3.2

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
All-Red Time (s)		1.8	1.8		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.2	5.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)		3.0	3.0		2.0	2.0
Recall Mode		None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		12.0	12.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		22.3	22.3		32.5	32.5
Actuated g/C Ratio		0.34	0.34		0.50	0.50
v/c Ratio		0.54	0.71		0.10	0.17
Control Delay (s/veh)		18.2	8.7		11.1	3.2
Queue Delay		0.0	0.0		0.0	0.0
Total Delay (s/veh)		18.2	8.7		11.1	3.2
LOS		B	A		B	A
Approach Delay (s/veh)		18.2	8.7		6.0	
Approach LOS		B	A		A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SWL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 12.9		Intersection LOS: B	
Intersection Capacity Utilization 41.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 15:

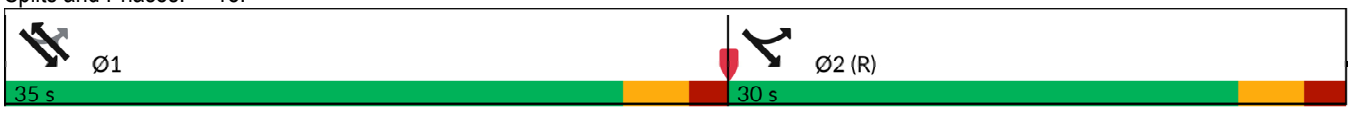


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	168	492	454	84	0	0
Future Volume (vph)	168	492	454	84	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	127			132	0	0
Storage Lanes	1			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	1863	1583	0	0
Flt Permitted	0.296					
Satd. Flow (perm)	551	3539	1863	1583	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				84		
Link Speed (mph)		30	30		30	
Link Distance (ft)		200	348		259	
Travel Time (s)		4.5	7.9		5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	168	492	454	84	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	168	492	454	84	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1	1	1	
Detector Template	Left			Right	Left	
Leading Detector (ft)	20	6	6	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		
Detector 1 Size(ft)	20	6	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		
Turn Type	pm+pt	NA	NA	Perm		
Protected Phases	2	1 2	1			
Permitted Phases	1 2			1		
Detector Phase	2	1 2	1	1		
Switch Phase						
Minimum Initial (s)	6.0		15.0	15.0		
Minimum Split (s)	23.2		24.0	24.0		
Total Split (s)	30.0		35.0	35.0		

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Total Split (%)	46.2%		53.8%	53.8%		
Maximum Green (s)	24.8		30.0	30.0		
Yellow Time (s)	3.2		3.2	3.2		
All-Red Time (s)	2.0		1.8	1.8		
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	5.2		5.0	5.0		
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Walk Time (s)			7.0	7.0		
Flash Don't Walk (s)			12.0	12.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	54.6	65.0	22.7	22.7		
Actuated g/C Ratio	0.84	1.00	0.35	0.35		
v/c Ratio	0.16	0.14	0.70	0.14		
Control Delay (s/veh)	3.4	0.1	23.6	3.5		
Queue Delay	0.4	0.0	0.0	0.0		
Total Delay (s/veh)	3.9	0.1	23.6	3.5		
LOS	A	A	C	A		
Approach Delay (s/veh)		1.0	20.5			
Approach LOS		A	C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SETL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 9.8		Intersection LOS: A	
Intersection Capacity Utilization 41.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 18:

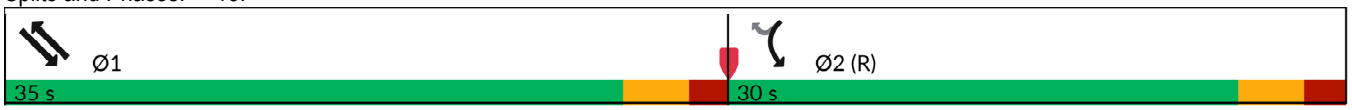


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	694	483	0	109	118
Future Volume (vph)	0	694	483	0	109	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						118
Link Speed (mph)		30	30		30	
Link Distance (ft)		287	200		286	
Travel Time (s)		6.5	4.5		6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	694	483	0	109	118
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	694	483	0	109	118
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)		6	6		20	20
Trailing Detector (ft)		0	0		0	0
Detector 1 Position(ft)		0	0		0	0
Detector 1 Size(ft)		6	6		20	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		1	1		2	
Permitted Phases						2
Detector Phase		1	1		2	2
Switch Phase						
Minimum Initial (s)		15.0	15.0		6.0	6.0
Minimum Split (s)		24.0	24.0		24.2	24.2
Total Split (s)		35.0	35.0		30.0	30.0
Total Split (%)		53.8%	53.8%		46.2%	46.2%
Maximum Green (s)		30.0	30.0		24.8	24.8
Yellow Time (s)		3.2	3.2		3.2	3.2

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
All-Red Time (s)		1.8	1.8		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.2	5.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)		3.0	3.0		2.0	2.0
Recall Mode		None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		12.0	12.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		23.1	23.1		31.7	31.7
Actuated g/C Ratio		0.36	0.36		0.49	0.49
v/c Ratio		0.55	0.73		0.13	0.14
Control Delay (s/veh)		17.8	8.6		11.7	3.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay (s/veh)		17.8	8.6		11.7	3.5
LOS		B	A		B	A
Approach Delay (s/veh)		17.8	8.6		7.4	
Approach LOS		B	A		A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SWL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 13.0		Intersection LOS: B	
Intersection Capacity Utilization 44.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 15:



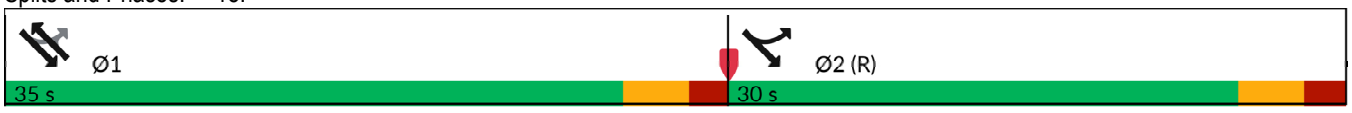
Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	198	496	483	105	0	0
Future Volume (vph)	198	496	483	105	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	127			132	0	0
Storage Lanes	1			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	1863	1583	0	0
Flt Permitted	0.272					
Satd. Flow (perm)	507	3539	1863	1583	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				105		
Link Speed (mph)		30	30		30	
Link Distance (ft)		200	348		259	
Travel Time (s)		4.5	7.9		5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	198	496	483	105	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	198	496	483	105	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1	1	1	
Detector Template	Left			Right	Left	
Leading Detector (ft)	20	6	6	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		
Detector 1 Size(ft)	20	6	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		
Turn Type	pm+pt	NA	NA	Perm		
Protected Phases	2	1 2	1			
Permitted Phases	1 2			1		
Detector Phase	2	1 2	1	1		
Switch Phase						
Minimum Initial (s)	6.0		15.0	15.0		
Minimum Split (s)	23.2		24.0	24.0		
Total Split (s)	30.0		35.0	35.0		

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Total Split (%)	46.2%		53.8%	53.8%		
Maximum Green (s)	24.8		30.0	30.0		
Yellow Time (s)	3.2		3.2	3.2		
All-Red Time (s)	2.0		1.8	1.8		
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	5.2		5.0	5.0		
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Walk Time (s)			7.0	7.0		
Flash Don't Walk (s)			12.0	12.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	54.6	65.0	23.3	23.3		
Actuated g/C Ratio	0.84	1.00	0.36	0.36		
v/c Ratio	0.19	0.14	0.73	0.17		
Control Delay (s/veh)	5.1	0.1	24.1	3.3		
Queue Delay	0.5	0.0	0.0	0.0		
Total Delay (s/veh)	5.7	0.1	24.1	3.3		
LOS	A	A	C	A		
Approach Delay (s/veh)		1.7	20.4			
Approach LOS		A	C			

Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:SETL and 6:, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay (s/veh): 10.2 Intersection LOS: B
Intersection Capacity Utilization 44.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 18:

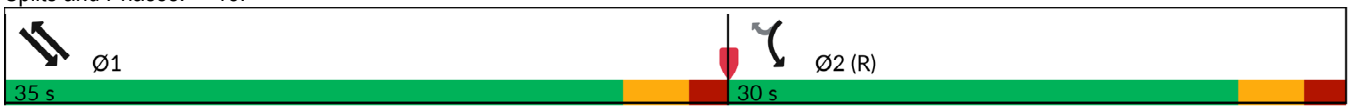


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	670	479	0	84	172
Future Volume (vph)	0	670	479	0	84	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						172
Link Speed (mph)		30	30		30	
Link Distance (ft)		287	200		286	
Travel Time (s)		6.5	4.5		6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	670	479	0	84	172
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	670	479	0	84	172
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)		6	6		20	20
Trailing Detector (ft)		0	0		0	0
Detector 1 Position(ft)		0	0		0	0
Detector 1 Size(ft)		6	6		20	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		1	1		2	
Permitted Phases						2
Detector Phase		1	1		2	2
Switch Phase						
Minimum Initial (s)		15.0	15.0		6.0	6.0
Minimum Split (s)		24.0	24.0		24.2	24.2
Total Split (s)		35.0	35.0		30.0	30.0
Total Split (%)		53.8%	53.8%		46.2%	46.2%
Maximum Green (s)		30.0	30.0		24.8	24.8
Yellow Time (s)		3.2	3.2		3.2	3.2

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
All-Red Time (s)		1.8	1.8		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.2	5.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)		3.0	3.0		2.0	2.0
Recall Mode		None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		12.0	12.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		23.1	23.1		31.7	31.7
Actuated g/C Ratio		0.36	0.36		0.49	0.49
v/c Ratio		0.53	0.72		0.10	0.20
Control Delay (s/veh)		17.6	8.5		11.6	3.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay (s/veh)		17.6	8.5		11.6	3.1
LOS		B	A		B	A
Approach Delay (s/veh)		17.6	8.5		5.9	
Approach LOS		B	A		A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SWL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 12.4		Intersection LOS: B	
Intersection Capacity Utilization 44.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 15:

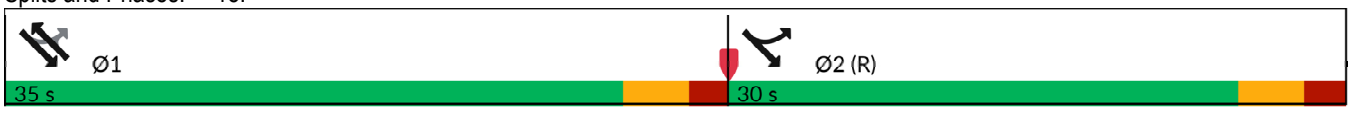


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	173	497	479	84	0	0
Future Volume (vph)	173	497	479	84	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	127			132	0	0
Storage Lanes	1			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	1863	1583	0	0
Flt Permitted	0.275					
Satd. Flow (perm)	512	3539	1863	1583	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				84		
Link Speed (mph)		30	30		30	
Link Distance (ft)		200	348		259	
Travel Time (s)		4.5	7.9		5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	173	497	479	84	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	173	497	479	84	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1	1	1	
Detector Template	Left			Right	Left	
Leading Detector (ft)	20	6	6	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		
Detector 1 Size(ft)	20	6	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		
Turn Type	pm+pt	NA	NA	Perm		
Protected Phases	2	1 2	1			
Permitted Phases	1 2			1		
Detector Phase	2	1 2	1	1		
Switch Phase						
Minimum Initial (s)	6.0		15.0	15.0		
Minimum Split (s)	23.2		24.0	24.0		
Total Split (s)	30.0		35.0	35.0		

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Total Split (%)	46.2%		53.8%	53.8%		
Maximum Green (s)	24.8		30.0	30.0		
Yellow Time (s)	3.2		3.2	3.2		
All-Red Time (s)	2.0		1.8	1.8		
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	5.2		5.0	5.0		
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Walk Time (s)			7.0	7.0		
Flash Don't Walk (s)			12.0	12.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	54.6	65.0	23.2	23.2		
Actuated g/C Ratio	0.84	1.00	0.36	0.36		
v/c Ratio	0.17	0.14	0.72	0.14		
Control Delay (s/veh)	4.3	0.1	24.0	3.5		
Queue Delay	0.5	0.0	0.0	0.0		
Total Delay (s/veh)	4.7	0.1	24.0	3.5		
LOS	A	A	C	A		
Approach Delay (s/veh)		1.3	20.9			
Approach LOS		A	C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SETL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 10.3		Intersection LOS: B	
Intersection Capacity Utilization 44.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 18:

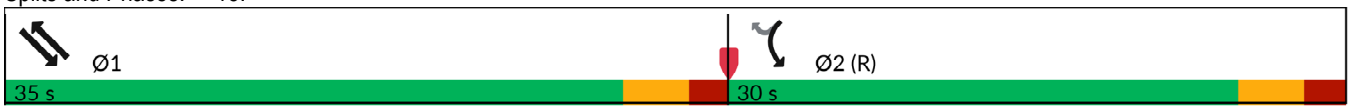


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	742	493	0	109	127
Future Volume (vph)	0	742	493	0	109	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	1863	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	1863	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						127
Link Speed (mph)		30	30		30	
Link Distance (ft)		287	200		286	
Travel Time (s)		6.5	4.5		6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	742	493	0	109	127
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	742	493	0	109	127
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors		1	1		1	1
Detector Template					Left	Right
Leading Detector (ft)		6	6		20	20
Trailing Detector (ft)		0	0		0	0
Detector 1 Position(ft)		0	0		0	0
Detector 1 Size(ft)		6	6		20	20
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Turn Type		NA	NA		Prot	Perm
Protected Phases		1	1		2	
Permitted Phases						2
Detector Phase		1	1		2	2
Switch Phase						
Minimum Initial (s)		15.0	15.0		6.0	6.0
Minimum Split (s)		24.0	24.0		24.2	24.2
Total Split (s)		35.0	35.0		30.0	30.0
Total Split (%)		53.8%	53.8%		46.2%	46.2%
Maximum Green (s)		30.0	30.0		24.8	24.8
Yellow Time (s)		3.2	3.2		3.2	3.2

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
All-Red Time (s)		1.8	1.8		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.2	5.2
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Vehicle Extension (s)		3.0	3.0		2.0	2.0
Recall Mode		None	None		C-Max	C-Max
Walk Time (s)		7.0	7.0			
Flash Don't Walk (s)		12.0	12.0			
Pedestrian Calls (#/hr)		0	0			
Act Effct Green (s)		23.4	23.4		31.4	31.4
Actuated g/C Ratio		0.36	0.36		0.48	0.48
v/c Ratio		0.58	0.73		0.13	0.15
Control Delay (s/veh)		18.0	8.5		11.9	3.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay (s/veh)		18.0	8.5		11.9	3.5
LOS		B	A		B	A
Approach Delay (s/veh)		18.0	8.5		7.4	
Approach LOS		B	A		A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SWL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 13.1		Intersection LOS: B	
Intersection Capacity Utilization 46.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 15:

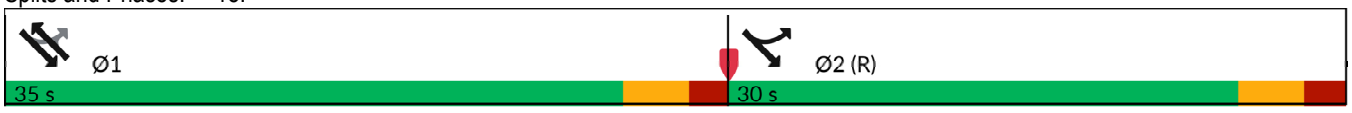


Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	222	520	493	105	0	0
Future Volume (vph)	222	520	493	105	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	127			132	0	0
Storage Lanes	1			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	1863	1583	0	0
Flt Permitted	0.262					
Satd. Flow (perm)	488	3539	1863	1583	0	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				105		
Link Speed (mph)		30	30		30	
Link Distance (ft)		200	348		259	
Travel Time (s)		4.5	7.9		5.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	222	520	493	105	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	222	520	493	105	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	1	1	1	1	
Detector Template	Left			Right	Left	
Leading Detector (ft)	20	6	6	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		
Detector 1 Size(ft)	20	6	6	20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		
Turn Type	pm+pt	NA	NA	Perm		
Protected Phases	2	1 2	1			
Permitted Phases	1 2			1		
Detector Phase	2	1 2	1	1		
Switch Phase						
Minimum Initial (s)	6.0		15.0	15.0		
Minimum Split (s)	23.2		24.0	24.0		
Total Split (s)	30.0		35.0	35.0		

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Total Split (%)	46.2%		53.8%	53.8%		
Maximum Green (s)	24.8		30.0	30.0		
Yellow Time (s)	3.2		3.2	3.2		
All-Red Time (s)	2.0		1.8	1.8		
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	5.2		5.0	5.0		
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	C-Max		None	None		
Walk Time (s)			7.0	7.0		
Flash Don't Walk (s)			12.0	12.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	54.6	65.0	23.4	23.4		
Actuated g/C Ratio	0.84	1.00	0.36	0.36		
v/c Ratio	0.22	0.15	0.73	0.16		
Control Delay (s/veh)	6.5	0.1	24.3	3.3		
Queue Delay	0.7	0.0	0.0	0.0		
Total Delay (s/veh)	7.2	0.1	24.3	3.3		
LOS	A	A	C	A		
Approach Delay (s/veh)		2.2	20.6			
Approach LOS		A	C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:SETL and 6:, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 10.4		Intersection LOS: B	
Intersection Capacity Utilization 46.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 18:



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	84	376	12	24	388	56	36	12	108	20	12	28
Future Volume (vph)	84	376	12	24	388	56	36	12	108	20	12	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	104		0	78		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.981			0.907			0.937	
Flt Protected	0.950			0.950				0.989			0.984	
Satd. Flow (prot)	1770	1853	0	1770	1827	0	0	1671	0	0	1717	0
Flt Permitted	0.950			0.950				0.989			0.984	
Satd. Flow (perm)	1770	1853	0	1770	1827	0	0	1671	0	0	1717	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		105			175			442			285	
Travel Time (s)		2.4			4.0			10.0			6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	84	376	12	24	388	56	36	12	108	20	12	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	388	0	24	444	0	0	156	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	160	364	24	36	372	84	40	28	112	24	16	16
Future Volume (vph)	160	364	24	36	372	84	40	28	112	24	16	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	104		0	78		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.972			0.916			0.961	
Flt Protected	0.950			0.950				0.989			0.979	
Satd. Flow (prot)	1770	1846	0	1770	1811	0	0	1688	0	0	1753	0
Flt Permitted	0.950			0.950				0.989			0.979	
Satd. Flow (perm)	1770	1846	0	1770	1811	0	0	1688	0	0	1753	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		105			175			442			285	
Travel Time (s)		2.4			4.0			10.0			6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	364	24	36	372	84	40	28	112	24	16	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	388	0	36	456	0	0	180	0	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	106	395	13	25	408	73	41	16	117	21	16	29
Future Volume (vph)	106	395	13	25	408	73	41	16	117	21	16	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	104		0	78		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.977			0.909			0.941	
Flt Protected	0.950			0.950				0.988			0.984	
Satd. Flow (prot)	1770	1853	0	1770	1820	0	0	1673	0	0	1725	0
Flt Permitted	0.950			0.950				0.988			0.984	
Satd. Flow (perm)	1770	1853	0	1770	1820	0	0	1673	0	0	1725	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		105			175			442			285	
Travel Time (s)		2.4			4.0			10.0			6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	106	395	13	25	408	73	41	16	117	21	16	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	408	0	25	481	0	0	174	0	0	66	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	175	383	25	38	391	95	56	36	132	21	20	17
Future Volume (vph)	175	383	25	38	391	95	56	36	132	21	20	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	104		0	78		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.971			0.920			0.960	
Flt Protected	0.950			0.950				0.988			0.982	
Satd. Flow (prot)	1770	1846	0	1770	1809	0	0	1693	0	0	1756	0
Flt Permitted	0.950			0.950				0.988			0.982	
Satd. Flow (perm)	1770	1846	0	1770	1809	0	0	1693	0	0	1756	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		105			175			442			285	
Travel Time (s)		2.4			4.0			10.0			6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	175	383	25	38	391	95	56	36	132	21	20	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	408	0	38	486	0	0	224	0	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.4%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	88	395	13	25	408	59	38	13	114	21	13	29
Future Volume (vph)	88	395	13	25	408	59	38	13	114	21	13	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	104		0	78		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.981			0.907			0.938	
Flt Protected	0.950			0.950				0.989			0.984	
Satd. Flow (prot)	1770	1853	0	1770	1827	0	0	1671	0	0	1719	0
Flt Permitted	0.950			0.950				0.989			0.984	
Satd. Flow (perm)	1770	1853	0	1770	1827	0	0	1671	0	0	1719	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		105			175			442			285	
Travel Time (s)		2.4			4.0			10.0			6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	88	395	13	25	408	59	38	13	114	21	13	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	408	0	25	467	0	0	165	0	0	63	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.5%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	168	383	25	38	408	88	42	29	118	25	29	17
Future Volume (vph)	168	383	25	38	408	88	42	29	118	25	29	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	104		0	78		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.973			0.916			0.968	
Flt Protected	0.950			0.950				0.989			0.983	
Satd. Flow (prot)	1770	1846	0	1770	1812	0	0	1688	0	0	1772	0
Flt Permitted	0.950			0.950				0.989			0.983	
Satd. Flow (perm)	1770	1846	0	1770	1812	0	0	1688	0	0	1772	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		105			175			442			285	
Travel Time (s)		2.4			4.0			10.0			6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	168	383	25	38	408	88	42	29	118	25	29	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	168	408	0	38	496	0	0	189	0	0	71	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.9%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	113	395	13	25	408	79	43	18	118	21	18	29
Future Volume (vph)	113	395	13	25	408	79	43	18	118	21	18	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	104		0	78		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.976			0.911			0.942	
Flt Protected	0.950			0.950				0.988			0.985	
Satd. Flow (prot)	1770	1853	0	1770	1818	0	0	1677	0	0	1728	0
Flt Permitted	0.950			0.950				0.988			0.985	
Satd. Flow (perm)	1770	1853	0	1770	1818	0	0	1677	0	0	1728	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		105			175			442			285	
Travel Time (s)		2.4			4.0			10.0			6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	113	395	13	25	408	79	43	18	118	21	18	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	408	0	25	487	0	0	179	0	0	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.5%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	178	383	25	38	391	98	61	39	137	25	22	17
Future Volume (vph)	178	383	25	38	391	98	61	39	137	25	22	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	104		0	78		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.970			0.922			0.964	
Flt Protected	0.950			0.950				0.987			0.981	
Satd. Flow (prot)	1770	1846	0	1770	1807	0	0	1695	0	0	1762	0
Flt Permitted	0.950			0.950				0.987			0.981	
Satd. Flow (perm)	1770	1846	0	1770	1807	0	0	1695	0	0	1762	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		105			175			442			285	
Travel Time (s)		2.4			4.0			10.0			6.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	178	383	25	38	391	98	61	39	137	25	22	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	408	0	38	489	0	0	237	0	0	64	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.3%		ICU Level of Service B	
Analysis Period (min) 15			

APPENDIX C

NYSDOT
TRAFFIC SIGNAL TIMING

TE 4D (8/82) STATE OF NEW YORK-DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS

STUDY: 608-3066 CONTRACT: 0259816 FILE: 46.12-15
SIGNAL #: 4100 COUNTY: STEUBEN PAGE: OF
[] CITY, [X] VILLAGE, [] TOWN OF PAINTED POST
DEPARTMENT ORDER FILED AS SECTION 2046.15
(DATE) SUBDIVISION (i)
PRIOR SPECIFICATIONS HEREBY SUPERCEDED: [] NONE [X] 7-30-02

PURPOSE: RECONSTRUCTION OF TRAFFIC SIGNAL

THESE SPECIFICATIONS WILL BE EFFECTIVE UPON THE [X] INSTALLATION, [] MODIFICATION OF THE NECESSARY TRAFFIC CONTROL DEVICE(S) REQUIRED BY CONFORMING TO THE STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

I. THIS SIGNAL SHALL:

A. OPERATE IN ACCORDANCE WITH THE TABLE OF OPERATIONS AND/OR CHANGE INTERVALS AS SHOWN ON PAGE(S) 3 AS A:
- [] PRETIMED SIGNAL
- [X] SEMI-TRAFFIC ACTUATED SIGNAL
- [] FULL-TRAFFIC ACTUATED SIGNAL
- [X] PEDESTRIAN ACTUATED SIGNAL
- [] OTHER

B. [X] DISPLAY VEHICULAR INDICATIONS
[X] DISPLAY PEDESTRIAN INDICATIONS
[X] BE EQUIPPED WITH VEHICLE DETECTORS
[] BE EQUIPPED WITH PEDESTRIAN PUSHBUTTONS
AS SHOWN IN THE [X] SCHEMATIC, [] SCALED DRAWING ON PAGE 2

C. BE EQUIPPED WITH [] PRE-EMPTION, [X] INTERCONNECTION AND/OR COORDINATION WHICH ARE DESCRIBED AS FOLLOWS:

COORDINATED WITH SIGNAL # 4097

#4010

7/7/08 Carl Washburn CE-II
(DATE) (SIGNATURE) (TITLE)

cc: [] MAIN OFFICE
[] REGION 6 TRAFFIC ENGINEER
[]
[]

INSTALLATION DATE:

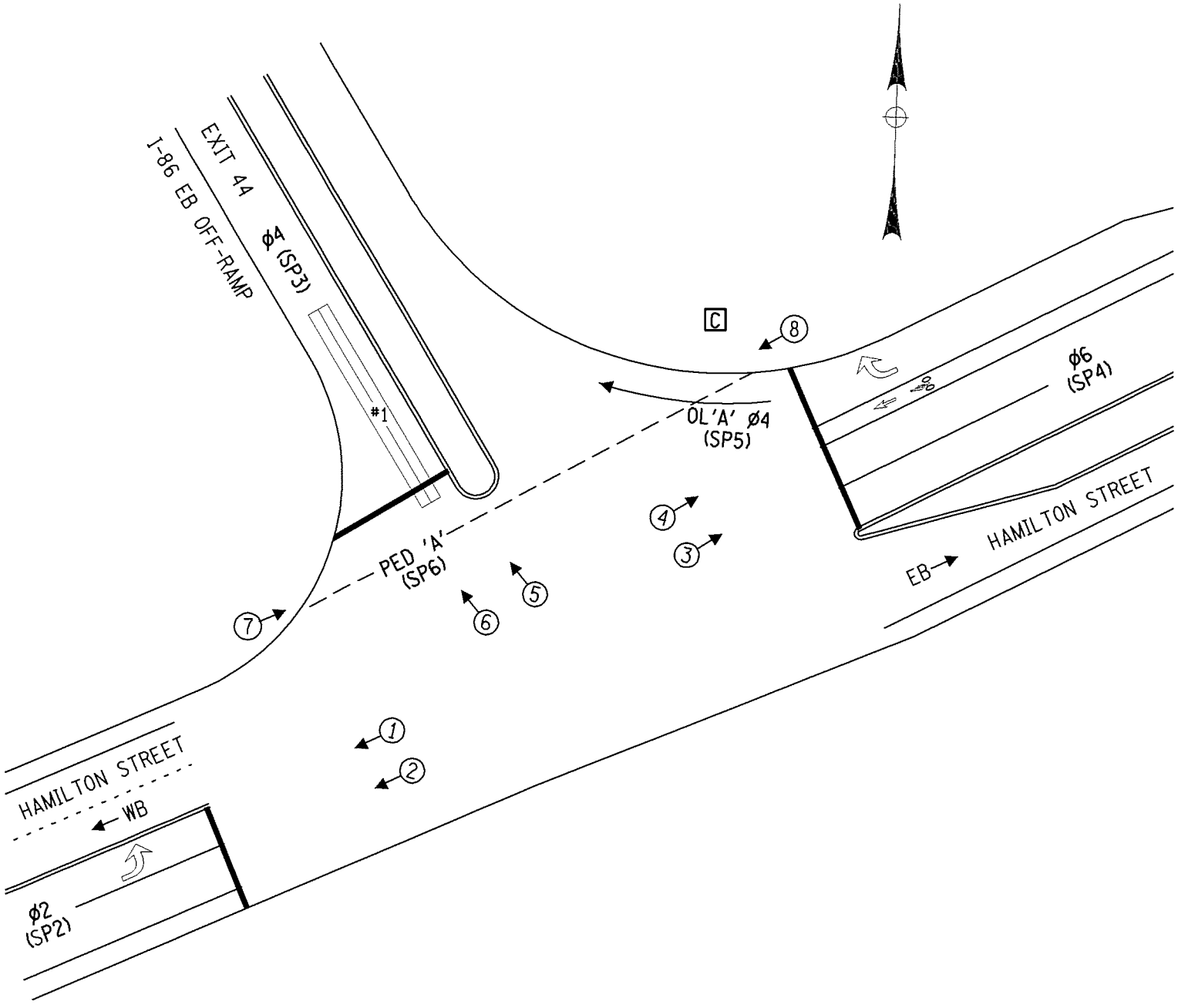
MODIFICATION DATE:

New splits and offset 10/27/17

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 608-3066
Contract: D259816
P.I.N.: 6008.07
File: 46.12-15

4100	STEUBEN	7/1/08	PAGE_____OF_____PAGES
SIGNAL NO(S).	COUNTY	DATE	

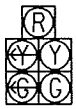
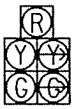


TE 5b (8/82)

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 608-3066
Contract: D259816
P.I.N.: 6008.07
File: 46.12-15

4100	STEUBEN	7/1/08	PAGE_____OF_____PAGES
SIGNAL NO(S).	COUNTY	DATE	

OPERATION TABLE							
Ø \ FACE	1	2	3	4	5	6	PED 'A'
2	G	G	R	R	R	R	DW
6	R	R	G	G	R	R	W*
2+6	G	G	G	G	R	R	W*
4	R	R	R	R	G	G	DW
FLASH	F.Y.	F.Y.	F.Y.	F.Y.	F.R.	F.R.	OUT
SIGNAL FACE DISPLAYS							
300 mm DIAMETER LENSES							

*At its onset, the associated phase displays a steady "walking person", and continues to rest in walk until there is a serviceable conflicting call. At the onset of the pedestrian change interval, both a flashing "upraised hand" and a countdown pedestrian signal, which indicates of the number of seconds remaining in the pedestrian change interval, is displayed.

CLEARANCE TABLE			
CLEARANCE	FROM / TO	R	G
1ST	R	R	Y
2ND		R	R
1ST	G	R	G
2ND		R	G

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 608-3066
Contract: D259816
P.I.N.: 6008.07
File: 46.12-15

4100	STEUBEN	7/1/08	PAGE_____OF_____PAGES
SIGNAL NO(S).	COUNTY	DATE	

TABLE OF SWITCHPACKS

SWITCH PACK	FUNCTION	FACE NUMBERS	FLASH PLUG	INDICATIONS	TERMINAL WIRING BOARD	
					TERMINAL	WIRE COLOR CODE
1	NOT USED	1 HAM LEFT	WHITE	-	-	-
				~~Y~~	SP 1Y	14/19C-1-O
				~~G~~	SP 1G	14/19C-1-G
				GROUND WIRE	GRND. BUS	14/19C-1-W
2	ø2	1,2 HAM EB	YELLOW	R	SP 2R	14/19C-1-R/B
				Y	SP 2Y	14/19C-1-O/B
				G	SP 2G	14/19C-1-G/B
				GROUND WIRE	GRND. BUS	14/19C-1-W/B
3	ø4	5,6 OFF-RAMP	RED	R	SP 3R	14/19C-1-R/W
				Y	SP 3Y	14/19C-1-BL/W
				G	SP 3G	14/19C-1-G/W
				GROUND WIRE	GRND. BUS	14/19C-1-B/W
4	ø6	3,4 HAM WB	YELLOW	R	SP 4R	14/19C-2-R
				Y	SP 4Y	14/19C-2-O
				G	SP 4G	14/19C-2-G
				GROUND WIRE	GRND. BUS	14/19C-2-W
5	OL'A' ø4	4 HAM RT	WHITE	-	-	-
				~~Y~~	SP 5Y	14/19C-2-O/B
				~~G~~	SP 5G	14/19C-2-G/B
				GROUND WIRE	GRND. BUS	14/19C-2-W/B
6	PED'A' ø6	7,8	WHITE	HAND	SP 6R	14/5C-1-R | 14/5C-2-R
				MAN	SP 6G	14/5C-1-G | 14/5C-2-G
				GROUND WIRE	GRND. BUS	14/5C-1-W | 14/5C-2-W
7					SP 7R	
					SP 7G	
					GRND. BUS	
8						
9						
10						
11						
12						
13						
14						

COLORS: R-RED, O-ORANGE, G-GREEN, BL-BLUE, W-WHITE, B-BLACK

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 608-3066
Contract: D259816
P.I.N.: 6008.07
File: 46.12-15

4100	STEUBEN	7/1/08	PAGE_____OF_____PAGES
SIGNAL NO(S).	COUNTY	DATE	

TABLE OF INPUT WIRING

TERM. NUMBER	FUNCTION	DET. NO.	DET. TYPE	DET. AN. OVER	REMARKS
1A, 1B	ø4	1	222		PRES. LOOP - EB OFF-RAMP
2A, 2B					
3A, 3B					
4A, 4B					
5A, 5B					
6A, 6B					
7A, 7B					
8A, 8B					
9A, 9B					
10A, 10B					
11A, 11B					
12A, 12B					
13A, 13B					
14A, 14B					
15A, 15B					
16A, 16B					
17A, 17B					
18A, 18B					
19A, 19B					
20A, 20B					
21A, 21B					
22A, 22B					
23A, 23B					
24A, 24B					
25A, 25B					
26A, 26B					
27A, 27B					
28A, 28B					

STD8

Phase Times [1.1.1]

	1	2	3	4	5	6	7	8
Min Green				6				
Gap, Ext				2				
Max 1		40		40		40		
Max 2								
Yel Clearance		3.6		3.1		3.6		
Red Clearance		3.4		3.4		3.4		
Walk						7		
Ped Clearance						28		
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time To Reduce								
Reduce By								
Min Gap								
DyMaxLim								
Max Step								

Options [1.1.2]

	1	2	3	4	5	6	7	8
Enable		On		On		On		
Min Recall								
Max Recall		On				On		
Ped Recall						On		
Soft Recall								
Lock Calls								
Auto Flash Entry				On				
Auto Flash Exit		On				On		
Dual Entry		On		On		On		On
Enable Simul Gap	On	On	On	On	On	On	On	On
Gaurantee Passage								
Rest In Walk						On		
Conditon Service								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc								

Options+ [1.1.3]

	1	2	3	4	5	6	7	8
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Call Phase								
Conflicting Phase								
Omit Yellow								
Ped Delay								
Grn/Ped Delay								

Coordination Patterns [2.4] and Coordination Split Tables [2.7.1]

Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq
1	80	63	1	1	13	0	0	13	1	25	0	0	0	1	37	0	0	0	1
2	0	0	2	1	14	0	0	14	1	26	0	0	0	1	38	0	0	0	1
3	0	0	3	1	15	0	0	15	1	27	0	0	0	1	39	0	0	0	1
4	0	0	4	1	16	0	0	16	1	28	0	0	0	1	40	0	0	0	1
5	0	0	5	1	17	0	0	17	1	29	0	0	0	1	41	0	0	0	1
6	0	0	6	1	18	0	0	18	1	30	0	0	0	1	42	0	0	0	1
7	0	0	7	1	19	0	0	19	1	31	0	0	0	1	43	0	0	0	1
8	0	0	8	1	20	0	0	20	1	32	0	0	0	1	44	0	0	0	1
9	0	0	9	1	21	0	0	21	1	33	0	0	0	1	45	0	0	0	1
10	0	0	10	1	22	0	0	22	1	34	0	0	0	1	46	0	0	0	1
11	0	0	11	1	23	0	0	23	1	35	0	0	0	1	47	0	0	0	1
12	0	0	12	1	24	0	0	24	1	36	0	0	0	1	48	0	0	0	1

Split	1	2	3	4	5	6	7	8	Split	1	2	3	4	5	6	7	8
1 Coor	0	58	0	22	0	58	0	22	13 Coor	0	0	0	0	0	0	0	0
2	NON	MAX	NON	NON	NON	MxP	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
2 Coor	0	0	0	0	0	0	0	0	14 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
3 Coor	0	0	0	0	0	0	0	0	15 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
4 Coor	0	0	0	0	0	0	0	0	16 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
5 Coor	0	0	0	0	0	0	0	0	17 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
6 Coor	0	0	0	0	0	0	0	0	18 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
7 Coor	0	0	0	0	0	0	0	0	19 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
8 Coor	0	0	0	0	0	0	0	0	20 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
9 Coor	0	0	0	0	0	0	0	0	21 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
10 Coor	0	0	0	0	0	0	0	0	22 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
11 Coor	0	0	0	0	0	0	0	0	23 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
12 Coor	0	0	0	0	0	0	0	0	24 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON

Page#	
1	8 Phase Times/Options; Patterns/Splits; Ring Startup; Coord/Flash Mode; Unit Param
1A&1B	16 Phase Times/Options; Patterns/Splits; Ring Startup; Coord/Flash Mode; Unit Param
2	Overlaps; Channel Settings; Coord Alt Table+ (values not associated with time-of-day)
3	Detection; Sample Time and Unit Parameters related to detection
4	Preemption and Alternate Phase Time and Phase Options
5	Annual Schedule
6	Day Plans; Action Tables; Coord Alt Table+ (values varied by time-of-day)
7	Communications; Secutiry; I/O Setup
8	Misc - Events/Alarms; Call/Inhibit/Redirect; P/OLAP Auto Flash; CIC; Misc Unit Param

Ring/Startup [1.1.4]

Phs	Ring	Start	Enable
1	1	RED	Off
2	1	WALK	On
3	1	RED	Off
4	1	RED	On
5	2	RED	Off
6	2	WALK	On
7	2	RED	Off
8	2	RED	Off

Coord Modes [2.1]

Test OpMode	0
Correction	SHRT/LNG
Maximum	MAX 1
Force-Off	FLOAT
Closed Loop	ON
Stop-in-Walk	OFF
Auto Reset	ON
Expand Splt	OFF
Ped Recycle	P3478_INH
Before	TIMED
After	TIMED

Auto Flash [1.4.1]

Auto Flash	CHANNEL
Flash Yel	45
Flash Red	0

Unit Params [1.2.1]

Phase Mode	STD8
IO Mode	USER
Loc Flsh Start	RED
Start Flash(s)	0
Start AllRed(s)	6
Yellow < 3"	OFF
Display Time	20
Red Revert	3
MCE Timeout	0
Feature Profile	0
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	ON
Auto Ped Clear	OFF
SDLC Retry	0

ID: 4100 Hamilton @ I86 Ex 44 EB Ramp

10/27/17 **Page 1**

Overlap 1-16 Program Parms & Parm+ [1.5.2.1] [1.5.2.2]

Overlap Conflict Lock	OFF	Overlap Lock Inhibit	OFF	Parent Ph Clearance	ON	Extra Included Ph	OFF

	Included Ø	4	6							NORMAL			Included Ø									NORMAL	
1	Modifier Ø	6								Grn		9	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
A	Conflict Olap									Red	1.5	I	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
2	Modifier Ø									Grn		10	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
B	Conflict Olap									Red	1.5	J	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
3	Modifier Ø									Grn		11	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
C	Conflict Olap									Red	1.5	K	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
4	Modifier Ø									Grn		12	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
D	Conflict Olap									Red	1.5	L	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
5	Modifier Ø									Grn		13	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
E	Conflict Olap									Red	1.5	M	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
6	Modifier Ø									Grn		14	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
F	Conflict Olap									Red	1.5	N	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
7	Modifier Ø									Grn		15	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
G	Conflict Olap									Red	1.5	O	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
8	Modifier Ø									Grn		16	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
H	Conflict Olap									Red	1.5	P	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	

Channel Settings [1.8.1]

.....Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Phase / Olap #		**2**	**4**	**6**	**1**	**6**																		
Channel Type	VEH	VEH	VEH	VEH	OLP	PED	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
Channel Flash	RED	YEL	RED	YEL	DRK	DRK	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Alt Hz																								

Channel+ Settings [1.8.4]

.....Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Flash Red+																								
Flash Yellow+																								
Flash Green+																								
Flash Inh Red+																								
Olap Ovrd																								

Coord Transition, CoorPhs [2.5]

Pat#	Short	Long	Dwell	No Shortway Ø				E-Yld	Offset	RetHld	Float	Min Veh Perm	Min Ped Perm
1	12	22		6					EndGRN				
2	12	22							EndGRN				
3	12	22							EndGRN				
4	12	22							EndGRN				
5	12	22							EndGRN				
6	12	22							EndGRN				
7	12	22							EndGRN				
8	12	22							EndGRN				
9	12	22							EndGRN				
10	12	22							EndGRN				
11	12	22							EndGRN				
12	12	22							EndGRN				
13	12	22							EndGRN				
14	12	22							EndGRN				
15	12	22							EndGRN				
16	12	22							EndGRN				
17	12	22							EndGRN				
18	12	22							EndGRN				
19	12	22							EndGRN				
20	12	22							EndGRN				
21	12	22							EndGRN				
22	12	22							EndGRN				
23	12	22							EndGRN				
24	12	22							EndGRN				
25									BegGRN				
26									BegGRN				
27									BegGRN				
28									BegGRN				
29									BegGRN				
30									BegGRN				
31									BegGRN				
32									BegGRN				
33									BegGRN				
34									BegGRN				
35									BegGRN				
36									BegGRN				
37									BegGRN				
38									BegGRN				
39									BegGRN				
40									BegGRN				
41									BegGRN				
42									BegGRN				
43									BegGRN				
44									BegGRN				
45									BegGRN				
46									BegGRN				
47									BegGRN				
48									BegGRN				

Channel Params[1.8.3]

C1 IO Mode	USER	BIU Map	SINGLE	Invert Rail Input	OFF

Veh Par 1-64 [5.1]

Det #	Call Ø	Swi Ø	Dlay	Ext	Que	No Act	Max Pres	Err Cnt	Fail Time
1	4		10				45	50	27
2							45	50	2
3							45	50	2
4							45	50	2
5							45	50	2
6							45	50	2
7							45	50	2
8							45	50	2
9							45	50	2
10							45	50	2
11							45	50	2
12							45	50	2
13							45	50	2
14							45	50	2
15							45	50	2
16							45	50	2
17							45	50	2
18							45	50	2
19							45	50	
20							45	50	
21							45	50	
22							45	50	
23							45	50	
24							45	50	
25							45	50	
26							45	50	
27							45	50	
28							45	50	
29							45	50	
30							45	50	
31							45	50	
32							45	50	

Veh Par 1-64 [5.1]

Det #	Call Ø	Swi Ø	Dlay	Ext	Que	No Act	Max Pres	Err Cnt	Fail Time
33							45	50	
34							45	50	
35							45	50	
36							45	50	
37							45	50	
38							45	50	
39							45	50	
40							45	50	
41							45	50	
42							45	50	
43							45	50	
44							45	50	
45							45	50	
46							45	50	
47							45	50	
48							45	50	
49							45	50	
50							45	50	
51							45	50	
52							45	50	
53							45	50	
54							45	50	
55							45	50	
56							45	50	
57							45	50	
58							45	50	
59							45	50	
60							45	50	
61							45	50	
62							45	50	
63							45	50	
64							45	50	

Vehicle Options 1-64 [5.2]

Det #	Call	Ext	Que	Add Init	Red Lock	Yell Lock	occ	vol
1	On	On		On				
2	On	On		On				
3	On	On		On				
4	On	On		On				
5	On	On		On				
6	On	On		On				
7	On	On		On				
8	On	On		On				
9	On	On		On				
10	On	On		On				
11	On	On		On				
12	On	On		On				
13	On	On		On				
14	On	On		On				
15	On	On		On				
16	On	On		On				
17	On	On		On				
18	On	On		On				
19	On	On		On				
20	On	On		On				
21	On	On		On				
22	On	On		On				
23	On	On		On				
24	On	On		On				
25	On	On		On				
26	On	On		On				
27	On	On		On				
28	On	On		On				
29	On	On		On				
30	On	On		On				
31	On	On		On				
32	On	On		On				

Vehicle Options 1-64 [5.2]

Det #	Call	Ext	Que	Add Ini	Red Lock	Yell Lock	occ	vol
33	On	On		On				
34	On	On		On				
35	On	On		On				
36	On	On		On				
37	On	On		On				
38	On	On		On				
39	On	On		On				
40	On	On		On				
41	On	On		On				
42	On	On		On				
43	On	On		On				
44	On	On		On				
45	On	On		On				
46	On	On		On				
47	On	On		On				
48	On	On		On				
49	On	On		On				
50	On	On		On				
51	On	On		On				
52	On	On		On				
53	On	On		On				
54	On	On		On				
55	On	On		On				
56	On	On		On				
57	On	On		On				
58	On	On		On				
59	On	On		On				
60	On	On		On				
61	On	On		On				
62	On	On		On				
63	On	On		On				
64	On	On		On				

Parameters+ 1-64 [5.3]

Det #	oc G	oc Y	oc R	Dlay 1	Dlay 2	Type	Src
1						NORM	
2						NORM	
3						NORM	
4						NORM	
5						NORM	
6						NORM	
7						NORM	
8						NORM	
9						NORM	
10						NORM	
11						NORM	
12						NORM	
13						NORM	
14						NORM	
15						NORM	
16						NORM	
17						NORM	
18						NORM	
19						NORM	
20						NORM	
21						NORM	
22						NORM	
23						NORM	
24						NORM	
25						NORM	
26						NORM	
27						NORM	
28						NORM	
29						NORM	
30						NORM	
31						NORM	
32						NORM	

Parameters+ 1-64 [5.3]

Det #	occ Grn	occ Yell	occ Red	Dlay 1	Dlay 2	Type	Src
33						NORM	
34						NORM	
35						NORM	
36						NORM	
37						NORM	
38						NORM	
39						NORM	
40						NORM	
41						NORM	
42						NORM	
43						NORM	
44						NORM	
45						NORM	
46						NORM	
47						NORM	
48						NORM	
49						NORM	
50						NORM	
51						NORM	
52						NORM	
53						NORM	
54						NORM	
55						NORM	
56						NORM	
57						NORM	
58						NORM	
59						NORM	
60						NORM	
61						NORM	
62						NORM	
63						NORM	
64						NORM	

Ped Det Parms [5.4]

Det #	Call Ø	No Act	Max Pres	Err Cnt
1			15	
2			15	
3			15	
4			15	
5			15	
6			15	
7			15	
8			15	

Unit Paramters [1.2.1]

TS2 Det Faults	ON

Vol/Occ Report Parm [1.5.8]

Vol/Occ Period Minutes	15
Vol/Occ Period Minutes	0

Preemption Times [3.1], Options+ [3.6]

Pre #	Enable	Type	Output	Delay	MinDura
1	ON	RAIL	DWELL		
2	ON	RAIL	DWELL		
3	ON	EMERG	DWELL		
4	ON	EMERG	DWELL		
5	ON	EMERG	DWELL		
6	ON	EMERG	DWELL		

Pre #	MaxPres	MinGrn	MinWlk	PedClr	Co+Pre
1					ON
2					ON
3					ON
4					ON
5					ON
6					ON

Pre #	Track Grn	Min Dwell	Ext Dwell	PedClr+	Yel
1		2			
2		2			
3		2			
4		2			
5		2			
6		2			

Pre #	Red	Pattern	Skip
1			OFF
2			OFF
3			OFF
4			OFF
5			OFF
6			OFF

Low Priority Preempts

Pre #	Type	Min	Max		
7	OFF				
8	OFF				
9	OFF				
10	OFF				

Unit Parameters [1.2.1]

Stop Timer Over Preempt	OFF
Preempt or Ext Output	PRE
Max Seek Track Time	
Max Seek Dwell Time	

Channel Parameters [1.8.3]

D Conn Mappings	NONE
Pre Invert Rail Input	OFF

Track Clear Phases [3.2], Track Clear Overlaps+ [3.5]

Pre #	Track Phases				Track Overlaps											
1																
2																
3																
4																
5																
6																

Dwell Phases [3.2] and Overlaps+ [3.5]

Pre #														
1	Phases													
	Overlaps													
	Peds													
2	Phases													
	Overlaps													
	Peds													
3	Phases													
	Overlaps													
	Peds													
4	Phases													
	Overlaps													
	Peds													
5	Phases													
	Overlaps													
	Peds													
6	Phases													
	Overlaps													
	Peds													

Exit Phases [3.2]

Pre #	Exit Phase			
1				
2				
3				
4				
5				
6				

Preemption Options+ [3.6]

Pre #	Lock	Override Auto Flsh		Override Higher		Flsh Dwel	Link
1	ON	ON		ON		OFF	
2	ON	ON		ON		OFF	
3	ON	ON		ON		OFF	
4	ON	ON		ON		OFF	
5	ON	ON		ON		OFF	
6	ON	ON		ON		OFF	

Annual Schedule [4.3] Month of Year | Day of Week | Date | DayLink

	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Plan	To
1													On	On	On	On	On	On	On																																	1	
2																																																			1	
3																																																			1	
4																																																			1	
5																																																			1	
6																																																			1	
7																																																			1	
8																																																			1	
9																																																			1	
10																																																			1	
11																																																			1	
12																																																			1	
13																																																			1	
14																																																			1	
15																																																			1	
16																																																			1	
17																																																			1	
18																																																			1	
19																																																			1	
20																																																			1	
21																																																			1	
22																																																			1	
23																																																			1	
24																																																			1	

Day Plans [4.4]

Day Plan 1

	Hour	Min	Act		Hour	Min	Act
1	0	0	1	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 2

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 3

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 4

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 5

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 6

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 7

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 8

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 9

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 10

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 11

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 12

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 13

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 14

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 15

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Action Table [4.5]

Act#	Pat#	A1	A2	A3	S1	S2	S3	S4	S5	S6	S7	S8
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8											
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
48												
98												
99												
100	255											

Coord Alternate Tables - Pat+ [2.6]

Pat#	ØOpt	ØTime	DetG	Call Inh	CIC	CNA1	Overlap Off 1	2	3	4	5	6	7	8	Dia	Max2
1															DFT	
2															DFT	
3															DFT	
4															DFT	
5															DFT	
6															DFT	
7															DFT	
8															DFT	
9															DFT	
10															DFT	
11															DFT	
12															DFT	
13															DFT	
14															DFT	
15															DFT	
16															DFT	
17															DFT	
18															DFT	
19															DFT	
20															DFT	
21															DFT	
22															DFT	
23															DFT	
24															DFT	
25															DFT	
26															DFT	
27															DFT	
28															DFT	
29															DFT	
30															DFT	
31															DFT	
32															DFT	
33															DFT	
34															DFT	
35															DFT	
36															DFT	
37															DFT	
38															DFT	
39															DFT	
40															DFT	
41															DFT	
42															DFT	
43															DFT	
44															DFT	
45															DFT	
46															DFT	
47															DFT	
48															DFT	

C1-USER IO Map [1.8.9.1 In]

I1-1	1	Veh Call 1
I1-2	189	Unused
I1-3	189	Unused
I1-4	189	Unused
I1-5	189	Unused
I1-6	189	Unused
I1-7	189	Unused
I1-8	189	Unused
I2-1	189	Unused
I2-2	189	Unused
I2-3	189	Unused
I2-4	189	Unused
I2-5	189	Unused
I2-6	189	Unused
I2-7	189	Unused
I2-8	189	Unused
I3-1	189	Unused
I3-2	189	Unused
I3-3	189	Unused
I3-4	189	Unused
I3-5	189	Unused
I3-6	189	Unused
I3-7	189	Unused
I3-8	189	Unused
I4-1	C11S Connector	
I4-2		
I4-3		
I4-4		
I4-5	189	Unused
I4-6	189	Unused
I4-7	229	33xCMUStop
I4-8	228	33xFlashSns
I5-1	189	Unused
I5-2	189	Unused
I5-3	189	Unused
I5-4	189	Unused
I5-5	189	Unused
I5-6	189	Unused
I5-7	189	Unused
I5-8	189	Unused
I6-1	189	Unused
I6-2	189	Unused
I6-3	189	Unused
I6-4	189	Unused
I6-5	189	Unused
I6-6	189	Unused
I6-7	189	Unused
I6-8	189	Unused

C1-USER IO Map [1.8.9.2 Out]

O1-1	1	Ch1 Red
O1-2	49	Ch1 Green
O1-3	2	Ch2 Red
O1-4	26	Ch2 Yellow
O1-5	50	Ch2 Green
O1-6	3	Ch3 Red
O1-7	27	Ch3 Yellow
O1-8	51	Ch3 Green
O2-1	4	Ch4 Red
O2-2	52	Ch4 Green
O2-3	5	Ch5 Red
O2-4	29	Ch5 Yellow
O2-5	53	Ch5 Green
O2-6	6	Ch6 Red
O2-7	30	Ch6 Yellow
O2-8	54	Ch6 Green
O3-1	7	Ch7 Red
O3-2	55	Ch7 Green
O3-3	8	Ch8 Red
O3-4	32	Ch8 Yellow
O3-5	56	Ch8 Green
O3-6	9	Ch9 Red
O3-7	33	Ch9 Yellow
O3-8	57	Ch9 Green
O4-1	10	Ch10 Red
O4-2	58	Ch10 Green
O4-3	11	Ch11 Red
O4-4	35	Ch11 Yellow
O4-5	59	Ch11 Green
O4-6	12	Ch12 Red
O4-7	36	Ch12 Yellow
O4-8	60	Ch12 Green
O5-1	28	Ch4 Yellow
O5-2	34	Ch10 Yellow
O5-3	25	Ch1 Yellow
O5-4	31	Ch7 Yellow
O5-5	115	Not Used
O5-6	115	Not Used
O5-7	115	Not Used
O5-8	114	Watchdog
O6-1	115	Not Used
O6-2	115	Not Used
O6-3	13	Ch13 Red
O6-4	37	Ch13 Yellow
O6-5	61	Ch13 Green
O6-6	14	Ch14 Red
O6-7	38	Ch14 Yellow
O6-8	62	Ch14 Green

C1-USER IO Map [1.8.9.2 Out]

O7-1	115	Not Used
O7-2	115	Not Used
O7-3	115	Not Used
O7-4	115	Not Used
O7-5	115	Not Used
O7-6	115	Not Used
O7-7	115	Not Used
O7-8	115	Not Used

C11S-USER IO Map [1.8.9.1 In]

I4-1	189	Unused
I4-2	189	Unused
I4-3	189	Unused
I4-4	189	Unused
I7-1	189	Unused
I7-2	189	Unused
I7-3	189	Unused
I7-4	189	Unused
I7-5	189	Unused
I7-6	189	Unused
I7-7	189	Unused
I7-8	189	Unused
I8-1	189	Unused
I8-2	189	Unused
I8-3	189	Unused
I8-4	189	Unused
I8-5	189	Unused
I8-6	189	Unused
I8-7	189	Unused
I8-8	189	Unused

C11S-USER IO Map [1.8.9.2 Out]

O8-1	115	Not Used
O8-2	115	Not Used
O8-3	115	Not Used
O8-4	115	Not Used
O8-5	115	Not Used
O8-6	115	Not Used
O8-7	115	Not Used
O8-8	115	Not Used

IO Logic [1.8.7]

Result				Fcn	Oper		Fcn	Oper		Fcn	Timer	
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY

Security Access Levels [8.2]

1	SWLOAD
2	SECURE
3	NONE
4	NONE
5	NONE
6	NONE
7	NONE
8	NONE
9	NONE
10	NONE
11	NONE
12	NONE
13	NONE
14	NONE
15	NONE
16	NONE
17	NONE
18	NONE
19	NONE
20	NONE
21	NONE

22	NONE
23	NONE
24	NONE
25	NONE
26	NONE
27	NONE
28	NONE
29	NONE
30	NONE
31	NONE
32	NONE
33	NONE
34	NONE
35	NONE
36	NONE
37	NONE
38	NONE
39	NONE
40	NONE
41	NONE
42	NONE

43	NONE
44	NONE
45	NONE
46	NONE
47	NONE
48	NONE
49	NONE
50	NONE
51	NONE
52	NONE
53	NONE
54	NONE
55	NONE
56	NONE
57	NONE
58	NONE
59	NONE
60	NONE
61	NONE
62	NONE
63	NONE
64	NONE

Com Parameters [6.1]

Station ID	4100
Group ID	
Master ID	0
Backup Time	0

SysUp Modem [6.1]

Enable Modem	OFF
Idle Time	0
Dial Time	0
Tel:	#N/A
Alt:	#N/A

2070 Port Parms [6.2]

Port	Baud Rate	FCM
SP1	9600	MODE 6
SP2	9600	MODE 6
SP3	19200	MODE 6
SP4	38400	MODE 6
SP5	1200	AUTO
SP6	1200	AUTO
SP7	1200	AUTO
SP8	1200	AUTO

2070 IP 1 Addressing [6.5]

	Addressing			
Addr	192	168	0	100
Mask	255	255	255	0
Brdcst	0	0	0	0
GtWay	192	168	0	1
Port	5001			

2070 IP 2 Addressing [6.5]

	Addressing			
Addr	0	0	0	0
Mask	0	0	0	0
Brdcst	0	0	0	0
GtWay	0	0	0	0
Port	0			

2070 Port Binding Ports [6.6]

	Port	Echo	Mode
ASYNC1	SP1	OFF	0
ASYNC2	SP2	OFF	0
ASYNC3	SP3	OFF	0
ASYNC4	SP4	OFF	0
SYNC1	SP5S	SYNC3	OFF
SYNC2	OFF	SYNC4	OFF

2070 Port Binding Functions [6.6]

Function	Channel	Function	Channel
TS2/CVM	NONE	SYSUp	ASYNC2
CMU/MMU	NONE	SYSDown	ASYNC1
Opticom	NONE	Shell	NONE
Loop Det.	NONE		
GPS	NONE		

#	Event / Alarm	Ev	Alr
1	Power Up Alarm.	On	On
2	Stop Timing	On	On
3	TS1 Cabinet Door		
4	Coordination Failure	On	On
5	External Alarm # 1	On	On
6	External Alarm # 2	On	On
7	External Alarm # 3		
8	External Alarm # 4		
9	Closed Loop Disabled		On
10	External Alarm # 5		
11	External Alarm # 6		
12	Manual Control Enable	On	On
13	Coord Free Input		
14	Local Flash Input	On	On
15	MMU Flash		
16	CMU Flash		
17	Cycle Fault		On
18	Cycle Failure		On
19	Coordination Fault		On
20	Controller Fault	On	On
21	Detector SDLC Failure		
22	MMU SDLC Failure		
23	Critical SDLC Failure		
24	Reserved		
25	EEPROM CRC Fault	On	On
26	Detector Diagnostic Failur		
27	BIU Detector Failure	On	On
28	Queue detector alarm		On
29	Ped Detector Fault		On
30	Coord Diagnostic Fault		
41	TempAlert Probe Ch. A		
42	TempAlert Probe Ch. B		
47	Coord Active		
48	Preempt Active		On
49	Preempt 1 Input		On
50	Preempt 2 Input		On
51	Preempt 3 Input		On
52	Preempt 4 Input		On
53	Preempt 5 Input		On
54	Preempt 6 Input		On
55	Preempt 7 Input		On
56	Preempt 8 Input		On
57	Preempt 9 Input		On
58	Preempt 10 Input		On
61	In Transition		On
81	FIO Status Alarm		

Call Phases[1.1.5]

Ø	Phases Called By Ø
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Redirect Phases[1.1.5]

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

Inhibit Phases[1.1.5]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

Alt Call & Redirect # 1 [1.1.6.3]

Col	Ø	Phases Called By Ø
1		
2		
3		
4		
5		
6		
7		
8		

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								

Alt Inhibit Phases # 1 [1.1.6.3]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																

Alt Call & Redirect # 2 [1.1.6.3]

Col	Ø	Phases Called By Ø
1		
2		
3		
4		
5		
6		
7		
8		

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								

Alt Inhibit Phases # 2 [1.1.6.3]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																

Coord, CIC Plans [2.3]

CIC	CoØ	Grow	1	2	3	4	5	6	7	8
1	OFF									
2	OFF									
3	OFF									
4	OFF									

Auto Flash Phase/Olap Settings [1.4.2]

Yel Ø									
Yel (olaps)									

Unit Parameters [1.2.1]

Allow Skip Yellow	OFF	Max Cycle Time	
TOD Dim Enable	OFF	Cycle Fault Action	ALARM
Tone Disable	OFF		
Diamond Mode	4Ph		
Backup Time (s)	900		
Disable Init Ped	OFF		
Cycle Fault Action	ALARM		
Enable Run Timer	ON		

EXX01(8/82) STATE OF NEW YORK-DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS

STUDY: 608-3104 CONTRACT: FILE: 46.12-415
SIGNAL #: 4002 COUNTY: STEUBEN PAGE: 1 OF 18
[] CITY, [X] VILLAGE, [] TOWN OF PAINTED POST
DEPARTMENT ORDER FILED AS SECTION 2146.12
(DATE) SUBDIVISION (a)
PRIOR SPECIFICATIONS HEREBY SUPERCEDED: [] NONE [X] JULY 7, 1983

PURPOSE: INSTALL 179 MICRO.

THESE SPECIFICATIONS WILL BE EFFECTIVE UPON THE [] INSTALLATION, [X] MODIFICATION OF THE NECESSARY TRAFFIC CONTROL DEVICE(S) REQUIRED BY CONFORMING TO THE STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

I. THIS SIGNAL SHALL:

A. OPERATE IN ACCORDANCE WITH THE TABLE OF OPERATIONS AND/OR CHANGE INTERVALS AS SHOWN ON PAGE(S) 3 AS A:
- [] PRETIMED SIGNAL
- [] SEMI-TRAFFIC ACTUATED SIGNAL
- [X] FULL-TRAFFIC ACTUATED SIGNAL
- [] PEDESTRIAN ACTUATED SIGNAL
- [] OTHER

B. [X] DISPLAY VEHICULAR INDICATIONS
[] DISPLAY PEDESTRIAN INDICATIONS
[X] BE EQUIPPED WITH VEHICLE DETECTORS
[X] BE EQUIPPED WITH PEDESTRIAN PUSHBUTTONS
AS SHOWN IN THE [X] SCHEMATIC, [] SCALED DRAWING ON PAGE 2

C. BE EQUIPPED WITH [] PRE-EMPTION, [] INTERCONNECTION AND/OR COORDINATION WHICH ARE DESCRIBED AS FOLLOWS:

3/11/99 Carl Washburn CF-II
(DATE) (SIGNATURE) (TITLE)

cc: [] MAIN OFFICE
[] REGION 6 TRAFFIC ENGINEER
[]
[]

INSTALLATION DATE:

MODIFICATION DATE: 01/27/99

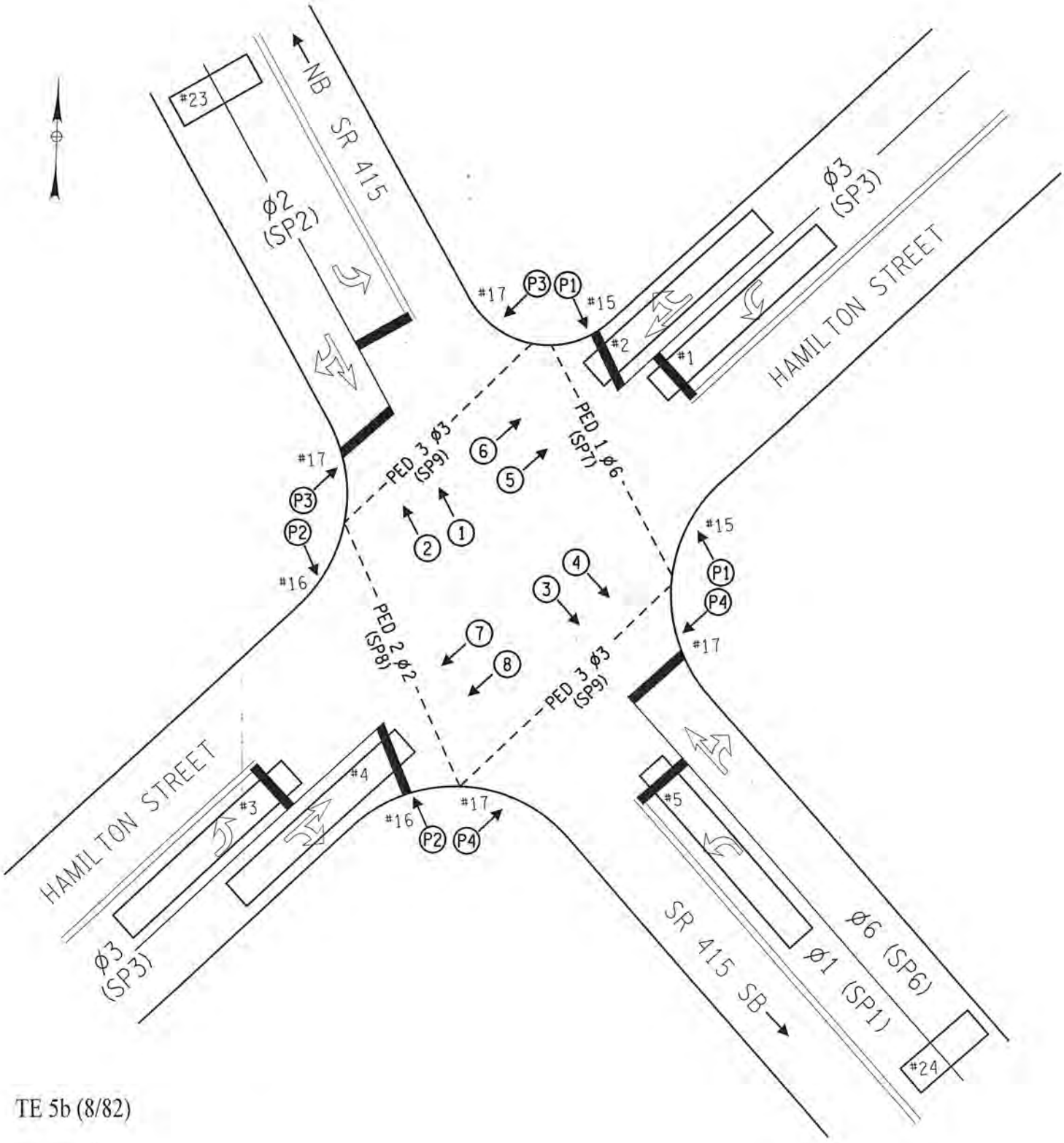
OK 10/28/08 CONVERTED TO 2070 CONTROLLER 10/28/08

12/15/10 ADDED PED OUTPUTS

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 610-3014
Contract:
P.I.N.:
File: 46.12-415

4002	STEUBEN	DEC 2010	PAGE_____OF_____PAGES
SIGNAL NO(S).	COUNTY	DATE	



TE 5b (8/82)

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 610-3014
Contract:
P.I.N.:
File: 46.12-415

4002 — SIGNAL NO(S).
STEUBEN — COUNTY
DEC/2010 — DATE
PAGE_____OF_____PAGES

TABLE OF OPERATIONS

FACE / Ø	1	2	3	4	5	6	7	8	P1	P2	P3,P4
STARTUP	G	G	G	G	R	R	R	R	✋	✋	✋
1	R	R	←G,R	R	R	R	R	R	✋	✋	✋
2	G	G	R	R	R	R	R	R	✋	🚶*	✋
6	R	R	G	G	R	R	R	R	🚶*	✋	✋
1+6	R	R	←G,G	G	R	R	R	R	🚶*	✋	✋
2+6	G	G	G	G	R	R	R	R	🚶*	🚶*	✋
3	R	R	R	R	G	G	G	G	✋	✋	🚶*
FLASH	F.R.	F.R.	F.R.	F.R.	F.R.	F.R.	F.R.	F.R.	OUT	OUT	OUT
SIGNAL FACE DISPLAYS											
12 INCH DIAMETER LENSES	R Y G	R Y G	R Y G ←	R Y G	R Y G	R Y G	R Y G	R Y G	✋ CLOCK	✋ CLOCK	🚶 CLOCK

* UPON ACTIVATION OF THE PEDESTRIAN BUTTON, THE ASSOCIATED PHASE DISPLAYS A STEADY "WALKING PERSON" IMMEDIATELY FOLLOWED BY THE DISPLAY OF BOTH A FLASHING "UPRAISED HAND" AND A COUNTDOWN OF SECONDS REMAINING IN THE PEDESTRIAN CHANGE INTERVAL.

TABLE OF CLEARANCES

CLEARANCE	FROM / TO	R	G	←G, R	←G, G
1ST	R	R	Y	←Y, R	←Y, Y
2ND		R	R	R	R
1ST	G	R	G	←Y, R	←Y, G
2ND		R	G	R	G
1ST	←G, R	R	Y	←G, R	←G, Y
2ND		R	R	←G, R	←G, R
1ST	←G, G	R	G	←G, R	←G, G
2ND		R	G	←G, R	←G, G

R = CIRCULAR RED
Y = CIRCULAR YELLOW
G = CIRCULAR GREEN
←R = LEFT RED ARROW
←Y = LEFT YELLOW ARROW
←G = LEFT GREEN ARROW

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 610-3014
Contract:
P.I.N.:
File: 46.12-415

4002 SIGNAL NO(S). | STEUBEN COUNTY | DEC 2010 DATE | PAGE_____OF_____PAGES

TABLE OF SWITCHPACKS

SWITCH PACK	FUNCTION	FACE NUMBERS	FLASH PLUG	INDICATIONS	TERMINAL WIRING BOARD		
					TERMINAL	WIRE COLOR CODE	
1	ø1	3	WHITE	-	-	-	
				~~Y~~	SP1Y	14-12C-2-BL/B	
				~~G~~	SP1G	14-12C-2-B	
				GRND. WIRE	GRD. BUS	14-12C-2-W	
2	ø2	1,2	RED	R	SP2R	14-12C-1-R	
				Y	SP2Y	14-12C-1-O	
				G	SP2G	14-12C-1-G	
				GRND. WIRE	GRD. BUS	14-12C-1-W	
3	ø3	5,6 7,8	RED	R	SP3R	14-12C-2-R/B	14-12C-1-R/B
				Y	SP3Y	14-12C-2-O/B	14-12C-1-O/B
				G	SP3G	14-12C-2-G/B	14-12C-1-G/B
				GRND. WIRE	GRD. BUS	14-12C-2-W	14-12C-1-W
4							
5							
6	ø6	3,4	RED	R	SP6R	14-12C-2-R	
				Y	SP6Y	14-12C-2-O	
				G	SP6G	14-12C-2-G	
				GRND. WIRE	GRD. BUS	14-12C-2-W	
7	PED 1 ø6	P1	WHITE	HAND	SP7R	14-5C-1-R	
					-	-	
				MAN	SP7G	14-5C-1-G	
				GRND. WIRE	GRD. BUS	14-5C-1-W	
8	PED 2 ø2	P2	WHITE	HAND	SP8R	14-5C-2-R	
					-	-	
				MAN	SP8G	14-5C-2-G	
				GRND. WIRE	GRD. BUS	14-5C-2-W	
9	PED 3 ø3	P3 P4	WHITE	HAND	SP9R	14-5C-3-R	14-5C-4-R
					-	-	-
				MAN	SP9G	14-5C-3-G	14-5C-4-G
				GRND. WIRE	GRD. BUS	14-5C-3-W	14-5C-4-W
10					SP10R		
					SP10Y		
					SP10G		
					GRD. BUS		
11					SP11R		
					SP11Y		
					SP11G		
					GRD. BUS		
12					SP12R		
					SP12Y		
					SP12G		
					GRD. BUS		
13					SP13R		
					SP13Y		
					SP13G		
					GRD. BUS		
14					SP14R		
					SP14Y		
					SP14G		
					GRD. BUS		

COLORS: R-RED, O-ORANGE, G-GREEN, BL-BLUE, W-WHITE, B-BLACK

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 610-3014
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4002 SIGNAL NO(S). | STEUBEN COUNTY | DEC 2010 DATE | PAGE_____OF_____PAGES

TABLE OF INPUT WIRING					
TERM. NUMBER	FUNCTION	DET. NO.	DET. TYPE	DET. AN. OVER	REMARKS
1A, 1B	ø3	1	222		PRES. LOOP - HAMILTON SB
2A, 2B	ø3	2			PRES. LOOP - HAMILTON SB
3A, 3B	ø3	3	222		PRES. LOOP - HAMILTON NB
4A, 4B	ø3	4			PRES. LOOP - HAMILTON NB
5A, 5B	ø1	5	222		PRES. LOOP - SR 415 LEFT
6A, 6B					
7A, 7B					
8A, 8B					
9A, 9B					
10A, 10B					
11A, 11B					
12A, 12B					
13A, 13B					
14A, 14B					
15A, 15B	PED1 ø6	15	242		PED CROSSING HAMILTON, NORTH
16A, 16B	PED2 ø2	16			PED CROSSING HAMILTON, SOUTH
17A, 17B	PED3 ø3	17	242		PED CROSSING SR 415
18A, 18B					
19A, 19B					
20A, 20B					
21A, 21B					
22A, 22B					
23A, 23B	ø2	23	222		SPOT LOOP - SR 415 EB
24A, 24B	ø6	24			SPOT LOOP - SR 415 WB
25A, 25B					
26A, 26B					
27A, 27B					
28A, 28B					

TE XXX-1R (8/1/85) TABLE OF SWITCH PACKS

TAPS
STUDY #____
FILE #____
PAGE OF

SIGNAL #~~4002~~ 8002 COUNTY #_____ DATE 10/2008

CONFLICT / CURRENT MONITOR PROGRAMMING

CONFLICT MONITOR DIODES TO BE CUT			CONFLICT MONITOR YELLOW JUMPERS TO BE INSTALLED	CURRENT MONITOR DIODES TO BE CUT
1-6			7	1
2-6			8	4
1-7			9	5
2-7				7
2-8				8
3-9				9
				10
				11
				12
				13
				14
				15
				16

NOTES:

STD8

Phase Times [1.1.1]

	1	2	3	4	5	6	7	8
Min Green	6	12	6			12		
Gap, Ext	2	3.5	3			3.5		
Max 1	40	45	40			45		
Max 2								
Yel Clearance	3.2	3.2	3.2			3.2		
Red Clearance	2	1.7	1.7			1.7		
Walk		7	7			7		
Ped Clearance		15	15			15		
Red Revert								
Add Initial		2.1				2.1		
Max Initial		20				20		
Time B4 Reduct								
Cars B4 Reduct								
Time To Reduce								
Reduce By								
Min Gap								
DyMaxLim								
Max Step								

Options [1.1.2]

	1	2	3	4	5	6	7	8
Enable	1	1	1			1		
Min Recall		1				1		
Max Recall								
Ped Recall								
Soft Recall								
Lock Calls								
Auto Flash Entry			1					
Auto Flash Exit		1				1		
Dual Entry		1		1		1		1
Enable Simul Gap	1	1	1	1	1	1	1	1
Gaurantee Passage								
Rest In Walk								
Conditon Service								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc	1	1	1	1	1	1	1	1

Options+ [1.1.3]

	1	2	3	4	5	6	7	8
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Conflicting Phase								
Conflicting Phase								
Omit Yellow								
Ped Delay								
Grn/Ped Delay								

Coordination Patterns [2.4] and Coordination Split Tables [2.7.1]

Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq
1	0	0	1	1	13	0	0	13	1	25	0	0		1	37	0	0		1
2	0	0	2	1	14	0	0	14	1	26	0	0		1	38	0	0		1
3	0	0	3	1	15	0	0	15	1	27	0	0		1	39	0	0		1
4	0	0	4	1	16	0	0	16	1	28	0	0		1	40	0	0		1
5	0	0	5	1	17	0	0	17	1	29	0	0		1	41	0	0		1
6	0	0	6	1	18	0	0	18	1	30	0	0		1	42	0	0		1
7	0	0	7	1	19	0	0	19	1	31	0	0		1	43	0	0		1
8	0	0	8	1	20	0	0	20	1	32	0	0		1	44	0	0		1
9	0	0	9	1	21	0	0	21	1	33	0	0		1	45	0	0		1
10	0	0	10	1	22	0	0	22	1	34	0	0		1	46	0	0		1
11	0	0	11	1	23	0	0	23	1	35	0	0		1	47	0	0		1
12	0	0	12	1	24	0	0	24	1	36	0	0		1	48	0	0		1

Split	1	2	3	4	5	6	7	8	Split	1	2	3	4	5	6	7	8
1 Coord	0	0	0	0	0	0	0	0	13 Coord	0	0	0	0	0	0	0	0
2 Coord	0 OMT	0	0	0	0	0	0	0	14 Coord	0	0	0	0	0	0	0	0
3 Coord	0	0	0	0	0	0	0	0	15 Coord	0	0	0	0	0	0	0	0
4 Coord	0	0	0	0	0	0	0	0	16 Coord	0	0	0	0	0	0	0	0
5 Coord	0	0	0	0	0	0	0	0	17 Coord	0	0	0	0	0	0	0	0
6 Coord	0	0	0	0	0	0	0	0	18 Coord	0	0	0	0	0	0	0	0
7 Coord	0	0	0	0	0	0	0	0	19 Coord	0	0	0	0	0	0	0	0
8 Coord	0	0	0	0	0	0	0	0	20 Coord	0	0	0	0	0	0	0	0
9 Coord	0	0	0	0	0	0	0	0	21 Coord	0	0	0	0	0	0	0	0
10 Coord	0	0	0	0	0	0	0	0	22 Coord	0	0	0	0	0	0	0	0
11 Coord	0	0	0	0	0	0	0	0	23 Coord	0	0	0	0	0	0	0	0
12 Coord	0	0	0	0	0	0	0	0	24 Coord	0	0	0	0	0	0	0	0

Page#	
1	8 Phase Times/Options; Patterns/Splits; Ring Startup; Coord/Flash Mode; Unit Param
1A&1B	16 Phase Times/Options; Patterns/Splits; Ring Startup; Coord/Flash Mode; Unit Param
2	Overlaps; Channel Settings; Coord Alt Table+ (values not associated with time-of-day)
3	Detection; Sample Time and Unit Parameters related to detection
4	Preemption and Alternate Phase Time and Phase Options
5	Annual Schedule
6	Day Plans; Action Tables; Coord Alt Table+ (values varied by time-of-day)
7	Communications; Secutiry; I/O Setup
8	Misc - Events/Alarms; Call/Inhibit/Redirect; P/OLAP Auto Flash; CIC; Misc Unit Param

Ring/Startup [1.1.4]

Phs	Ring	Start	Enable
1	1	RED	**1**
2	1	GREEN	**1**
3	1	RED	**1**
4	1	RED	**0**
5	2	RED	**0**
6	2	GREEN	**1**
7	2	RED	**0**
8	2	RED	**0**

Coord Modes [2.1]

Test OpMode	0
Correction	SHRT/LNG
Maximum	MAX INH
Force-Off	FLOAT
Closed Loop	ON
Stop-in-Walk	OFF
Auto Reset	ON
Expand Splt	OFF
Ped Recycle	NO_RECYCLE
Before	TIMED
After	TIMED

Auto Flash [1.4.1]

Auto Flash	CHANNEL
Flash Yel	4.5
Flash Red	2

Unit Params [1.2.1]

Phase Mode	**STD8**
IO Mode	**USER**
Loc Flsh Start	RED
Start Flash(s)	0
Start AllRed(s)	6
Yellow < 3"	**OFF**
Display Time	20
Red Revert	3
MCE Timeout	0
Feature Profile	0
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	ON
Auto Ped Clear	OFF
SDLC Retry	0

SR 415 @ HAMILTON ST (ID 4002) (Permanent File)

12/15/10 **Page 1**

Overlap 1-16 Program Parms & Parm+ [1.5.2.1] [1.5.2.2]

Overlap Conflict Lock	OFF	Overlap Lock Inhibit	OFF	Parent Ph Clearance	ON	Extra Included Ph	ON

1	Included Ø								NORMAL		9	Included Ø									NORMAL	
	Modifier Ø								Grn			Modifier Ø									Grn	
	Conflict Ø								Yel	3.5		Conflict Ø									Yel	3.5
A	Conflict Olap								Red	1.5	I	Conflict Olap									Red	1.5
	Conflict Ped								LG			Conflict Ped									LG	
2	Included Ø								NORMAL		10	Included Ø									NORMAL	
	Modifier Ø								Grn			Modifier Ø									Grn	
	Conflict Ø								Yel	3.5		Conflict Ø									Yel	3.5
B	Conflict Olap								Red	1.5	J	Conflict Olap									Red	1.5
	Conflict Ped								LG			Conflict Ped									LG	
3	Included Ø								NORMAL		11	Included Ø									NORMAL	
	Modifier Ø								Grn			Modifier Ø									Grn	
	Conflict Ø								Yel	3.5		Conflict Ø									Yel	3.5
C	Conflict Olap								Red	1.5	K	Conflict Olap									Red	1.5
	Conflict Ped								LG			Conflict Ped									LG	
4	Included Ø								NORMAL		12	Included Ø									NORMAL	
	Modifier Ø								Grn			Modifier Ø									Grn	
	Conflict Ø								Yel	3.5		Conflict Ø									Yel	3.5
D	Conflict Olap								Red	1.5	L	Conflict Olap									Red	1.5
	Conflict Ped								LG			Conflict Ped									LG	
5	Included Ø								NORMAL		13	Included Ø									NORMAL	
	Modifier Ø								Grn			Modifier Ø									Grn	
	Conflict Ø								Yel	3.5		Conflict Ø									Yel	3.5
E	Conflict Olap								Red	1.5	M	Conflict Olap									Red	1.5
	Conflict Ped								LG			Conflict Ped									LG	
6	Included Ø								NORMAL		14	Included Ø									NORMAL	
	Modifier Ø								Grn			Modifier Ø									Grn	
	Conflict Ø								Yel	3.5		Conflict Ø									Yel	3.5
F	Conflict Olap								Red	1.5	N	Conflict Olap									Red	1.5
	Conflict Ped								LG			Conflict Ped									LG	
7	Included Ø								NORMAL		15	Included Ø									NORMAL	
	Modifier Ø								Grn			Modifier Ø									Grn	
	Conflict Ø								Yel	3.5		Conflict Ø									Yel	3.5
G	Conflict Olap								Red	1.5	O	Conflict Olap									Red	1.5
	Conflict Ped								LG			Conflict Ped									LG	
8	Included Ø								NORMAL		16	Included Ø									NORMAL	
	Modifier Ø								Grn			Modifier Ø									Grn	
	Conflict Ø								Yel	3.5		Conflict Ø									Yel	3.5
H	Conflict Olap								Red	1.5	P	Conflict Olap									Red	1.5
	Conflict Ped								LG			Conflict Ped									LG	

Channel Settings [1.8.1]

.....Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Phase / Olap #	1	2	3			6	6	2	3															
Channel Type	VEH	VEH	VEH	VEH	VEH	VEH	PED	PED	PED	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
Channel Flash	DRK	RED	RED	RED	RED	RED	DRK	DRK	DRK	RED	RED	RED	RED	RED	RED	RED	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Alt Hz																								

Channel+ Settings [1.8.4]

.....Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Flash Red+																								
Flash Yellow+																								
Flash Green+																								
Flash Inh Red+																								

Channel Params[1.8.3]	C1 IO Mode	USER	Single BIU Map	SINGLE	Invert Rail Input	OFF

Coord Transition, CoorPhs [2.5]

Pat#	Short	Long	Dwell	No Shortway Ø				E-Yld	Offset	RetHld	Float	Min Veh Perm	Min Ped Perm
1	12	22							EndGRN	1			
2	12	22							EndGRN	1			
3	12	22							EndGRN				
4	12	22							EndGRN				
5	12	22							EndGRN				
6	12	22							EndGRN				
7	12	22							EndGRN				
8	12	22							EndGRN				
9	12	22							EndGRN				
10	12	22							EndGRN				
11	12	22							EndGRN				
12	12	22							EndGRN				
13	12	22							EndGRN				
14	12	22							EndGRN				
15	12	22							EndGRN				
16	12	22							EndGRN				
17	12	22							EndGRN				
18	12	22							EndGRN				
19	12	22							EndGRN				
20	12	22							EndGRN				
21	12	22							EndGRN				
22	12	22							EndGRN				
23	12	22							EndGRN				
24	12	22							EndGRN				
25	0	0							BegGRN				
26	0	0							BegGRN				
27	0	0							BegGRN				
28	0	0							BegGRN				
29	0	0							BegGRN				
30	0	0							BegGRN				
31	0	0							BegGRN				
32	0	0							BegGRN				
33	0	0							BegGRN				
34	0	0							BegGRN				
35	0	0							BegGRN				
36	0	0							BegGRN				
37	0	0							BegGRN				
38	0	0							BegGRN				
39	0	0							BegGRN				
40	0	0							BegGRN				
41	0	0							BegGRN				
42	0	0							BegGRN				
43	0	0							BegGRN				
44	0	0							BegGRN				
45	0	0							BegGRN				
46	0	0							BegGRN				
47	0	0							BegGRN				
48	0	0							BegGRN				

Veh Par 1-64 [5.1]

Det #	Call Ø	Swi Ø	Dlay	Ext	Que	No Act	Max Pres	Err Cnt	Fail Time
1	3		3				45	50	22
2	3		8				45	50	22
3	3		3				45	50	22
4	3		8				45	50	22
5	1		3				45	50	8
6							45	50	2
7							45	50	27
8							45	50	27
9							45	50	2
10							45	50	2
11							45	50	2
12							45	50	2
13							45	50	2
14							45	50	2
15							45	50	2
16							45	50	2
17							45	50	2
18							45	50	2
19							45	50	
20							45	50	
21							45	50	
22							45	50	
23	2						45	50	
24	6						45	50	
25							45	50	
26							45	50	
27							45	50	
28							45	50	
29							45	50	
30							45	50	
31							45	50	
32							45	50	

Veh Par 1-64 [5.1]

Det #	Call Ø	Swi Ø	Dlay	Ext	Que	No Act	Max Pres	Err Cnt	Fail Time
33							45	50	
34							45	50	
35							45	50	
36							45	50	
37							45	50	
38							45	50	
39							45	50	
40							45	50	
41							45	50	
42							45	50	
43							45	50	
44							45	50	
45							45	50	
46							45	50	
47							45	50	
48							45	50	
49							45	50	
50							45	50	
51							45	50	
52							45	50	
53							45	50	
54							45	50	
55							45	50	
56							45	50	
57							45	50	
58							45	50	
59							45	50	
60							45	50	
61							45	50	
62							45	50	
63							45	50	
64							45	50	

Vehicle Options 1-64 [5.2]

Det #	Call	Ext	Que	Add Init	Red Lock	Yell Lock	occ	vol
1	1	1		1				
2	1	1		1				
3	1	1		1				
4	1	1		1				
5	1	1		1				
6	1	1		1				
7	1	1		1				
8	1	1		1				
9	1	1		1				
10	1	1		1				
11	1			1				
12	1			1				
13	1	1		1				
14	1	1		1				
15	1	1		1				
16	1	1		1				
17	1	1		1				
18	1	1		1				
19	1	1		1				
20	1	1		1				
21	1	1		1				
22	1	1		1				
23	1	1		1				
24	1	1		1				
25	1	1		1				
26	1	1		1				
27	1	1		1				
28	1	1		1				
29	1	1		1				
30	1	1		1				
31	1	1		1				
32	1	1		1				

Vehicle Options 1-64 [5.2]

Det #	Call	Ext	Que	Add AddIni	Red Lock	Yell Lock	occ	vol
33	1	1		1				
34	1	1		1				
35	1	1		1				
36	1	1		1				
37	1	1		1				
38	1	1		1				
39	1	1		1				
40	1	1		1				
41	1	1		1				
42	1	1		1				
43	1	1		1				
44	1	1		1				
45	1	1		1				
46	1	1		1				
47	1	1		1				
48	1	1		1				
49	1	1		1				
50	1	1		1				
51	1	1		1				
52	1	1		1				
53	1	1		1				
54	1	1		1				
55	1	1		1				
56	1	1		1				
57	1	1		1				
58	1	1		1				
59	1	1		1				
60	1	1		1				
61	1	1		1				
62	1	1		1				
63	1	1		1				
64	1	1		1				

Parameters+ 1-64 [5.3]

Det #	oc G	oc Y	oc R	Dlay 1	Dlay 2	Type	Src
1						NORM	
2						NORM	
3						NORM	
4						NORM	
5						NORM	
6						NORM	
7						NORM	
8						NORM	
9						NORM	
10						NORM	
11						NORM	
12						NORM	
13						NORM	
14						NORM	
15						NORM	
16						NORM	
17						NORM	
18						NORM	
19						NORM	
20						NORM	
21						NORM	
22						NORM	
23						NORM	
24						NORM	
25						NORM	
26						NORM	
27						NORM	
28						NORM	
29						NORM	
30						NORM	
31						NORM	
32						NORM	

Parameters+ 1-64 [5.3]

Det #	occ Grn	occ Yell	occ Red	Dlay 1	Dlay 2	Type	Src
33						NORM	
34						NORM	
35						NORM	
36						NORM	
37						NORM	
38						NORM	
39						NORM	
40						NORM	
41						NORM	
42						NORM	
43						NORM	
44						NORM	
45						NORM	
46						NORM	
47						NORM	
48						NORM	
49						NORM	
50						NORM	
51						NORM	
52						NORM	
53						NORM	
54						NORM	
55						NORM	
56						NORM	
57						NORM	
58						NORM	
59						NORM	
60						NORM	
61						NORM	
62						NORM	
63						NORM	
64						NORM	

Ped Det Parms [5.4]

Det #	Call Ø	No Act	Max Pres	Err Cnt
1	6	0	15	0
2	2	0	15	0
3	3	0	15	0
4		0	15	0
5		0	15	0
6		0	15	0
7		0	15	0
8		0	15	0

Unit Paramters [1.2.1]

TS2 Det Faults	ON

Vol/Occ Report Parm [1.5.8]

Vol/Occ Period Minutes	0
Vol/Occ Period Minutes	15

Preemption Times [3.1], Options+ [3.6]

Pre #	Enable	Type	Output	Delay	MinDura
1	ON	RAIL	DWELL		
2	ON	RAIL	DWELL		
3	ON	EMERG	DWELL		
4	ON	EMERG	DWELL		
5	ON	EMERG	DWELL		
6	ON	EMERG	DWELL		

Pre #	MaxPres	MinGrn	MinWlk	PedClr	Co+Pre
1					ON
2					ON
3	90	2			ON
4					ON
5					ON
6					ON

Pre #	Track Grn	Min Dwell	Ext Dwell	PedClr	Yel
1		2			
2		2			
3		2			
4		2			
5		2			
6		2			

Pre #	Red	Pattern	Skip	
1			OFF	
2			OFF	
3			OFF	
4			OFF	
5			OFF	
6			OFF	

Low Priority Preempts

Pre #	Type	Min	Max		
7	OFF	0	0		
8	OFF	0	0		
9	OFF	0	0		
10	OFF	0	0		

Unit Parameters [1.2.1]

Stop Timer Over Preempt	OFF
Preempt or Ext Output	PRE
Max Seek Track Time	0
Max Seek Dwell Time	0

Channel Parameters [1.8.3]

D Conn Mappings	NONE
Pre Invert Rail Input	

Track Clear Phases [3.2], Track Clear Overlaps+ [3.5]

Pre #	Track Phases	Track Overlaps
1		
2		
3		
4		
5		
6		

Dwell Phases [3.2] and Overlaps+ [3.5]

Pre #		
1	Phases	
	Overlaps	
	Peds	
2	Phases	
	Overlaps	
	Peds	
3	Phases	
	Overlaps	
	Peds	
4	Phases	
	Overlaps	
	Peds	
5	Phases	
	Overlaps	
	Peds	
6	Phases	
	Overlaps	
	Peds	

Exit Phases [3.2]

Pre #	Exit Phase
1	
2	
3	
4	
5	
6	

Preemption 1, Options+ [3.6]

Pre #	Lock	Override Auto Flsh	Override Higher	Flsh Dwel	Link
1	ON	ON	ON	OFF	
2	ON	ON	ON	ON	
3	ON	ON	ON	OFF	
4	ON	ON	ON	OFF	
5	ON	ON	ON	OFF	
6	ON	ON	ON	OFF	

Alt# 1 Times Table [1.1.6.1]

Column#..... ->	1	2	3	4	5	6	7	8
Assign Ø								
Min Grn								
Gap, Ext								
Max 1								
Max 2								
Yel Clr								
Red Clr								
Walk								
Ped Clr								

Alt# 2 Times Table [1.1.6.1]

Column#..... ->	1	2	3	4	5	6	7	8
Assign Ø								
Min Grn								
Gap, Ext								
Max 1								
Max 2								
Yel Clr								
Red Clr								
Walk								
Ped Clr								

Alt# 3 Times Table [1.1.6.1]

Column#..... ->	1	2	3	4	5	6	7	8
Assign Ø								
Min Grn								
Gap, Ext								
Max 1								
Max 2								
Yel Clr								
Red Clr								
Walk								
Ped Clr								

Alt# 1 Options Table [1.1.6.2]

Column # ->	1	2	3	4	5	6	7	8
Assign Ø								
Lock Calls	1	1	1	1	1	1	1	1
Soft Recall								
Dual Enrty								
Enabl SimGap	1	1	1	1	1	1	1	1
Gaur Passage								
Rest In Walk								
Cond Service								
Reservice								
Non-Act 1								
Red Rest								
Max2								
Ped Delay								
Conflicting Ø1								

Annual Schedule [4.3] Month of Year | Day of Week | Date | Day Plan | Link To

	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Day Plan	Link To
1													1	1	1	1	1	1	1																																1	
2																																																			1	
3																																																			1	
4																																																			1	
5																																																			1	
6																																																			1	
7																																																			1	
8																																																			1	
9																																																			1	
10																																																			1	
11																																																			1	
12																																																			1	
13																																																			1	
14																																																			1	
15																																																			1	
16																																																			1	
17																																																			1	
18																																																			1	
19																																																			1	
20																																																			1	
21																																																			1	
22																																																			1	
23																																																			1	
24																																																			1	

Day Plans [4.4]

Day Plan 1

	Hour	Min	Act
1	0	0	2
2	6	0	1
3	22	0	2
4			
5			
6			
7			
8			

Day Plan 2

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 3

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 4

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 5

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 6

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 7

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 8

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 9

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 10

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 11

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 12

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 13

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 14

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Day Plan 15

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Action Table [4.5]

Act#	Pat#	A1	A2	A3	S1	S2	S3	S4	S5	S6	S7	S8
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8											
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
48												
98												
99												
100	255											

Coord Alternate Tables - Pat+ [2.6]

Pat#	ØOpt	ØTime	DetG	Call Inh	CIC	CNA1	Overlap Off 1	2	3	4	5	6	7	8	Dia	Max2
1															DFT	
2															DFT	
3															DFT	
4															DFT	
5															DFT	
6															DFT	
7															DFT	
8															DFT	
9															DFT	
10															DFT	
11															DFT	
12															DFT	
13															DFT	
14															DFT	
15															DFT	
16															DFT	
17															DFT	
18															DFT	
19															DFT	
20															DFT	
21															DFT	
22															DFT	
23															DFT	
24															DFT	
25															DFT	
26															DFT	
27															DFT	
28															DFT	
29															DFT	
30															DFT	
31															DFT	
32															DFT	
33															DFT	
34															DFT	
35															DFT	
36															DFT	
37															DFT	
38															DFT	
39															DFT	
40															DFT	
41															DFT	
42															DFT	
43															DFT	
44															DFT	
45															DFT	
46															DFT	
47															DFT	
48															DFT	

C1-USER IO Map [1.8.9.1 In]

I1-1	1	Veh Call 1
I1-2	2	Veh Call 2
I1-3	3	Veh Call 3
I1-4	4	Veh Call 4
I1-5	5	Veh Call 5
I1-6	189	Unused
I1-7	189	Unused
I1-8	189	Unused
I2-1	189	Unused
I2-2	189	Unused
I2-3	189	Unused
I2-4	189	Unused
I2-5	189	Unused
I2-6	189	Unused
I2-7	129	Ped Call 1
I2-8	130	Ped Call 2
I3-1	131	Ped Call 3
I3-2	189	Unused
I3-3	189	Unused
I3-4	189	Unused
I3-5	189	Unused
I3-6	189	Unused
I3-7	23	Veh Call 23
I3-8	24	Veh Call 24
I4-1		C11S Connector
I4-2		
I4-3		
I4-4		
I4-5	189	Unused
I4-6	189	Unused
I4-7	229	33xCMUStop
I4-8	228	33xFlashSns
I5-1	189	Unused
I5-2	189	Unused
I5-3	189	Unused
I5-4	189	Unused
I5-5	189	Unused
I5-6	189	Unused
I5-7	189	Unused
I5-8	189	Unused
I6-1	189	Unused
I6-2	189	Unused
I6-3	189	Unused
I6-4	189	Unused
I6-5	189	Unused
I6-6	189	Unused
I6-7	189	Unused
I6-8	189	Unused

C1-USER IO Map [1.8.9.2 Out]

O1-1	1	Ch1 Red
O1-2	49	Ch1 Green
O1-3	2	Ch2 Red
O1-4	26	Ch2 Yellow
O1-5	50	Ch2 Green
O1-6	3	Ch3 Red
O1-7	27	Ch3 Yellow
O1-8	51	Ch3 Green
O2-1	4	Ch4 Red
O2-2	52	Ch4 Green
O2-3	5	Ch5 Red
O2-4	29	Ch5 Yellow
O2-5	53	Ch5 Green
O2-6	6	Ch6 Red
O2-7	30	Ch6 Yellow
O2-8	54	Ch6 Green
O3-1	7	Ch7 Red
O3-2	55	Ch7 Green
O3-3	8	Ch8 Red
O3-4	32	Ch8 Yellow
O3-5	56	Ch8 Green
O3-6	9	Ch9 Red
O3-7	33	Ch9 Yellow
O3-8	57	Ch9 Green
O4-1	10	Ch10 Red
O4-2	58	Ch10 Green
O4-3	11	Ch11 Red
O4-4	35	Ch11 Yellow
O4-5	59	Ch11 Green
O4-6	12	Ch12 Red
O4-7	36	Ch12 Yellow
O4-8	60	Ch12 Green
O5-1	28	Ch4 Yellow
O5-2	34	Ch10 Yellow
O5-3	25	Ch1 Yellow
O5-4	31	Ch7 Yellow
O5-5	115	Not Used
O5-6	115	Not Used
O5-7	115	Not Used
O5-8	114	Watchdog
O6-1	115	Not Used
O6-2	115	Not Used
O6-3	13	Ch13 Red
O6-4	37	Ch13 Yellow
O6-5	61	Ch13 Green
O6-6	14	Ch14 Red
O6-7	38	Ch14 Yellow
O6-8	62	Ch14 Green

C1-USER IO Map [1.8.9.2 Out]

O7-1	115	Not Used
O7-2	115	Not Used
O7-3	115	Not Used
O7-4	115	Not Used
O7-5	115	Not Used
O7-6	115	Not Used
O7-7	115	Not Used
O7-8	115	Not Used

C11S-USER IO Map [1.8.9.1 In]

I4-1	189	Unused
I4-2	189	Unused
I4-3	189	Unused
I4-4	189	Unused
I7-1	189	Unused
I7-2	189	Unused
I7-3	189	Unused
I7-4	189	Unused
I7-5	189	Unused
I7-6	189	Unused
I7-7	189	Unused
I7-8	189	Unused
I8-1	189	Unused
I8-2	189	Unused
I8-3	189	Unused
I8-4	189	Unused
I8-5	189	Unused
I8-6	189	Unused
I8-7	189	Unused
I8-8	189	Unused

C11S-USER IO Map [1.8.9.2 Out]

O8-1	115	Not Used
O8-2	115	Not Used
O8-3	115	Not Used
O8-4	115	Not Used
O8-5	115	Not Used
O8-6	115	Not Used
O8-7	115	Not Used
O8-8	115	Not Used

IO Logic [1.8.7]

Result			Fcn	Oper		Fcn	Oper		Fcn	Timer	
I	0	=	I	0	----	I	0	----	I	0	DLY 0
I	0	=	I	0	----	I	0	----	I	0	DLY 0
I	0	=	I	0	----	I	0	----	I	0	DLY 0
I	0	=	I	0	----	I	0	----	I	0	DLY 0
I	0	=	I	0	----	I	0	----	I	0	DLY 0
I	0	=	I	0	----	I	0	----	I	0	DLY 0
I	0	=	I	0	----	I	0	----	I	0	DLY 0
I	0	=	I	0	----	I	0	----	I	0	DLY 0
I	0	=	I	0	----	I	0	----	I	0	DLY 0
I	0	=	I	0	----	I	0	----	I	0	DLY 0

Security Access Levels [8.2]

1	SWLOAD
2	SECURE
3	NONE
4	NONE
5	NONE
6	NONE
7	NONE
8	NONE
9	NONE
10	NONE
11	NONE
12	NONE
13	NONE
14	NONE
15	NONE
16	NONE
17	NONE
18	NONE
19	NONE
20	NONE
21	NONE
22	NONE
23	NONE
24	NONE
25	NONE
26	NONE
27	NONE
28	NONE
29	NONE
30	NONE
31	NONE
32	NONE
33	NONE
34	NONE
35	NONE
36	NONE
37	NONE
38	NONE
39	NONE
40	NONE
41	NONE
42	NONE
43	NONE
44	NONE
45	NONE
46	NONE
47	NONE
48	NONE
49	NONE
50	NONE
51	NONE
52	NONE
53	NONE
54	NONE
55	NONE
56	NONE
57	NONE
58	NONE
59	NONE
60	NONE
61	NONE
62	NONE
63	NONE
64	NONE

Com Parameters [6.1]

Station ID	4002
Group ID	
Master ID	0
Backup Time	900

SysUp Modem [6.1]

Enable Modem	OFF
Idle Time	15
Dial Time	5
Tel:	0,0-000-000-0000
Alt:	0,0-000-000-0000

2070 Port Parms [6.2]

Port	Baud Rate	FCM
SP1	9600	6
SP2	9600	6
SP3	19200	6
SP4	38400	6
SP5	1200	
SP6	1200	
SP7	1200	
SP8	1200	

2070 IP 1 Addressing [6.5]

	Addressing			
Addr				
Mask				
Brdcst				
GtWay				
Port				

2070 IP 2 Addressing [6.5]

	Addressing			
Addr				
Mask				
Brdcst				
GtWay				
Port				

2070 Port Binding Ports [6.6]

	Port	Echo	Mode
ASYNC1	SP1	NONE	
ASYNC2	SP2	NONE	
ASYNC3	SP3	NONE	
ASYNC4	SP4	NONE	
SYNC1	SP5S		
SYNC2	OFF		

2070 Port Binding Functions [6.6]

Function	Channel	Function	Channel
TS2/CVM	NONE	SYSUp	ASYNC2
CMU/MMU	NONE	SYSDown	ASYNC1
Opticom	NONE	Shell	NONE
Loop Det.	NONE		
GPS	NONE		

#	Event / Alarm	Ev	Alr
1	Power Up Alarm.	1	1
2	Stop Timing	1	1
3	TS1 Cabinet Door		
4	Coordination Failure	1	1
5	External Alarm # 1	1	1
6	External Alarm # 2	1	1
7	External Alarm # 3		
8	External Alarm # 4		
9	Closed Loop Disabled	1	
10	External Alarm # 5		
11	External Alarm # 6		
12	Manual Control Enable	1	1
13	Coord Free Input		
14	Local Flash Input	1	1
15	MMU Flash		
16	CMU Flash		
17	Cycle Fault	1	
18	Cycle Failure	1	
19	Coordination Fault	1	
20	Controller Fault	1	1
21	Detector SDLC Failure		
22	MMU SDLC Failure		
23	Critical SDLC Failure		
24	Reserved		
25	EEPROM CRC Fault	1	1
26	Detector Diagnostic Failur		
27	BIU Detector Failure	1	1
28	Queue detector alarm	1	
29	Ped Detector Fault	1	
30	Coord Diagnostic Fault		
41	TempAlert Probe Ch. A		
42	TempAlert Probe Ch. B	1	
47	Coord Active	1	
48	Preempt Active		
49	Preempt 1 Input	1	
50	Preempt 2 Input	1	
51	Preempt 3 Input	1	
52	Preempt 4 Input	1	
53	Preempt 5 Input	1	
54	Preempt 6 Input	1	
55	Preempt 7 Input	1	
56	Preempt 8 Input	1	
57	Preempt 9 Input	1	
58	Preempt 10 Input	1	
61	In Transition	1	
81	FIO Status Alarm		

Call Phases[1.1.5]

Ø	Phases Called By Ø
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Redirect Phases[1.1.5]

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

Inhibit Phases[1.1.5]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

Alt Call & Redirect # 1 [1.1.6.3]

Col	Ø	Phases Called By Ø
1		
2		
3		
4		
5		
6		
7		
8		

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								

Alt Inhibit Phases # 1 [1.1.6.3]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																

Alt Call & Redirect # 2 [1.1.6.3]

Col	Ø	Phases Called By Ø
1		
2		
3		
4		
5		
6		
7		
8		

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								

Alt Inhibit Phases # 2 [1.1.6.3]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																

Coord, CIC Plans [2.3]

CIC	CoØ	Grow	1	2	3	4	5	6	7	8
1	OFF									
2	OFF									
3	OFF									
4	OFF									

Auto Flash Phase/Olap Settings [1.4.2]

Yel Ø								
Yel (olaps)								

Unit Parameters [1.2.1]

Allow Skip Yellow	OFF	Max Cycle Time	0
TOD Dim Enable	OFF	Cycle Fault Action	ALARM
Tone Disable	OFF		
Diamond Mode	4Ph		
Backup Time (s)	900		
Disable Init Ped	OFF		
Cycle Fault Action	ALARM		
Enable Run Timer	ON		

Advanced Warning [1,1,9]

	Phase	Time
Aux Out 1	0	0
Aux Out 2	0	0

TE 4D (8/82) STATE OF NEW YORK-DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS

STUDY: 608-3037 CONTRACT: FILE: 46.12-180
SIGNAL #: 4010 COUNTY: STEUBEN PAGE: OF
[] CITY, [X] VILLAGE, [] TOWN OF PAINTED POST
DEPARTMENT ORDER FILED 2/2/89 (DATE) AS SECTION 46.12 SUBDIVISION (d)
PRIOR SPECIFICATIONS HEREBY SUPERCEDED: [] NONE [X] 2/15/08

PURPOSE: RECONSTRUCTED SIGNAL UNDER D259816

THESE SPECIFICATIONS WILL BE EFFECTIVE UPON THE [] INSTALLATION, [X] MODIFICATION OF THE NECESSARY TRAFFIC CONTROL DEVICE(S) REQUIRED BY CONFORMING TO THE STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

I. THIS SIGNAL SHALL:

A. OPERATE IN ACCORDANCE WITH THE TABLE OF OPERATIONS AND/OR CHANGE INTERVALS AS SHOWN ON PAGE(S) 3 AS A:
- [] PRETIMED SIGNAL
- [X] SEMI-TRAFFIC ACTUATED SIGNAL
- [] FULL-TRAFFIC ACTUATED SIGNAL
- [X] PEDESTRIAN ACTUATED SIGNAL
- [] OTHER

B. [X] DISPLAY VEHICULAR INDICATIONS
[] DISPLAY PEDESTRIAN INDICATIONS
[X] BE EQUIPPED WITH VEHICLE DETECTORS
[X] BE EQUIPPED WITH PEDESTRIAN PUSHBUTTONS
AS SHOWN IN THE [X] SCHEMATIC, [] SCALED DRAWING ON PAGE 2

C. BE EQUIPPED WITH [] PRE-EMPTION, [X] INTERCONNECTION AND/OR COORDINATION WHICH ARE DESCRIBED AS FOLLOWS:

Coordinated with signals:

#97 & #100

4/2/08 Carl Rastetter CE-II
(DATE) (SIGNATURE) (TITLE)

cc: [] MAIN OFFICE
[] REGION 6 TRAFFIC ENGINEER
[]
[]

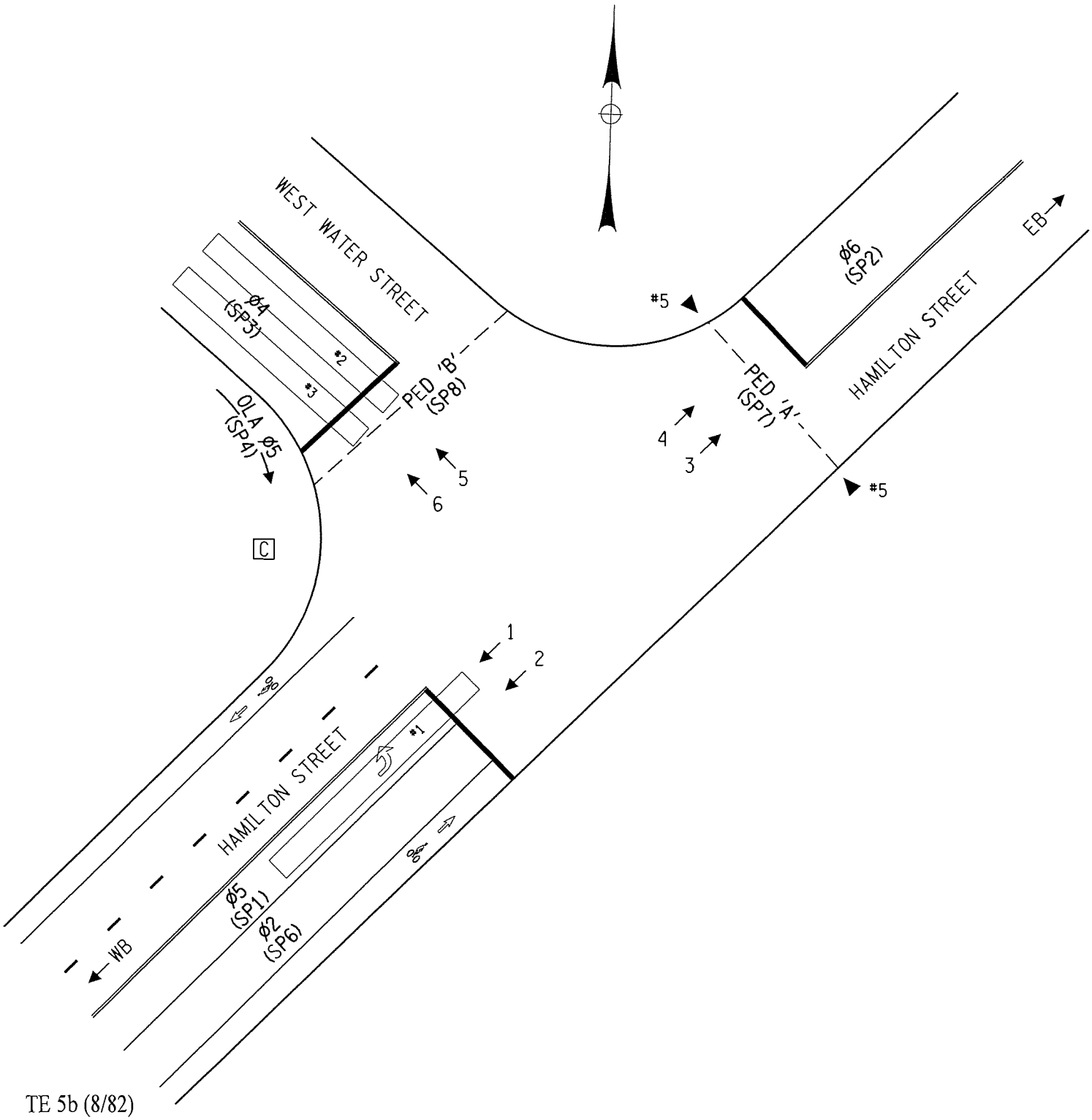
INSTALLATION DATE:
MODIFICATION DATE: 4/3/08

Installed coordination 10/30/17
PTN

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 608-3037
Contract: D259816
P.I.N.: 6008.07
File: 46.12-180

4010	STEUBEN	7/3/08	PAGE_____OF_____PAGES
SIGNAL NO(S).	COUNTY	DATE	



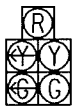
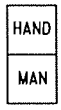
TE 5b (8/82)

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 608-3037
Contract: D259816
P.I.N.: 6008.07
File: 46.12-180

4010	STEUBEN	7/3/08	PAGE_____OF_____PAGES
SIGNAL NO(S).	COUNTY	DATE	

TABLE OF OPERATIONS

PHASES	FACES 1	2	3	4	5	6	PED 'A'	PED 'B'
5	←G, R	R	R	R	R	R, G→	DW	DW
6	R	R	G	G	R	R	DW	W*
2	G	G	R	R	R	R	DW	DW
2+5	←G, G	G	R	R	R	R, G→	DW	DW
2+6	G	G	G	G	R	R	DW	W*
4	R	R	R	R	G	G	W**	DW
FLASH	F.Y.	F.Y.	F.Y.	F.Y.	F.R.	F.R.	OUT	OUT
SIGNAL FACE DISPLAYS								
300 mm DIAMETER LENSES								

*At its onset, the associated phase displays a steady "walking person" and continues to rest in walk until there is a serviceable conflicting call. At the onset of the pedestrian change interval, a flashing "upraised hand" is displayed.

**Upon activation of the pedestrian button, a steady "walking person" is displayed at the onset of the associated phase, followed immediately by a flashing "upraised hand".

TABLE OF CLEARANCES

TO	FROM R	G	←G, R	←G, G	R, G→
R	R	Y	←Y, R	←Y, Y	R, Y→
	R	R	R	R	R
G	R	X	←Y, R	←Y, G	R, Y→
	R	X	R	G	R
←G, R	R	Y	X	←G, Y	X
	R	R	X	←G, R	X
←G, G	R	G	←G, R	X	X
	R	G	←G, R	X	X
R, G→	R	Y	X	X	X
	R	R	X	X	X

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 608-3037
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4010	STEUBEN	7/3/08	PAGE ____ OF ____ PAGES
SIGNAL NO(S).	COUNTY	DATE	

TABLE OF INPUT WIRING

TERM. NUMBER	FUNCTION	DET. NO.	DET. TYPE	DET. AN. OVER	REMARKS
1A, 1B	ø5	1	222		PRES. LOOP - HAMILTON EB LEFT
2A, 2B	ø4	2			PRES. LOOP - WATER LEFT
3A, 3B	ø4	3	222		PRES. LOOP - WATER RIGHT
4A, 4B					
5A, 5B	PED 'A' ø4	5	242		PED 'A' BUTTON - ACROSS HAMILTON
6A, 6B					
7A, 7B					
8A, 8B					
9A, 9B					
10A, 10B					
11A, 11B					
12A, 12B					
13A, 13B					
14A, 14B					
15A, 15B					
16A, 16B					
17A, 17B					
18A, 18B					
19A, 19B					
20A, 20B					
21A, 21B					
22A, 22B					
23A, 23B					
24A, 24B					
25A, 25B					
26A, 26B					
27A, 27B					
28A, 28B					

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 608-3037
Contract: D259816
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4010 SIGNAL NO(S). | STEUBEN COUNTY | 7/3/08 DATE | PAGE____ OF ____ PAGES

TABLE OF SWITCHPACKS

SWITCH PACK	FUNCTION	FACE NUMBERS	FLASH PLUG	INDICATIONS	TERMINAL WIRING BOARD	
					TERMINAL	WIRE COLOR CODE
1	ø5	1 HAM LT	WHITE	-	-	-
				~~Y~~	SP 1Y	14/19C-1-O/R
				~~G~~	SP 1G	14/19C-1-G/W
				GROUND WIRE	GRND. BUS	14/19C-1-W/B
2	ø6	3,4 HAM WB	YELLOW	R	SP 2R	14/19C-2-R
				Y	SP 2Y	14/19C-2-O
				G	SP 2G	14/19C-2-G
				GROUND WIRE	GRND. BUS	14/19C-2-W
3	ø4	5,6 WATER	RED	R	SP 3R	14/19C-1-R/B
				Y	SP 3Y	14/19C-1-O/B
				G	SP 3G	14/19C-1-G/B
				GROUND WIRE	GRND. BUS	14/19C-1-W/B
4	OL A ø5	6 WATER RT	WHITE	-	-	-
				~~Y~~	SP 4Y	14/19C-2-O/R
				~~G~~	SP 4G	14/19C-2-G/W
				GROUND WIRE	GRND. BUS	14/19C-2-W/R
5					SP 5R	
					SP 5Y	
					SP 5G	
					GRND. BUS	
6	ø2	1,2 HAM EB	YELLOW	R	SP 6R	14/19C-1-R
				Y	SP 6Y	14/19C-1-O
				G	SP 6G	14/19C-1-G
				GROUND WIRE	GRND. BUS	14/19C-1-W
7	PED 'A' ø4	N/S X-ING	WHITE	HAND	SP 7R	14/5C-1-R / 14/5C-2-R
				PUSHBUTTON WIRES	TERMINAL 5 A&B	14/5C-1-B / 14/5C-2-B
						14/5C-1-O / 14/5C-2-O
				MAN	SP 7G	14/5C-1-G / 14/5C-2-G
				GROUND WIRE	GRND. BUS	14/5C-1-W / 14/5C-2-W
8	PED 'B' ø6	E/W X-ING	WHITE	HAND	SP 8R	14/5C-3-R / 14/5C-4-R
				MAN	SP 8G	14/5C-3-G / 14/5C-4-G
				GROUND WIRE	GRND. BUS	14/5C-3-W / 14/5C-4-W
9					SP 9R	
					SP 9G	
					GRND. BUS	
10					SP 10R	
					SP 10Y	
					SP 10G	
					GRND. BUS	
11					SP 11R	
					SP 11Y	
					SP 11G	
					GRND. BUS	
12						
13						
14						

COLORS: R-RED, O-ORANGE, G-GREEN, BL-BLUE, W-WHITE, B-BLACK

TE XXX-1R (8/1/85) TABLE OF SWITCH PACKS

TAPS
STUDY #____
FILE #____
PAGE ____ OF

SIGNAL #4010 COUNTY #ST DATE _____

CONFLICT / CURRENT MONITOR PROGRAMMING

CONFLICT MONITOR DIODES TO BE CUT			CONFLICT MONITOR YELLOW JUMPERS TO BE INSTALLED	CURRENT MONITOR DIODES TO BE CUT
1-6			7	1
2-6			8	4
1-4				5
3-7				7
4-7				8
2-8				9
6-8				10
				11
				12
				13
				14
				15
				16

NOTES:

STD8

Phase Times [1.1.1]

	1	2	3	4	5	6	7	8
Min Green				6	6			
Gap, Ext				1	2			
Max 1		45		15	10	45		
Max 2								
Yel Clearance		3.2		3.2	3.2	3.2		
Red Clearance		2.7		2.3	2.7	2.7		
Walk				7		7		
Ped Clearance				9		12		
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time To Reduce								
Reduce By								
Min Gap								
DyMaxLim								
Max Step								

Options [1.1.2]

Options [1.1.2]	1	2	3	4	5	6	7	8
Enable		On		On	On	On		
Min Recall								
Max Recall		On				On		
Ped Recall						On		
Soft Recall								
Lock Calls								
Auto Flash Entry				On				
Auto Flash Exit		On				On		
Dual Entry		On		On		On		On
Enable Simul Gap	On	On	On	On	On	On	On	On
Gaurantee Passage								
Rest In Walk						On		
Conditon Service								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc								

Options+ [1.1.3]

Options+ [1.1.3]	1	2	3	4	5	6	7	8
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Call Phase								
Conflicting Phase								
Omit Yellow								
Ped Delay								
Grn/Ped Delay								

Coordination Patterns [2.4] and Coordination Split Tables [2.7.1]

Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq
1	80	0	1	1	13	0	0	13	1	25	0	0	0	1	37	0	0	0	1
2	0	0	2	1	14	0	0	14	1	26	0	0	0	1	38	0	0	0	1
3	0	0	3	1	15	0	0	15	1	27	0	0	0	1	39	0	0	0	1
4	0	0	4	1	16	0	0	16	1	28	0	0	0	1	40	0	0	0	1
5	0	0	5	1	17	0	0	17	1	29	0	0	0	1	41	0	0	0	1
6	0	0	6	1	18	0	0	18	1	30	0	0	0	1	42	0	0	0	1
7	0	0	7	1	19	0	0	19	1	31	0	0	0	1	43	0	0	0	1
8	0	0	8	1	20	0	0	20	1	32	0	0	0	1	44	0	0	0	1
9	0	0	9	1	21	0	0	21	1	33	0	0	0	1	45	0	0	0	1
10	0	0	10	1	22	0	0	22	1	34	0	0	0	1	46	0	0	0	1
11	0	0	11	1	23	0	0	23	1	35	0	0	0	1	47	0	0	0	1
12	0	0	12	1	24	0	0	24	1	36	0	0	0	1	48	0	0	0	1

Split	1	2	3	4	5	6	7	8	Split	1	2	3	4	5	6	7	8
1 Coor	0	55	0	25	16	39	0	25	13 Coor	0	0	0	0	0	0	0	0
2	NON	MAX	NON	NON	NON	MxP	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
2 Coor	0	0	0	0	0	0	0	0	14 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
3 Coor	0	0	0	0	0	0	0	0	15 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
4 Coor	0	0	0	0	0	0	0	0	16 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
5 Coor	0	0	0	0	0	0	0	0	17 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
6 Coor	0	0	0	0	0	0	0	0	18 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
7 Coor	0	0	0	0	0	0	0	0	19 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
8 Coor	0	0	0	0	0	0	0	0	20 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
9 Coor	0	0	0	0	0	0	0	0	21 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
10 Coor	0	0	0	0	0	0	0	0	22 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
11 Coor	0	0	0	0	0	0	0	0	23 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON
12 Coor	0	0	0	0	0	0	0	0	24 Coor	0	0	0	0	0	0	0	0
	NON	NON	NON	NON	NON	NON	NON	NON		NON	NON	NON	NON	NON	NON	NON	NON

Page#	
1	8 Phase Times/Options; Patterns/Splits; Ring Startup; Coord/Flash Mode; Unit Param
1A&1B	16 Phase Times/Options; Patterns/Splits; Ring Startup; Coord/Flash Mode; Unit Param
2	Overlaps; Channel Settings; Coord Alt Table+ (values not associated with time-of-day)
3	Detection; Sample Time and Unit Parameters related to detection
4	Preemption and Alternate Phase Time and Phase Options
5	Annual Schedule
6	Day Plans; Action Tables; Coord Alt Table+ (values varied by time-of-day)
7	Communications; Secutiry; I/O Setup
8	Misc - Events/Alarms; Call/Inhibit/Redirect; P/OLAP Auto Flash; CIC; Misc Unit Param

Ring/Startup [1.1.4]

Phs	Ring	Start	Enable
1	1	RED	Off
2	1	GREEN	On
3	1	RED	Off
4	1	RED	On
5	2	RED	On
6	2	WALK	On
7	2	RED	Off
8	2	RED	Off

Coord Modes [2.1]

Test OpMode	0
Correction	SHRT/LNG
Maximum	MAX INH
Force-Off	FLOAT
Closed Loop	ON
Stop-in-Walk	OFF
Auto Reset	ON
Expand Splt	OFF
Ped Recycle	P3478_INH
Before	TIMED
After	TIMED

Auto Flash [1.4.1]

Auto Flash	CHANNEL
Flash Yel	45
Flash Red	0

Unit Params [1.2.1]

Phase Mode	STD8
IO Mode	USER
Loc Flsh Start	RED
Start Flash(s)	0
Start AllRed(s)	6
Yellow < 3"	OFF
Display Time	20
Red Revert	3
MCE Timeout	0
Feature Profile	0
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	ON
Auto Ped Clear	OFF
SDLC Retry	0

ID: 4010 WATER ST @ HAMILTON ST

10/27/17 **Page 1**

Overlap 1-16 Program Parms & Parm+ [1.5.2.1] [1.5.2.2]

Overlap Conflict Lock	OFF	Overlap Lock Inhibit	OFF	Parent Ph Clearance	ON	Extra Included Ph	OFF

	Included Ø	5								NORMAL			Included Ø									NORMAL	
1	Modifier Ø									Grn		9	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
A	Conflict Olap									Red	1.5	I	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
2	Modifier Ø									Grn		10	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
B	Conflict Olap									Red	1.5	J	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
3	Modifier Ø									Grn		11	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
C	Conflict Olap									Red	1.5	K	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
4	Modifier Ø									Grn		12	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
D	Conflict Olap									Red	1.5	L	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
5	Modifier Ø									Grn		13	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
E	Conflict Olap									Red	1.5	M	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
6	Modifier Ø									Grn		14	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
F	Conflict Olap									Red	1.5	N	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
7	Modifier Ø									Grn		15	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
G	Conflict Olap									Red	1.5	O	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	
	Included Ø									NORMAL			Included Ø									NORMAL	
8	Modifier Ø									Grn		16	Modifier Ø									Grn	
	Conflict Ø									Yel	3.5		Conflict Ø									Yel	3.5
H	Conflict Olap									Red	1.5	P	Conflict Olap									Red	1.5
	Conflict Ped									LG			Conflict Ped									LG	

Channel Settings [1.8.1]

.....Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Phase / Olap #	**5**	**6**	**4**	**1**		**2**	**4**	**6**																
Channel Type	VEH	VEH	VEH	OLP	VEH	VEH	PED	PED	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
Channel Flash	DRK	YEL	RED	DRK	RED	YEL	DRK	DRK	DRK	DRK	RED	RED	RED	RED	RED	RED	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Alt Hz																								

Channel+ Settings [1.8.4]

.....Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Flash Red+																								
Flash Yellow+																								
Flash Green+																								
Flash Inh Red+																								
Olap Ovrd																								

Coord Transition, CoorPhs [2.5]

Pat#	Short	Long	Dwell	No Shortway Ø				E-Yld	Offset	RetHld	Float	Min Veh Perm	Min Ped Perm
1	12	22							EndGRN	On			
2	12	22							EndGRN				
3	12	22							EndGRN				
4	12	22							EndGRN				
5	12	22							EndGRN				
6	12	22							EndGRN				
7	12	22							EndGRN				
8	12	22							EndGRN				
9	12	22							EndGRN				
10	12	22							EndGRN				
11	12	22							EndGRN				
12	12	22							EndGRN				
13	12	22							EndGRN				
14	12	22							EndGRN				
15	12	22							EndGRN				
16	12	22							EndGRN				
17	12	22							EndGRN				
18	12	22							EndGRN				
19	12	22							EndGRN				
20	12	22							EndGRN				
21	12	22							EndGRN				
22	12	22							EndGRN				
23	12	22							EndGRN				
24	12	22							EndGRN				
25									BegGRN				
26									BegGRN				
27									BegGRN				
28									BegGRN				
29									BegGRN				
30									BegGRN				
31									BegGRN				
32									BegGRN				
33									BegGRN				
34									BegGRN				
35									BegGRN				
36									BegGRN				
37									BegGRN				
38									BegGRN				
39									BegGRN				
40									BegGRN				
41									BegGRN				
42									BegGRN				
43									BegGRN				
44									BegGRN				
45									BegGRN				
46									BegGRN				
47									BegGRN				
48									BegGRN				

Channel Params[1.8.3]

C1 IO Mode	USER	BIU Map	SINGLE	Invert Rail Input	OFF

Veh Par 1-64 [5.1]

Det #	Call Ø	Swi Ø	Dlay	Ext	Que	No Act	Max Pres	Err Cnt	Fail Time
1	5						45	50	10
2	4		5				45	50	13
3	4		8				45	50	13
4							45	50	2
5							45	50	2
6							45	50	2
7							45	50	2
8							45	50	2
9							45	50	2
10							45	50	2
11							45	50	2
12							45	50	2
13							45	50	2
14							45	50	2
15							45	50	2
16							45	50	2
17							45	50	2
18							45	50	2
19							45	50	
20							45	50	
21							45	50	
22							45	50	
23							45	50	
24							45	50	
25							45	50	
26							45	50	
27							45	50	
28							45	50	
29							45	50	
30							45	50	
31							45	50	
32							45	50	

Veh Par 1-64 [5.1]

Det #	Call Ø	Swi Ø	Dlay	Ext	Que	No Act	Max Pres	Err Cnt	Fail Time
33							45	50	
34							45	50	
35							45	50	
36							45	50	
37							45	50	
38							45	50	
39							45	50	
40							45	50	
41							45	50	
42							45	50	
43							45	50	
44							45	50	
45							45	50	
46							45	50	
47							45	50	
48							45	50	
49							45	50	
50							45	50	
51							45	50	
52							45	50	
53							45	50	
54							45	50	
55							45	50	
56							45	50	
57							45	50	
58							45	50	
59							45	50	
60							45	50	
61							45	50	
62							45	50	
63							45	50	
64							45	50	

Vehicle Options 1-64 [5.2]

Det #	Call	Ext	Que	Add Init	Red Lock	Yell Lock	occ	vol
1	On	On		On				
2	On	On		On				
3	On	On		On				
4	On	On		On				
5	On	On		On				
6	On	On		On				
7	On	On		On				
8	On	On		On				
9	On	On		On				
10	On	On		On				
11	On	On		On				
12	On	On		On				
13	On	On		On				
14	On	On		On				
15	On	On		On				
16	On	On		On				
17	On	On		On				
18	On	On		On				
19	On	On		On				
20	On	On		On				
21	On	On		On				
22	On	On		On				
23	On	On		On				
24	On	On		On				
25	On	On		On				
26	On	On		On				
27	On	On		On				
28	On	On		On				
29	On	On		On				
30	On	On		On				
31	On	On		On				
32	On	On		On				

Vehicle Options 1-64 [5.2]

Det #	Call	Ext	Que	Add Ini	Red Lock	Yell Lock	occ	vol
33	On	On		On				
34	On	On		On				
35	On	On		On				
36	On	On		On				
37	On	On		On				
38	On	On		On				
39	On	On		On				
40	On	On		On				
41	On	On		On				
42	On	On		On				
43	On	On		On				
44	On	On		On				
45	On	On		On				
46	On	On		On				
47	On	On		On				
48	On	On		On				
49	On	On		On				
50	On	On		On				
51	On	On		On				
52	On	On		On				
53	On	On		On				
54	On	On		On				
55	On	On		On				
56	On	On		On				
57	On	On		On				
58	On	On		On				
59	On	On		On				
60	On	On		On				
61	On	On		On				
62	On	On		On				
63	On	On		On				
64	On	On		On				

Parameters+ 1-64 [5.3]

Det #	oc G	oc Y	oc R	Dlay 1	Dlay 2	Type	Src
1						NORM	
2						NORM	
3						NORM	
4						NORM	
5						NORM	
6						NORM	
7						NORM	
8						NORM	
9						NORM	
10						NORM	
11						NORM	
12						NORM	
13						NORM	
14						NORM	
15						NORM	
16						NORM	
17						NORM	
18						NORM	
19						NORM	
20						NORM	
21						NORM	
22						NORM	
23						NORM	
24						NORM	
25						NORM	
26						NORM	
27						NORM	
28						NORM	
29						NORM	
30						NORM	
31						NORM	
32						NORM	

Parameters+ 1-64 [5.3]

Det #	occ Grn	occ Yell	occ Red	Dlay 1	Dlay 2	Type	Src
33						NORM	
34						NORM	
35						NORM	
36						NORM	
37						NORM	
38						NORM	
39						NORM	
40						NORM	
41						NORM	
42						NORM	
43						NORM	
44						NORM	
45						NORM	
46						NORM	
47						NORM	
48						NORM	
49						NORM	
50						NORM	
51						NORM	
52						NORM	
53						NORM	
54						NORM	
55						NORM	
56						NORM	
57						NORM	
58						NORM	
59						NORM	
60						NORM	
61						NORM	
62						NORM	
63						NORM	
64						NORM	

Ped Det Parms [5.4]

Det #	Call Ø	No Act	Max Pres	Err Cnt
1	4		15	
2	6		15	
3			15	
4			15	
5			15	
6			15	
7			15	
8			15	

Unit Paramters [1.2.1]

TS2 Det Faults	ON

Vol/Occ Report Parm [1.5.8]

Vol/Occ Period Minutes	15
Vol/Occ Period Minutes	0

Preemption Times [3.1], Options+ [3.6]

Pre #	Enable	Type	Output	Delay	MinDura
1	ON	RAIL	DWELL		
2	ON	RAIL	DWELL		
3	ON	EMERG	DWELL		
4	ON	EMERG	DWELL		
5	ON	EMERG	DWELL		
6	ON	EMERG	DWELL		

Pre #	MaxPres	MinGrn	MinWlk	PedClr	Co+Pre
1					ON
2					ON
3					ON
4					ON
5					ON
6					ON

Pre #	Track Grn	Min Dwell	Ext Dwell	PedClr+	Yel
1		2			
2		2			
3		2			
4		2			
5		2			
6		2			

Pre #	Red	Pattern	Skip
1			OFF
2			OFF
3			OFF
4			OFF
5			OFF
6			OFF

Low Priority Preempts

Pre #	Type	Min	Max		
7	OFF				
8	OFF				
9	OFF				
10	OFF				

Unit Parameters [1.2.1]

Stop Timer Over Preempt	OFF
Preempt or Ext Output	PRE
Max Seek Track Time	
Max Seek Dwell Time	

Channel Parameters [1.8.3]

D Conn Mappings	NONE
Pre Invert Rail Input	OFF

Track Clear Phases [3.2], Track Clear Overlaps+ [3.5]

Pre #	Track Phases					Track Overlaps										
1																
2																
3																
4																
5																
6																

Dwell Phases [3.2] and Overlaps+ [3.5]

Pre #														
1	Phases													
	Overlaps													
	Peds													
2	Phases													
	Overlaps													
	Peds													
3	Phases													
	Overlaps													
	Peds													
4	Phases													
	Overlaps													
	Peds													
5	Phases													
	Overlaps													
	Peds													
6	Phases													
	Overlaps													
	Peds													

Exit Phases [3.2]

Pre #	Exit Phase				
1					
2					
3					
4					
5					
6					

Preemption Options+ [3.6]

Pre #	Lock	Override Auto Flsh		Override Higher		Flsh Dwel	Link
1	ON	ON		ON		OFF	
2	ON	ON		ON		OFF	
3	ON	ON		ON		OFF	
4	ON	ON		ON		OFF	
5	ON	ON		ON		OFF	
6	ON	ON		ON		OFF	

Annual Schedule [4.3] Month of Year | Day of Week | Date | DayLink

	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Plan	To
1	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	1	
2																																																				1	
3																																																			1	
4																																																			1	
5																																																			1	
6																																																			1	
7																																																			1	
8																																																			1	
9																																																			1	
10																																																			1	
11																																																			1	
12																																																			1	
13																																																			1	
14																																																			1	
15																																																			1	
16																																																			1	
17																																																			1	
18																																																			1	
19																																																			1	
20																																																			1	
21																																																			1	
22																																																			1	
23																																																			1	
24																																																			1	

ID: 4010 **WATER ST @ HAMILTON ST**

Day Plans [4.4]

Day Plan 1

	Hour	Min	Act		Hour	Min	Act
1	0	0	1	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 2

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 3

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 4

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 5

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 6

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 7

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 8

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 9

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 10

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 11

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 12

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 13

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 14

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 15

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Action Table [4.5]

Act#	Pat#	A1	A2	A3	S1	S2	S3	S4	S5	S6	S7	S8
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8											
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
48												
98												
99												
100	255											

Coord Alternate Tables - Pat+ [2.6]

Pat#	ØOpt	ØTime	DetG	Call Inh	CIC	CNA1	Overlap Off 1	2	3	4	5	6	7	8	Dia	Max2
1															DFT	
2															DFT	
3															DFT	
4															DFT	
5															DFT	
6															DFT	
7															DFT	
8															DFT	
9															DFT	
10															DFT	
11															DFT	
12															DFT	
13															DFT	
14															DFT	
15															DFT	
16															DFT	
17															DFT	
18															DFT	
19															DFT	
20															DFT	
21															DFT	
22															DFT	
23															DFT	
24															DFT	
25															DFT	
26															DFT	
27															DFT	
28															DFT	
29															DFT	
30															DFT	
31															DFT	
32															DFT	
33															DFT	
34															DFT	
35															DFT	
36															DFT	
37															DFT	
38															DFT	
39															DFT	
40															DFT	
41															DFT	
42															DFT	
43															DFT	
44															DFT	
45															DFT	
46															DFT	
47															DFT	
48															DFT	

C1-USER IO Map [1.8.9.1 In]

I1-1	1	Veh Call 1
I1-2	2	Veh Call 2
I1-3	3	Veh Call 3
I1-4	189	Unused
I1-5	129	Ped Call 1
I1-6	189	Unused
I1-7	189	Unused
I1-8	189	Unused
I2-1	189	Unused
I2-2	189	Unused
I2-3	189	Unused
I2-4	189	Unused
I2-5	189	Unused
I2-6	189	Unused
I2-7	189	Unused
I2-8	189	Unused
I3-1	189	Unused
I3-2	189	Unused
I3-3	189	Unused
I3-4	189	Unused
I3-5	189	Unused
I3-6	189	Unused
I3-7	189	Unused
I3-8	189	Unused
I4-1	C11S Connector	
I4-2		
I4-3		
I4-4		
I4-5	189	Unused
I4-6	189	Unused
I4-7	229	33xCMUStop
I4-8	228	33xFlashSns
I5-1	189	Unused
I5-2	189	Unused
I5-3	189	Unused
I5-4	189	Unused
I5-5	189	Unused
I5-6	189	Unused
I5-7	189	Unused
I5-8	189	Unused
I6-1	189	Unused
I6-2	189	Unused
I6-3	189	Unused
I6-4	189	Unused
I6-5	189	Unused
I6-6	189	Unused
I6-7	189	Unused
I6-8	189	Unused

C1-USER IO Map [1.8.9.2 Out]

O1-1	1	Ch1 Red
O1-2	49	Ch1 Green
O1-3	2	Ch2 Red
O1-4	26	Ch2 Yellow
O1-5	50	Ch2 Green
O1-6	3	Ch3 Red
O1-7	27	Ch3 Yellow
O1-8	51	Ch3 Green
O2-1	4	Ch4 Red
O2-2	52	Ch4 Green
O2-3	5	Ch5 Red
O2-4	29	Ch5 Yellow
O2-5	53	Ch5 Green
O2-6	6	Ch6 Red
O2-7	30	Ch6 Yellow
O2-8	54	Ch6 Green
O3-1	7	Ch7 Red
O3-2	55	Ch7 Green
O3-3	8	Ch8 Red
O3-4	32	Ch8 Yellow
O3-5	56	Ch8 Green
O3-6	9	Ch9 Red
O3-7	33	Ch9 Yellow
O3-8	57	Ch9 Green
O4-1	10	Ch10 Red
O4-2	58	Ch10 Green
O4-3	11	Ch11 Red
O4-4	35	Ch11 Yellow
O4-5	59	Ch11 Green
O4-6	12	Ch12 Red
O4-7	36	Ch12 Yellow
O4-8	60	Ch12 Green
O5-1	28	Ch4 Yellow
O5-2	34	Ch10 Yellow
O5-3	25	Ch1 Yellow
O5-4	31	Ch7 Yellow
O5-5	115	Not Used
O5-6	115	Not Used
O5-7	115	Not Used
O5-8	114	Watchdog
O6-1	115	Not Used
O6-2	115	Not Used
O6-3	13	Ch13 Red
O6-4	37	Ch13 Yellow
O6-5	61	Ch13 Green
O6-6	14	Ch14 Red
O6-7	38	Ch14 Yellow
O6-8	62	Ch14 Green

C1-USER IO Map [1.8.9.2 Out]

O7-1	115	Not Used
O7-2	115	Not Used
O7-3	115	Not Used
O7-4	115	Not Used
O7-5	115	Not Used
O7-6	115	Not Used
O7-7	115	Not Used
O7-8	115	Not Used

C11S-USER IO Map [1.8.9.1 In]

I4-1	189	Unused
I4-2	189	Unused
I4-3	189	Unused
I4-4	189	Unused
I7-1	189	Unused
I7-2	189	Unused
I7-3	189	Unused
I7-4	189	Unused
I7-5	189	Unused
I7-6	189	Unused
I7-7	189	Unused
I7-8	189	Unused
I8-1	189	Unused
I8-2	189	Unused
I8-3	189	Unused
I8-4	189	Unused
I8-5	189	Unused
I8-6	189	Unused
I8-7	189	Unused
I8-8	189	Unused

C11S-USER IO Map [1.8.9.2 Out]

O8-1	115	Not Used
O8-2	115	Not Used
O8-3	115	Not Used
O8-4	115	Not Used
O8-5	115	Not Used
O8-6	115	Not Used
O8-7	115	Not Used
O8-8	115	Not Used

IO Logic [1.8.7]

Result				Fcn	Oper		Fcn	Oper		Fcn	Timer	
I	130	=	O	----	8	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY
I	0	=	I	----	0	I	----	0	I	----	0	DLY

Security Access Levels [8.2]

1	SWLOAD
2	SECURE
3	NONE
4	NONE
5	NONE
6	NONE
7	NONE
8	NONE
9	NONE
10	NONE
11	NONE
12	NONE
13	NONE
14	NONE
15	NONE
16	NONE
17	NONE
18	NONE
19	NONE
20	NONE
21	NONE

22	NONE
23	NONE
24	NONE
25	NONE
26	NONE
27	NONE
28	NONE
29	NONE
30	NONE
31	NONE
32	NONE
33	NONE
34	NONE
35	NONE
36	NONE
37	NONE
38	NONE
39	NONE
40	NONE
41	NONE
42	NONE

43	NONE
44	NONE
45	NONE
46	NONE
47	NONE
48	NONE
49	NONE
50	NONE
51	NONE
52	NONE
53	NONE
54	NONE
55	NONE
56	NONE
57	NONE
58	NONE
59	NONE
60	NONE
61	NONE
62	NONE
63	NONE
64	NONE

Com Parameters [6.1]

Station ID	4010
Group ID	
Master ID	0
Backup Time	0

SysUp Modem [6.1]

Enable Modem	OFF
Idle Time	0
Dial Time	0
Tel:	#N/A
Alt:	#N/A

2070 Port Parms [6.2]

Port	Baud Rate	FCM
SP1	9600	MODE 6
SP2	9600	MODE 6
SP3	19200	MODE 6
SP4	38400	MODE 6
SP5	1200	AUTO
SP6	1200	AUTO
SP7	1200	AUTO
SP8	1200	AUTO

2070 IP 1 Addressing [6.5]

	Addressing			
Addr	192	168	0	100
Mask	255	255	255	0
Brdcst	0	0	0	0
GtWay	192	168	0	1
Port	5001			

2070 IP 2 Addressing [6.5]

	Addressing			
Addr	0	0	0	0
Mask	0	0	0	0
Brdcst	0	0	0	0
GtWay	0	0	0	0
Port	0			

2070 Port Binding Ports [6.6]

	Port	Echo	Mode
ASYNC1	SP1	OFF	0
ASYNC2	SP2	OFF	0
ASYNC3	SP3	OFF	0
ASYNC4	SP4	OFF	0
SYNC1	SP5S	SYNC3	OFF
SYNC2	OFF	SYNC4	OFF

2070 Port Binding Functions [6.6]

Function	Channel	Function	Channel
TS2/CVM	NONE	SYSUp	ASYNC2
CMU/MMU	NONE	SYSDown	ASYNC1
Opticom	NONE	Shell	NONE
Loop Det.	NONE		
GPS	NONE		

#	Event / Alarm	Ev	Alr
1	Power Up Alarm.	On	On
2	Stop Timing	On	On
3	TS1 Cabinet Door	On	On
4	Coordination Failure	On	On
5	External Alarm # 1	On	On
6	External Alarm # 2	On	On
7	External Alarm # 3		
8	External Alarm # 4		
9	Closed Loop Disabled	On	On
10	External Alarm # 5		
11	External Alarm # 6		
12	Manual Control Enable	On	On
13	Coord Free Input		
14	Local Flash Input	On	On
15	MMU Flash		
16	CMU Flash		
17	Cycle Fault	On	On
18	Cycle Failure	On	On
19	Coordination Fault	On	On
20	Controller Fault	On	On
21	Detector SDLC Failure		
22	MMU SDLC Failure		
23	Critical SDLC Failure		
24	Reserved		
25	EEPROM CRC Fault	On	On
26	Detector Diagnostic Failur	On	On
27	BIU Detector Failure	On	On
28	Queue detector alarm	On	On
29	Ped Detector Fault	On	On
30	Coord Diagnostic Fault		
41	TempAlert Probe Ch. A		
42	TempAlert Probe Ch. B		
47	Coord Active		
48	Preempt Active	On	On
49	Preempt 1 Input	On	On
50	Preempt 2 Input	On	On
51	Preempt 3 Input	On	On
52	Preempt 4 Input	On	On
53	Preempt 5 Input	On	On
54	Preempt 6 Input	On	On
55	Preempt 7 Input	On	On
56	Preempt 8 Input	On	On
57	Preempt 9 Input	On	On
58	Preempt 10 Input	On	On
61	In Transition	On	On
81	FIO Status Alarm		

Call Phases[1.1.5]

Ø	Phases Called By Ø
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Redirect Phases[1.1.5]

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

Inhibit Phases[1.1.5]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

Alt Call & Redirect # 1 [1.1.6.3]

Col	Ø	Phases Called By Ø
1		
2		
3		
4		
5		
6		
7		
8		

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								

Alt Inhibit Phases # 1 [1.1.6.3]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																

Alt Call & Redirect # 2 [1.1.6.3]

Col	Ø	Phases Called By Ø
1		
2		
3		
4		
5		
6		
7		
8		

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								

Alt Inhibit Phases # 2 [1.1.6.3]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																

Coord, CIC Plans [2.3]

CIC	CoØ	Grow	1	2	3	4	5	6	7	8
1	OFF									
2	OFF									
3	OFF									
4	OFF									

Auto Flash Phase/Olap Settings [1.4.2]

Yel Ø								
Yel (olaps)								

Unit Parameters [1.2.1]

Allow Skip Yellow	OFF	Max Cycle Time	
TOD Dim Enable	OFF	Cycle Fault Action	ALARM
Tone Disable	OFF		
Diamond Mode	4Ph		
Backup Time (s)	900		
Disable Init Ped	OFF		
Cycle Fault Action	ALARM		
Enable Run Timer	ON		

TE 4D (8/82) STATE OF NEW YORK-DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS

STUDY: 608-3065 CONTRACT: D259816 FILE: 46.12-15
SIGNAL #: 4097 COUNTY: STEUBEN PAGE: OF
[ ] CITY, [X] VILLAGE, [ ] TOWN OF PAINTED POST
DEPARTMENT ORDER FILED AS SECTION 2046.12
(DATE) SUBDIVISION (e)
PRIOR SPECIFICATIONS HEREBY SUPERCEDED: [ ] NONE [X] 11/21/07

PURPOSE: RECONSTRUCTION OF SIGNAL EQUIPMENT

THESE SPECIFICATIONS WILL BE EFFECTIVE UPON THE [X] INSTALLATION, [ ] MODIFICATION OF THE NECESSARY TRAFFIC CONTROL DEVICE(S) REQUIRED BY CONFORMING TO THE STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

I. THIS SIGNAL SHALL:

A. OPERATE IN ACCORDANCE WITH THE TABLE OF OPERATIONS AND/OR CHANGE INTERVALS AS SHOWN ON PAGE(S) 3 AS A:
- [ ] PRETIMED SIGNAL
- [X] SEMI-TRAFFIC ACTUATED SIGNAL
- [ ] FULL-TRAFFIC ACTUATED SIGNAL
- [X] PEDESTRIAN ACTUATED SIGNAL
- [ ] OTHER

B.
- [X] DISPLAY VEHICULAR INDICATIONS
- [X] DISPLAY PEDESTRIAN INDICATIONS
- [X] BE EQUIPPED WITH VEHICLE DETECTORS
- [X] BE EQUIPPED WITH PEDESTRIAN PUSHBUTTONS

AS SHOWN IN THE [X] SCHEMATIC, [ ] SCALED DRAWING ON PAGE 2

C. BE EQUIPPED WITH [ ] PRE-EMPTION, [X] INTERCONNECTION AND/OR COORDINATION WHICH ARE DESCRIBED AS FOLLOWS:

COORDINATED WITH SIGNAL #4100

7/3/08 Carl Washburn CE II
(DATE) (SIGNATURE) (TITLE)

cc: [ ] MAIN OFFICE
[ ] REGION 6 TRAFFIC ENGINEER
[ ]
[ ]

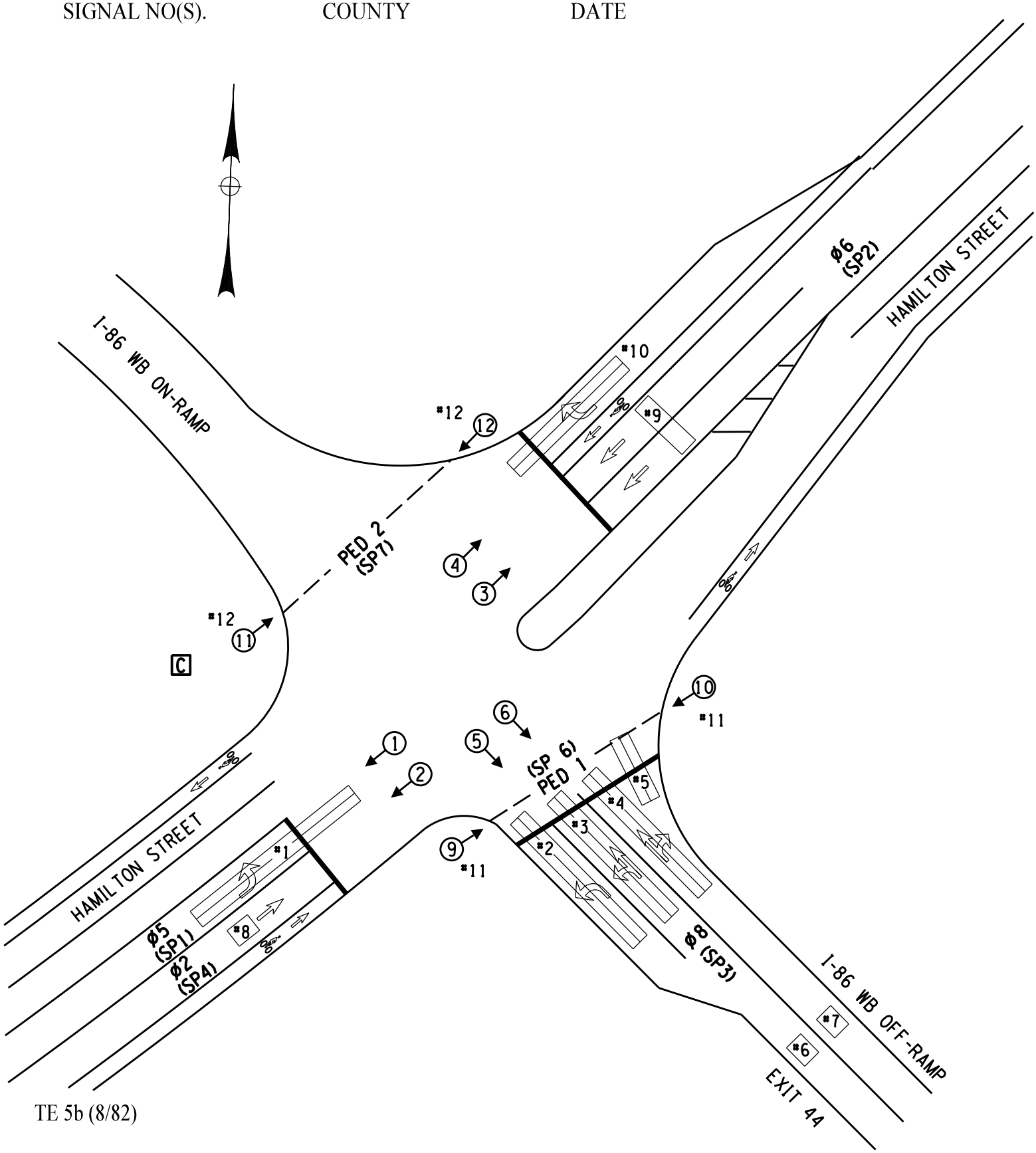
INSTALLATION DATE: 7-15-08

MODIFICATION DATE: ACTIVATED TBC 8/6/08
New detection program activated 8/4/17

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 616-0016
Contract: D263125
P.I.N.: 6067.14
File: 46.12-417

4097	STEUBEN	7/27/16	PAGE_____OF_____PAGES
SIGNAL NO(S).	COUNTY	DATE	



TE 5b (8/82)

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 616-0016
Contract: D263125
P.I.N.: 6067.14
File: 46.12-417

4097	STEUBEN	7/27/16	PAGE_____OF_____PAGES
SIGNAL NO(S).	COUNTY	DATE	

TABLE OF INPUT WIRING

TERM. NUMBER	FUNCTION	DET. NO.	DET. TYPE	DET. AN. OVER	REMARKS
1A, 1B	ø5	1	222		PRES. LOOP - HAMILTON ST NB LEFT
2A, 2B	ø8	2			PRES. LOOP - I86 WB OFF-RAMP
3A, 3B	ø8	3	222		PRES. LOOP - I86 WB OFF-RAMP
4A, 4B	ø8	4			PRES. LOOP - I86 WB OFF-RAMP
5A, 5B	ø8	5	222		PRES. LOOP - I86 WB OFF-RAMP
6A, 6B	ø8	6			SPOT LOOP - I86 WB OFF-RAMP
7A, 7B	ø8	7	222		SPOT LOOP - I86 WB OFF-RAMP
8A, 8B	ø2	8			SPOT LOOP - HAMILTON ST NB THRU
9A, 9B	ø6	9	222		SPOT LOOP - HAMILTON ST SB THRU'S
10A, 10B	ø6	10			PRES.LOOP - HAMILTON ST SB RIGHT
11A, 11B	PED 1 - ø2	11	242		PED TO CROSS I-86 WB OFF-RAMP
12A, 12B	PED 2 - ø6	12			PED TO CROSS I-86 WB ON-RAMP
13A, 13B					
14A, 14B					
15A, 15B					
16A, 16B					
17A, 17B					
18A, 18B					
19A, 19B					
20A, 20B					
21A, 21B					
22A, 22B					
23A, 23B					
24A, 24B					
25A, 25B					
26A, 26B					
27A, 27B					
28A, 28B					

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 608-3065
Contract: D259816
P.I.N.: 6008.07
File: 46.12-15

4097 SIGNAL NO(S). | STEUBEN COUNTY | 7/11/08 DATE | PAGE____OF____PAGES

TABLE OF SWITCHPACKS

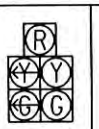
SWITCH PACK	FUNCTION	FACE NUMBERS	FLASH PLUG	INDICATIONS	TERMINAL WIRING BOARD		
					TERMINAL	WIRE COLOR CODE	
1	ø5	1 HAM LEFT	W	-	-	-	
				~~Y~~	SP 1Y	14/19C-1-O	
				~~G~~	SP 1G	14/19C-1-G	
				GROUND WIRE	GRND. BUS	14/19C-1-W	
2	ø6	3,4 HAM SB	R	R	SP 2R	14/19C-1-R/B	
				Y	SP 2Y	14/19C-1-O/B	
				G	SP 2G	14/19C-1-G/B	
				GROUND WIRE	GRND. BUS	14/19C-1-W/B	
3	ø8	5,6 OFF-RAMP	R	R	SP 3R	14/19C-1-R/W	
				Y	SP 3Y	14/19C-1-BL/W	
				G	SP 3G	14/19C-1-G/W	
				GROUND WIRE	GRND. BUS	14/19C-1-B/W	
4	ø2	1,2 HAM NB	R	R	SP 4R	14/19C-1-B/R	
				Y	SP 4Y	14/19C-1-O/R	
				G	SP 4G	14/19C-1-BL/R	
				GROUND WIRE	GRND. BUS	14/19C-1-W/R	
5					SP 5R		
					SP 5Y		
					SP 5G		
					GRND. BUS		
6	PED'A' ø2	9,10	W	HAND	SP 6R	14/5C-1-R	14/5C-2-R
				MAN	SP 6G	14/5C-1-G	14/5C-2-G
				GROUND WIRE	GRND. BUS	14/5C-1-W	14/5C-2-W
7	PED'B' ø6	11,12	W	HAND	SP 7R	14/5C-3-R	14/5C-4-R
				MAN	SP 7G	14/5C-3-G	14/5C-4-G
				GROUND WIRE	GRND. BUS	14/5C-3-W	14/5C-4-W
8							
9							
10							
11							
12							
13							
14							

COLORS: R-RED, O-ORANGE, G-GREEN, BL-BLUE, W-WHITE, B-BLACK

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 608-3065
Contract: D259816
P.I.N.: 6008.07
File: 46.12-15

4097	STEUBEN	7/11/08	PAGE_____OF_____PAGES
SIGNAL NO(S).	COUNTY	DATE	

OPERATION TABLE								
Ø \ FACE	1	2	3	4	5	6	PED 'A'	PED 'B'
2	G	G	R	R	R	R	W*	DW
5	←G, R	R	R	R	R	R	DW	DW
6	R	R	G	G	R	R	DW	W*
2+5	←G, G	G	R	R	R	R	W*	DW
2+6	G	G	G	G	R	R	W*	W*
8	R	R	R	R	G	G	DW	DW
FLASH	F.R.	F.R.	F.R.	F.R.	F.R.	F.R.	OUT	OUT
SIGNAL FACE DISPLAYS								
300 mm DIAMETER LENSES								

*At its onset, the associated phase displays a steady "walking person" and continues to rest in walk until there is a serviceable conflicting call. At the onset of the pedestrian change interval, both a flashing "upraised hand" and a countdown pedestrian signal, which indicates of the number of seconds remaining in the pedestrian change interval, is displayed.

CLEARANCE TABLE					
CLEARANCE	TO \ FROM	R	G	←G, R	←G, G
1ST	R	R	Y	←Y, R	←Y, Y
2ND		R	R	R	R
1ST	G	R	G	←Y, R	←Y, G
2ND		R	G	R	G
1ST	←G, R	R	Y	X	←G, Y
2ND		R	R	X	←G, R
1ST	←G, G	R	G	←G, R	X
2ND		R	G	←G, R	X

STD8

Phase Times [1.1.1]

	1	2	3	4	5	6	7	8
Min Green		6			6	6		6
Gap, Ext		2			2	2		2
Max 1		35			15	35		30
Max 2								
Yel Clearance		3.6			3.6	3.6		4.9
Red Clearance		2.5			2.5	2.5		2.8
Walk		7				7		
Ped Clearance		16				20		
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time To Reduce								
Reduce By								
Min Gap								
DyMaxLim								
Max Step								

Options [1.1.2]	1	2	3	4	5	6	7	8
Enable		On			On	On		On
Min Recall								
Max Recall								
Ped Recall								
Soft Recall								
Lock Calls								
Auto Flash Entry								On
Auto Flash Exit		On				On		
Dual Entry		On		On		On		On
Enable Simul Gap	On	On	On	On	On	On	On	On
Gaurantee Passage								
Rest In Walk								
Conditon Service								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc								

Options+ [1.1.3]	1	2	3	4	5	6	7	8
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Call Phase								
Conflicting Phase								
Omit Yellow								
Ped Delay								
Grn/Ped Delay								

Coordination Patterns [2.4] and Coordination Split Tables [2.7.1]

Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq
1	80	0	1	1	13	0	0	13	1	25	0	0	0	1	37	0	0	0	1
2	0	0	2	1	14	0	0	14	1	26	0	0	0	1	38	0	0	0	1
3	0	0	3	1	15	0	0	15	1	27	0	0	0	1	39	0	0	0	1
4	0	0	4	1	16	0	0	16	1	28	0	0	0	1	40	0	0	0	1
5	0	0	5	1	17	0	0	17	1	29	0	0	0	1	41	0	0	0	1
6	0	0	6	1	18	0	0	18	1	30	0	0	0	1	42	0	0	0	1
7	0	0	7	1	19	0	0	19	1	31	0	0	0	1	43	0	0	0	1
8	0	0	8	1	20	0	0	20	1	32	0	0	0	1	44	0	0	0	1
9	0	0	9	1	21	0	0	21	1	33	0	0	0	1	45	0	0	0	1
10	0	0	10	1	22	0	0	22	1	34	0	0	0	1	46	0	0	0	1
11	0	0	11	1	23	0	0	23	1	35	0	0	0	1	47	0	0	0	1
12	0	0	12	1	24	0	0	24	1	36	0	0	0	1	48	0	0	0	1

Split		1	2	3	4	5	6	7	8	Split		1	2	3	4	5	6	7	8
1	Coor	0	38	0	42	14	24	0	42	13	Coor	0	0	0	0	0	0	0	0
	2	NON	MxP	NON	NON	NON	MAX	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
2	Coor	0	20	0	40	10	20	0	40	14	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	MAX	NON	NON	NON	MAX			NON	NON	NON	NON	NON	NON	NON	NON
3	Coor	0	0	0	0	0	0	0	0	15	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
4	Coor	0	0	0	0	0	0	0	0	16	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
5	Coor	0	0	0	0	0	0	0	0	17	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
6	Coor	0	0	0	0	0	0	0	0	18	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
7	Coor	0	0	0	0	0	0	0	0	19	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
8	Coor	0	0	0	0	0	0	0	0	20	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
9	Coor	0	0	0	0	0	0	0	0	21	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
10	Coor	0	0	0	0	0	0	0	0	22	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
11	Coor	0	0	0	0	0	0	0	0	23	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
12	Coor	0	0	0	0	0	0	0	0	24	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON

Page#	
1	8 Phase Times/Options; Patterns/Splits; Ring Startup; Coord/Flash Mode; Unit Param
1A&1B	16 Phase Times/Options; Patterns/Splits; Ring Startup; Coord/Flash Mode; Unit Param
2	Overlaps; Channel Settings; Coord Alt Table+ (values not associated with time-of-day)
3	Detection; Sample Time and Unit Parameters related to detection
4	Preemption and Alternate Phase Time and Phase Options
5	Annual Schedule
6	Day Plans; Action Tables; Coord Alt Table+ (values varied by time-of-day)
7	Communications; Secutiry; I/O Setup
8	Misc - Events/Alarms; Call/Inhibit/Redirect; P/OLAP Auto Flash; CIC; Misc Unit Param

Ring/Startup [1.1.4]

Phs	Ring	Start	Enable
1	1	RED	Off
2	1	WALK	On
3	1	RED	Off
4	1	RED	Off
5	2	RED	On
6	2	WALK	On
7	2	RED	Off
8	2	RED	On

Coord Modes [2.1]

Test OpMode	0
Correction	SHRT/LNG
Maximum	MAX INH
Force-Off	FLOAT
Closed Loop	ON
Stop-in-Walk	ON
Auto Reset	ON
Expand Splt	OFF
Ped Recycle	NO_RECYCLE
Before	TIMED
After	TIMED

Auto Flash [1.4.1]

Auto Flash	CHANNEL
Flash Yel	45
Flash Red	0

Unit Params [1.2.1]

Phase Mode	STD8
IO Mode	USER
Loc Flsh Start	RED
Start Flash(s)	0
Start AllRed(s)	6
Yellow < 3"	OFF
Display Time	20
Red Revert	3
MCE Timeout	0
Feature Profile	0
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	ON
Auto Ped Clear	OFF
SDLC Retry	0

ID: 4097 HAMILTON @ I86 Ex 44 W.B. Ramp

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Overlap 1-16 Program Parms & Parm+ [1.5.2.1] [1.5.2.2]

Overlap Conflict Lock	OFF	Overlap Lock Inhibit	OFF	Parent Ph Clearance	ON	Extra Included Ph	OFF

1	Included Ø								NORMAL		9	Included Ø								NORMAL	
	Modifier Ø								Grn			Modifier Ø								Grn	
	Conflict Ø								Yel	3.5		Conflict Ø								Yel	3.5
A	Conflict Olap								Red	1.5	I	Conflict Olap								Red	1.5
	Conflict Ped								LG			Conflict Ped								LG	
2	Included Ø								NORMAL		10	Included Ø								NORMAL	
	Modifier Ø								Grn			Modifier Ø								Grn	
	Conflict Ø								Yel	3.5		Conflict Ø								Yel	3.5
B	Conflict Olap								Red	1.5	J	Conflict Olap								Red	1.5
	Conflict Ped								LG			Conflict Ped								LG	
3	Included Ø								NORMAL		11	Included Ø								NORMAL	
	Modifier Ø								Grn			Modifier Ø								Grn	
	Conflict Ø								Yel	3.5		Conflict Ø								Yel	3.5
C	Conflict Olap								Red	1.5	K	Conflict Olap								Red	1.5
	Conflict Ped								LG			Conflict Ped								LG	
4	Included Ø								NORMAL		12	Included Ø								NORMAL	
	Modifier Ø								Grn			Modifier Ø								Grn	
	Conflict Ø								Yel	3.5		Conflict Ø								Yel	3.5
D	Conflict Olap								Red	1.5	L	Conflict Olap								Red	1.5
	Conflict Ped								LG			Conflict Ped								LG	
5	Included Ø								NORMAL		13	Included Ø								NORMAL	
	Modifier Ø								Grn			Modifier Ø								Grn	
	Conflict Ø								Yel	3.5		Conflict Ø								Yel	3.5
E	Conflict Olap								Red	1.5	M	Conflict Olap								Red	1.5
	Conflict Ped								LG			Conflict Ped								LG	
6	Included Ø								NORMAL		14	Included Ø								NORMAL	
	Modifier Ø								Grn			Modifier Ø								Grn	
	Conflict Ø								Yel	3.5		Conflict Ø								Yel	3.5
F	Conflict Olap								Red	1.5	N	Conflict Olap								Red	1.5
	Conflict Ped								LG			Conflict Ped								LG	
7	Included Ø								NORMAL		15	Included Ø								NORMAL	
	Modifier Ø								Grn			Modifier Ø								Grn	
	Conflict Ø								Yel	3.5		Conflict Ø								Yel	3.5
G	Conflict Olap								Red	1.5	O	Conflict Olap								Red	1.5
	Conflict Ped								LG			Conflict Ped								LG	
8	Included Ø								NORMAL		16	Included Ø								NORMAL	
	Modifier Ø								Grn			Modifier Ø								Grn	
	Conflict Ø								Yel	3.5		Conflict Ø								Yel	3.5
H	Conflict Olap								Red	1.5	P	Conflict Olap								Red	1.5
	Conflict Ped								LG			Conflict Ped								LG	

Channel Settings [1.8.1]

.....Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Phase / Olap #	**5**	**6**	**8**	**2**		**2**	**6**																	
Channel Type	VEH	VEH	VEH	VEH	VEH	PED	PED	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
Channel Flash	DRK	RED	RED	RED	DRK	DRK	DRK	RED	RED	RED	RED	RED	RED	RED	RED	RED	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Alt Hz																								

Channel+ Settings [1.8.4]

.....Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Flash Red+																								
Flash Yellow+																								
Flash Green+																								
Flash Inh Red+																								
Olap Ovrd																								

Coord Transition, CoorPhs [2.5]

Pat#	Short	Long	Dwell	No Shortway Ø				E-Yld	Offset	RetHld	Float	Min Veh Perm	Min Ped Perm
1	12	22		6	5				EndGRN	On			On
2	12	22							EndGRN				
3	12	22							EndGRN				
4	12	22							EndGRN				
5	12	22							EndGRN				
6	12	22							EndGRN				
7	12	22							EndGRN				
8	12	22							EndGRN				
9	12	22							EndGRN				
10	12	22							EndGRN				
11	12	22							EndGRN				
12	12	22							EndGRN				
13	12	22							EndGRN				
14	12	22							EndGRN				
15	12	22							EndGRN				
16	12	22							EndGRN				
17	12	22							EndGRN				
18	12	22							EndGRN				
19	12	22							EndGRN				
20	12	22							EndGRN				
21	12	22							EndGRN				
22	12	22							EndGRN				
23	12	22							EndGRN				
24	12	22							EndGRN				
25									BegGRN				
26									BegGRN				
27									BegGRN				
28									BegGRN				
29									BegGRN				
30									BegGRN				
31									BegGRN				
32									BegGRN				
33									BegGRN				
34									BegGRN				
35									BegGRN				
36									BegGRN				
37									BegGRN				
38									BegGRN				
39									BegGRN				
40									BegGRN				
41									BegGRN				
42									BegGRN				
43									BegGRN				
44									BegGRN				
45									BegGRN				
46									BegGRN				
47									BegGRN				
48									BegGRN				

Channel Params[1.8.3]

C1 IO Mode	USER	BIU Map	SINGLE	Invert Rail Input	OFF

Veh Par 1-64 [5.1]

Det #	Call Ø	Swi Ø	Dlay	Ext	Que	No Act	Max Pres	Err Cnt	Fail Time
1	5		2				45	50	7
2	8						45	50	17
3	8						45	50	17
4	8						45	50	17
5	8		10				45	50	17
6	8			4			45	50	17
7	8			4			45	50	17
8	2			3			45	50	17
9	6			3			45	50	17
10	6		8				45	50	17
11							45	50	2
12							45	50	2
13							45	50	2
14							45	50	2
15							45	50	2
16							45	50	2
17							45	50	2
18							45	50	2
19							45	50	
20							45	50	
21							45	50	
22							45	50	
23							45	50	
24							45	50	
25							45	50	
26							45	50	
27							45	50	
28							45	50	
29							45	50	
30							45	50	
31							45	50	
32							45	50	

Veh Par 1-64 [5.1]

Det #	Call Ø	Swi Ø	Dlay	Ext	Que	No Act	Max Pres	Err Cnt	Fail Time
33							45	50	
34							45	50	
35							45	50	
36							45	50	
37							45	50	
38							45	50	
39							45	50	
40							45	50	
41							45	50	
42							45	50	
43							45	50	
44							45	50	
45							45	50	
46							45	50	
47							45	50	
48							45	50	
49							45	50	
50							45	50	
51							45	50	
52							45	50	
53							45	50	
54							45	50	
55							45	50	
56	2						45	50	17
57							45	50	
58							45	50	
59							45	50	
60							45	50	
61							45	50	
62							45	50	
63							45	50	
64							45	50	

Vehicle Options 1-64 [5.2]

Det #	Call	Ext	Que	Add Init	Red Lock	Yell Lock	occ	vol
1	On	On		On				
2	On	On		On				
3	On	On		On				
4	On	On		On				
5	On	On		On				
6		On		On				
7		On		On				
8	On	On		On	On	On		
9	On	On		On	On	On		
10	On	On		On				
11	On	On		On				
12	On	On		On				
13	On	On		On				
14	On	On		On				
15	On	On		On				
16	On	On		On				
17	On	On		On				
18	On	On		On				
19	On	On		On				
20	On	On		On				
21	On	On		On				
22	On	On		On				
23	On	On		On				
24	On	On		On				
25	On	On		On				
26	On	On		On				
27	On	On		On				
28	On	On		On				
29	On	On		On				
30	On	On		On				
31	On	On		On				
32	On	On		On				

Vehicle Options 1-64 [5.2]

Det #	Call	Ext	Que	Add Ini	Red Lock	Yell Lock	occ	vol
33	On	On		On				
34	On	On		On				
35	On	On		On				
36	On	On		On				
37	On	On		On				
38	On	On		On				
39	On	On		On				
40	On	On		On				
41	On	On		On				
42	On	On		On				
43	On	On		On				
44	On	On		On				
45	On	On		On				
46	On	On		On				
47	On	On		On				
48	On	On		On				
49	On	On		On				
50	On	On		On				
51	On	On		On				
52	On	On		On				
53	On	On		On				
54	On	On		On				
55	On	On		On				
56	On	On		On				
57	On	On		On				
58	On	On		On				
59	On	On		On				
60	On	On		On				
61	On	On		On				
62	On	On		On				
63	On	On		On				
64	On	On		On				

Parameters+ 1-64 [5.3]

Det #	oc G	oc Y	oc R	Dlay 1	Dlay 2	Type	Src
1						NORM	
2						NORM	
3						NORM	
4						NORM	
5						NORM	
6						NORM	
7						NORM	
8						NORM	
9						NORM	
10						NORM	
11						NORM	
12						NORM	
13						NORM	
14						NORM	
15						NORM	
16						NORM	
17						NORM	
18						NORM	
19						NORM	
20						NORM	
21						NORM	
22						NORM	
23						NORM	
24						NORM	
25						NORM	
26						NORM	
27						NORM	
28						NORM	
29						NORM	
30						NORM	
31						NORM	
32						NORM	

Parameters+ 1-64 [5.3]

Det #	occ Grn	occ Yell	occ Red	Dlay 1	Dlay 2	Type	Src
33						NORM	
34						NORM	
35						NORM	
36						NORM	
37						NORM	
38						NORM	
39						NORM	
40						NORM	
41						NORM	
42						NORM	
43						NORM	
44						NORM	
45						NORM	
46						NORM	
47						NORM	
48						NORM	
49						NORM	
50						NORM	
51						NORM	
52						NORM	
53						NORM	
54						NORM	

Parameters+ 1-64 [5.3]

Det #	occ Grn	occ Yell	occ Red	Dlay 1	Dlay 2	Type	Src
55						NORM	
56						NORM	1
57						NORM	
58						NORM	
59						NORM	
60						NORM	
61						NORM	
62						NORM	
63						NORM	
64						NORM	

Ped Det Parms [5.4]

Det #	Call Ø	No Act	Max Pres	Err Cnt
1	2		15	
2	6		15	
3			15	
4			15	
5			15	
6			15	
7			15	
8			15	

Unit Paramters [1.2.1]

TS2 Det Faults	ON

Vol/Occ Report Parm [1.5.8]

Vol/Occ Period Minutes	15
Vol/Occ Period Minutes	0

Preemption Times [3.1], Options+ [3.6]

Pre #	Enable	Type	Output	Delay	MinDura
1	ON	RAIL	DWELL		
2	ON	RAIL	DWELL		
3	ON	EMERG	DWELL		
4	ON	EMERG	DWELL		
5	ON	EMERG	DWELL		
6	ON	EMERG	DWELL		

Pre #	MaxPres	MinGrn	MinWlk	PedClr	Co+Pre
1					ON
2					ON
3					ON
4					ON
5					ON
6					ON

Pre #	Track Grn	Min Dwell	Ext Dwell	PedClr+	Yel
1		2			
2		2			
3		2			
4		2			
5		2			
6		2			

Pre #	Red	Pattern	Skip
1			OFF
2			OFF
3			OFF
4			OFF
5			OFF
6			OFF

Low Priority Preempts

Pre #	Type	Min	Max		
7	OFF				
8	OFF				
9	OFF				
10	OFF				

Unit Parameters [1.2.1]

Stop Timer Over Preempt	OFF
Preempt or Ext Output	PRE
Max Seek Track Time	
Max Seek Dwell Time	

Channel Parameters [1.8.3]

D Conn Mappings	NONE
Pre Invert Rail Input	OFF

Track Clear Phases [3.2], Track Clear Overlaps+ [3.5]

Pre #	Track Phases					Track Overlaps										
1																
2																
3																
4																
5																
6																

Dwell Phases [3.2] and Overlaps+ [3.5]

Pre #														
1	Phases													
	Overlaps													
	Peds													
2	Phases													
	Overlaps													
	Peds													
3	Phases													
	Overlaps													
	Peds													
4	Phases													
	Overlaps													
	Peds													
5	Phases													
	Overlaps													
	Peds													
6	Phases													
	Overlaps													
	Peds													

Exit Phases [3.2]

Pre #	Exit Phase				
1					
2					
3					
4					
5					
6					

Preemption Options+ [3.6]

Pre #	Lock	Override Auto Flsh		Override Higher		Flsh Dwel	Link
1	ON	ON		ON		OFF	
2	ON	ON		ON		OFF	
3	ON	ON		ON		OFF	
4	ON	ON		ON		OFF	
5	ON	ON		ON		OFF	
6	ON	ON		ON		OFF	

Annual Schedule [4.3] Month of Year | Day of Week | Date | DayLink

	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Plan	To
1													On	On	On	On	On	On	On																																		1	
2																																																			1	
3																																																			1	
4																																																			1	
5																																																			1	
6																																																			1	
7																																																			1	
8																																																			1	
9																																																			1	
10																																																			1	
11																																																			1	
12																																																			1	
13																																																			1	
14																																																			1	
15																																																			1	
16																																																			1	
17																																																			1	
18																																																			1	
19																																																			1	
20																																																			1	
21																																																			1	
22																																																			1	
23																																																			1	
24																																																			1	

Day Plans [4.4]

Day Plan 1

	Hour	Min	Act		Hour	Min	Act
1	0	0	2	9	0	0	0
2	6	0	1	10	0	0	0
3	20	0	2	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 2

	Hour	Min	Act		Hour	Min	Act
1	0	0	1	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 3

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 4

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 5

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 6

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 7

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 8

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 9

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 10

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 11

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 12

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 13

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 14

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 15

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Action Table [4.5]

Act#	Pat#	A1	A2	A3	S1	S2	S3	S4	S5	S6	S7	S8
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8											
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
48												
98												
99												
100	255											

Coord Alternate Tables - Pat+ [2.6]

Pat#	ØOpt	ØTime	DetG	Call Inh	CIC	CNA1	Overlap Off 1	2	3	4	5	6	7	8	Dia	Max2
1															DFT	
2															DFT	
3															DFT	
4															DFT	
5															DFT	
6															DFT	
7															DFT	
8															DFT	
9															DFT	
10															DFT	
11															DFT	
12															DFT	
13															DFT	
14															DFT	
15															DFT	
16															DFT	
17															DFT	
18															DFT	
19															DFT	
20															DFT	
21															DFT	
22															DFT	
23															DFT	
24															DFT	
25															DFT	
26															DFT	
27															DFT	
28															DFT	
29															DFT	
30															DFT	
31															DFT	
32															DFT	
33															DFT	
34															DFT	
35															DFT	
36															DFT	
37															DFT	
38															DFT	
39															DFT	
40															DFT	
41															DFT	
42															DFT	
43															DFT	
44															DFT	
45															DFT	
46															DFT	
47															DFT	
48															DFT	

C1-USER IO Map [1.8.9.1 In]

I1-1	1	Veh Call 1
I1-2	2	Veh Call 2
I1-3	3	Veh Call 3
I1-4	4	Veh Call 4
I1-5	5	Veh Call 5
I1-6	6	Veh Call 6
I1-7	7	Veh Call 7
I1-8	8	Veh Call 8
I2-1	9	Veh Call 9
I2-2	10	Veh Call 10
I2-3	129	Ped Call 1
I2-4	130	Ped Call 2
I2-5	189	Unused
I2-6	189	Unused
I2-7	189	Unused
I2-8	189	Unused
I3-1	189	Unused
I3-2	189	Unused
I3-3	189	Unused
I3-4	189	Unused
I3-5	189	Unused
I3-6	189	Unused
I3-7	189	Unused
I3-8	189	Unused
I4-1	C11S Connector	
I4-2		
I4-3		
I4-4		
I4-5	189	Unused
I4-6	189	Unused
I4-7	229	33xCMUStop
I4-8	228	33xFlashSns
I5-1	189	Unused
I5-2	189	Unused
I5-3	189	Unused
I5-4	189	Unused
I5-5	189	Unused
I5-6	189	Unused
I5-7	189	Unused
I5-8	189	Unused
I6-1	189	Unused
I6-2	189	Unused
I6-3	189	Unused
I6-4	189	Unused
I6-5	189	Unused
I6-6	189	Unused
I6-7	189	Unused
I6-8	189	Unused

C1-USER IO Map [1.8.9.2 Out]

O1-1	1	Ch1 Red
O1-2	49	Ch1 Green
O1-3	2	Ch2 Red
O1-4	26	Ch2 Yellow
O1-5	50	Ch2 Green
O1-6	3	Ch3 Red
O1-7	27	Ch3 Yellow
O1-8	51	Ch3 Green
O2-1	4	Ch4 Red
O2-2	52	Ch4 Green
O2-3	5	Ch5 Red
O2-4	29	Ch5 Yellow
O2-5	53	Ch5 Green
O2-6	6	Ch6 Red
O2-7	30	Ch6 Yellow
O2-8	54	Ch6 Green
O3-1	7	Ch7 Red
O3-2	55	Ch7 Green
O3-3	8	Ch8 Red
O3-4	32	Ch8 Yellow
O3-5	56	Ch8 Green
O3-6	9	Ch9 Red
O3-7	33	Ch9 Yellow
O3-8	57	Ch9 Green
O4-1	10	Ch10 Red
O4-2	58	Ch10 Green
O4-3	11	Ch11 Red
O4-4	35	Ch11 Yellow
O4-5	59	Ch11 Green
O4-6	12	Ch12 Red
O4-7	36	Ch12 Yellow
O4-8	60	Ch12 Green
O5-1	28	Ch4 Yellow
O5-2	34	Ch10 Yellow
O5-3	25	Ch1 Yellow
O5-4	31	Ch7 Yellow
O5-5	115	Not Used
O5-6	115	Not Used
O5-7	115	Not Used
O5-8	114	Watchdog
O6-1	115	Not Used
O6-2	115	Not Used
O6-3	13	Ch13 Red
O6-4	37	Ch13 Yellow
O6-5	61	Ch13 Green
O6-6	14	Ch14 Red
O6-7	38	Ch14 Yellow
O6-8	62	Ch14 Green

C1-USER IO Map [1.8.9.2 Out]

O7-1	115	Not Used
O7-2	115	Not Used
O7-3	115	Not Used
O7-4	115	Not Used
O7-5	115	Not Used
O7-6	115	Not Used
O7-7	115	Not Used
O7-8	115	Not Used

C11S-USER IO Map [1.8.9.1 In]

I4-1	189	Unused
I4-2	189	Unused
I4-3	189	Unused
I4-4	189	Unused
I7-1	189	Unused
I7-2	189	Unused
I7-3	189	Unused
I7-4	189	Unused
I7-5	189	Unused
I7-6	189	Unused
I7-7	189	Unused
I7-8	189	Unused
I8-1	189	Unused
I8-2	189	Unused
I8-3	189	Unused
I8-4	189	Unused
I8-5	189	Unused
I8-6	189	Unused
I8-7	189	Unused
I8-8	189	Unused

C11S-USER IO Map [1.8.9.2 Out]

O8-1	115	Not Used
O8-2	115	Not Used
O8-3	115	Not Used
O8-4	115	Not Used
O8-5	115	Not Used
O8-6	115	Not Used
O8-7	115	Not Used
O8-8	115	Not Used

IO Logic [1.8.7]

Result			Fcn	Oper	Fcn	Oper	Fcn	Timer	
I	0	=	I	---- 0	I	---- 0	I	---- 0	DLY
I	0	=	I	---- 0	I	---- 0	I	---- 0	DLY
I	0	=	I	---- 0	I	---- 0	I	---- 0	DLY
I	0	=	I	---- 0	I	---- 0	I	---- 0	DLY
I	0	=	I	---- 0	I	---- 0	I	---- 0	DLY
I	0	=	I	---- 0	I	---- 0	I	---- 0	DLY
I	0	=	I	---- 0	I	---- 0	I	---- 0	DLY
I	0	=	I	---- 0	I	---- 0	I	---- 0	DLY
I	0	=	I	---- 0	I	---- 0	I	---- 0	DLY
I	0	=	I	---- 0	I	---- 0	I	---- 0	DLY

Security Access Levels [8.2]

1	SWLOAD
2	SECURE
3	NONE
4	NONE
5	NONE
6	NONE
7	NONE
8	NONE
9	NONE
10	NONE
11	NONE
12	NONE
13	NONE
14	NONE
15	NONE
16	NONE
17	NONE
18	NONE
19	NONE
20	NONE
21	NONE

22	NONE
23	NONE
24	NONE
25	NONE
26	NONE
27	NONE
28	NONE
29	NONE
30	NONE
31	NONE
32	NONE
33	NONE
34	NONE
35	NONE
36	NONE
37	NONE
38	NONE
39	NONE
40	NONE
41	NONE
42	NONE

43	NONE
44	NONE
45	NONE
46	NONE
47	NONE
48	NONE
49	NONE
50	NONE
51	NONE
52	NONE
53	NONE
54	NONE
55	NONE
56	NONE
57	NONE
58	NONE
59	NONE
60	NONE
61	NONE
62	NONE
63	NONE
64	NONE

Com Parameters [6.1]

Station ID	4097
Group ID	
Master ID	0
Backup Time	0

SysUp Modem [6.1]

Enable Modem	OFF
Idle Time	0
Dial Time	0
Tel:	#N/A
Alt:	#N/A

2070 Port Parms [6.2]

Port	Baud Rate	FCM
SP1	9600	MODE 6
SP2	9600	MODE 6
SP3	19200	MODE 6
SP4	38400	MODE 6
SP5	1200	AUTO
SP6	1200	AUTO
SP7	1200	AUTO
SP8	1200	AUTO

2070 IP 1 Addressing [6.5]

	Addressing			
Addr	192	168	0	100
Mask	255	255	255	0
Brdcst	0	0	0	0
GtWay	192	168	0	1
Port	5001			

2070 IP 2 Addressing [6.5]

	Addressing			
Addr	0	0	0	0
Mask	0	0	0	0
Brdcst	0	0	0	0
GtWay	0	0	0	0
Port	0			

2070 Port Binding Ports [6.6]

	Port	Echo	Mode
ASYNC1	SP1	OFF	0
ASYNC2	SP2	OFF	0
ASYNC3	SP3	OFF	0
ASYNC4	SP4	OFF	0
SYNC1	SP5S	SYNC3	OFF
SYNC2	OFF	SYNC4	OFF

2070 Port Binding Functions [6.6]

Function	Channel	Function	Channel
TS2/CVM	NONE	SYSUp	ASYNC2
CMU/MMU	NONE	SYSDown	ASYNC1
Opticom	NONE	Shell	NONE
Loop Det.	NONE		
GPS	NONE		

#	Event / Alarm	Ev	Alr
1	Power Up Alarm.	On	On
2	Stop Timing	On	On
3	TS1 Cabinet Door	On	On
4	Coordination Failure	On	On
5	External Alarm # 1	On	On
6	External Alarm # 2	On	On
7	External Alarm # 3		
8	External Alarm # 4		
9	Closed Loop Disabled	On	On
10	External Alarm # 5		
11	External Alarm # 6		
12	Manual Control Enable	On	On
13	Coord Free Input		
14	Local Flash Input	On	On
15	MMU Flash		
16	CMU Flash		
17	Cycle Fault	On	On
18	Cycle Failure	On	On
19	Coordination Fault	On	On
20	Controller Fault	On	On
21	Detector SDLC Failure		
22	MMU SDLC Failure		
23	Critical SDLC Failure		
24	Reserved		
25	EEPROM CRC Fault	On	On
26	Detector Diagnostic Failur	On	On
27	BIU Detector Failure	On	On
28	Queue detector alarm	On	On
29	Ped Detector Fault	On	On
30	Coord Diagnostic Fault		
41	TempAlert Probe Ch. A		
42	TempAlert Probe Ch. B		
47	Coord Active		
48	Preempt Active	On	On
49	Preempt 1 Input	On	On
50	Preempt 2 Input	On	On
51	Preempt 3 Input	On	On
52	Preempt 4 Input	On	On
53	Preempt 5 Input	On	On
54	Preempt 6 Input	On	On
55	Preempt 7 Input	On	On
56	Preempt 8 Input	On	On
57	Preempt 9 Input	On	On
58	Preempt 10 Input	On	On
61	In Transition	On	On
81	FIO Status Alarm		

Call Phases[1.1.5]

Ø	Phases Called By Ø
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Redirect Phases[1.1.5]

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

Inhibit Phases[1.1.5]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

Alt Call & Redirect # 1 [1.1.6.3]

Col	Ø	Phases Called By Ø
1		
2		
3		
4		
5		
6		
7		
8		

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								

Alt Inhibit Phases # 1 [1.1.6.3]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																

Alt Call & Redirect # 2 [1.1.6.3]

Col	Ø	Phases Called By Ø
1		
2		
3		
4		
5		
6		
7		
8		

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								

Alt Inhibit Phases # 2 [1.1.6.3]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																

Coord, CIC Plans [2.3]

CIC	CoØ	Grow	1	2	3	4	5	6	7	8
1	OFF									
2	OFF									
3	OFF									
4	OFF									

Auto Flash Phase/Olap Settings [1.4.2]

Yel Ø								
Yel (olaps)								

Unit Parameters [1.2.1]

Allow Skip Yellow	OFF	Max Cycle Time	
TOD Dim Enable	OFF	Cycle Fault Action	ALARM
Tone Disable	OFF		
Diamond Mode	4Ph		
Backup Time (s)	900		
Disable Init Ped	OFF		
Cycle Fault Action	ALARM		
Enable Run Timer	ON		

TE 4D (8/82) STATE OF NEW YORK-DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS

STUDY: 625-0005 CONTRACT: Crew FILE: 46.14-415
SIGNAL #: 4109+4110 COUNTY: Steuben PAGE: 1 OF 13
[] CITY, [X] VILLAGE, [] TOWN OF Riverside
DEPARTMENT ORDER FILED 5/24/95 (DATE) AS SECTION 2046.14
SUBDIVISION (c) (d)
PRIOR SPECIFICATIONS HEREBY SUPERCEDED: [] NONE [X] 6/22/95

PURPOSE: Miovision Video Detection

THESE SPECIFICATIONS WILL BE EFFECTIVE UPON THE [] INSTALLATION, [X] MODIFICATION OF THE NECESSARY TRAFFIC CONTROL DEVICE(S) REQUIRED BY CONFORMING TO THE STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

I. THIS SIGNAL SHALL:

A. OPERATE IN ACCORDANCE WITH THE TABLE OF OPERATIONS AND/OR CHANGE INTERVALS AS SHOWN ON PAGE(S) 5 AS A:
- [] PRETIMED SIGNAL
- [] SEMI-TRAFFIC ACTUATED SIGNAL
- [X] FULL-TRAFFIC ACTUATED SIGNAL
- [] PEDESTRIAN ACTUATED SIGNAL
- [] OTHER

B. [X] DISPLAY VEHICULAR INDICATIONS
[X] DISPLAY PEDESTRIAN INDICATIONS
[X] BE EQUIPPED WITH VEHICLE DETECTORS
[] BE EQUIPPED WITH PEDESTRIAN PUSHBUTTONS
AS SHOWN IN THE [X] SCHEMATIC, [] SCALED DRAWING ON PAGE 2

C. BE EQUIPPED WITH [] PRE-EMPTION, [] INTERCONNECTION AND/OR COORDINATION WHICH ARE DESCRIBED AS FOLLOWS:

6/23/25 Brian Nisbet Signal EIC
(DATE) (SIGNATURE) (TITLE)

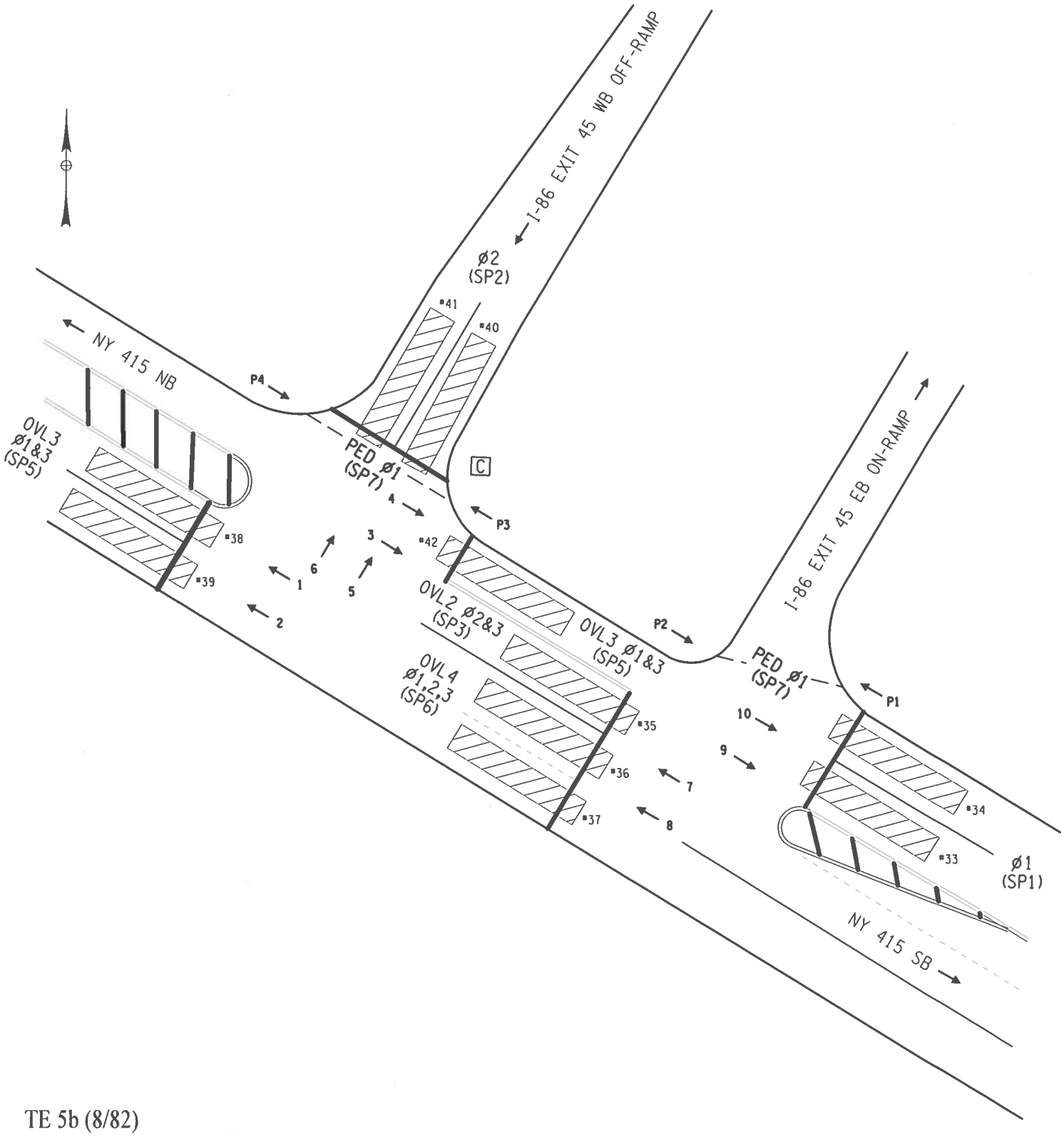
cc: [] MAIN OFFICE
[] REGION 6 TRAFFIC ENGINEER
[]
[]

INSTALLATION DATE: 6/22/25
MODIFICATION DATE:

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION
TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

Study: 625-0005
Contract: Crew
P.I.N.: Hornell
File: 46.14-415

4109/4110	STEUBEN	JUNE 2025	PAGE 2 OF 13 PAGES
SIGNAL NO(S).	COUNTY	DATE	



TE 5b (8/82)

SIGNAL 4109 & 4110

TABLE OF SWITCH PACKS							
SWITCH PACK	FUNCTION	FACE №	FLASH PLUG COLOR	INDICATION	TERMINAL WIRING BOARD		
					TERMINAL	WIRE COLOR CODE	
SP 1	Ø1	9/10	YELLOW	R	SP1R	14-15C-2-R	
				Y	SP1Y	14-15C-2-O	
				G	SP1G	14-15C-2-G	
				GRND. WIRE	GRND. BUS	14-15C-2-W	
SP 2	Ø2	5/6	RED	R	SP2R	14-15C-1-R/B	
				Y	SP2Y	14-15C-1-O/B	
				G	SP2G	14-15C-1-G/B	
				GRND. WIRE	GRND. BUS	14-15C-1-W/B	
SP 3	OVL 2 Ø2 & 3	7	WHITE		SP3R		
				←Y	SP3Y	14-15C-2-BL/B	
				←G	SP3G	14-15C-2-G/W	
				GRND. WIRE	GRND. BUS	14-15C-2-BL/W	
SP 4					SP4R		
					SP4Y		
					SP4G		
					GRND. BUS		
SP 5	OVL 3 Ø1 & 3	1 3 2 4	YELLOW	R	SP5R	14-15C-1-R/W	14-15C-1-R
				Y	SP5Y	14-15C-1-BL/W	14-15C-1-O
				G	SP5G	14-15C-1-G/W	14-15C-1-G
				GRND. WIRE	GRND. BUS	14-15C-1-B/W	14-15C-1-W
SP 6	OVL 4 Ø1,2,3	7/8	YELLOW	R	SP6R	14-15C-2-R/B	
				Y	SP6Y	14-15C-2-O/B	
				G	SP6G	14-15C-2-G/B	
				GRND. WIRE	GRND. BUS	14-15C-2-W/B	
SP 7	PED Ø1	P1/P2 P3/P4	WHITE	HAND	SP7R	14-5C-1-R	14-5C-2-R
					SP7Y		
				MAN	SP7G	14-5C-1-G	14-5C-2-G
				GRND. WIRE	GRND. BUS	14-5C-1-W	14-5C-2-W
SP 8					SP8R		
					SP8Y		
					SP8G		
					GRND. BUS		
SP 9					SP9R		
					SP9Y		
					SP9G		
					GRND. BUS		
SP 10					SP10R		
					SP10Y		
					SP10G		
					GRND. BUS		
SP 11					SP11R		
					SP11Y		
					SP11G		
					GRND. BUS		
SP 12					SP12R		
					SP12Y		
					SP12G		
					GRND. BUS		
SP 13					SP13R		
					SP13Y		
					SP13G		
					GRND. BUS		
SP 14					SP14R		
					SP14Y		
					SP14G		
					GRND. BUS		
SP 15					SP15R		
					SP15Y		
					SP15G		
					GRND. BUS		
SP 16					SP16R		
					SP16Y		
					SP16G		
					GRND. BUS		

COLORS: R=RED, O=ORANGE, G=GREEN, BL=BLUE, W=WHITE, B=BLACK

6/20/2025

SIGNAL 4109 & 4110

TABLE OF VIRTUAL DETECTION ZONES				
Input	Phase	Type	BUI #	Description
33	Ø1	ZONE	SDLC BUI 3	PRESENCE - NY 415 NB THRU
34	Ø1	ZONE		PRESENCE - NY 415 NB RIGHT TURN
35	Ø3	ZONE		PRESENSE - NY 415 SB LEFT TURN
36	Ø1	ZONE		PRESENSE - NY 415 SB THRU
37	Ø1	ZONE		PRESENCE - NY 415 SB RIGHT LANE TURN AHEAD
38	Ø1	ZONE		PRESENCE - NY 415 SB THRU - LEFT LANE
39	Ø1	ZONE		PRESENCE - NY 415 SB THRU - RIGHT LANE
40	Ø2	ZONE		PRESENCE - WB OFF RAMP LEFT TURN LANE
41	Ø2	ZONE		PRESENCE - WB OFF RAMP RIGHT TURN LANE
42	Ø1	ZONE		PRESENCE - NY 415 NB THRU
43				
44				
45				
46				
47				
48				
49			SDLC BUI 4	
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				
61				
62				
63				
64				

4109/4110	STEUBEN	JUNE 2025	PAGE 5 OF 13 PAGES
SIGNAL NO(S).	COUNTY	DATE	

TABLE OF OPERATIONS

FACE / Ø	1	2	3	4	5	6	7	8	9	10	P1/P2	P3/P4
STARTUP	G	G	G	G	R	R	G	G	G	G	●	●
1	G	G	G	G	R	R	G	G	G	G	●	●
2	R	R	R	R	G	G	←G,G	G	R	R		
3	G	G	G	G	G	G	←G,G	G	R	R		
FLASH	F.Y.	F.Y.	F.Y	F.Y.	F.R.	F.R.	F.Y.	F.Y.	F.Y.	F.Y.	OUT	OUT
SIGNAL FACE DISPLAYS												
12 INCH DIAMETER LENSES												
●	UPON THE ONSET OF THE ASSOCIATED PHASE, A STEADY "WALKING PERSON" IS DISPLAYED AND CONTINUES TO BE DISPLAYED UNTIL THE FOLLOWING CONDITIONS ARE MET: COMPETITION OF THE WALK INTERVAL AND THE PRESENCE OF A SERVICEABLE CONFLICTING CALL. WHEN BOTH CONDITIONS ARE MET THE DISPLAY OF THE STEADY "WALKING PERSON" IS IMMEDIATELY FOLLOWED BY THE DISPLAY OF BOTH A FLASHING "UPRAISED HAND" AND A COUNTDOWN OF SECONDS REMAINING IN THE PEDESTRIAN CHANGE INTERVAL.											

TABLE OF CLEARANCES

CLEARANCE	FROM / TO	R	G	←G, R	←G, G
1ST	R	R	Y	←Y, R	←Y, Y
2ND		R	R	R	R
1ST	G	R	G	←Y, R	←Y, G
2ND		R	G	R	G
1ST	←G, R	R	Y	←G, R	←G, Y
2ND		R	R	←G, R	←G, R
1ST	←G, G	R	G	←G, R	←G, G
2ND		R	G	←G, R	←G, G

R = CIRCULAR RED ←R = LEFT RED ARROW
Y = CIRCULAR YELLOW ←Y = LEFT YELLOW ARROW
G = CIRCULAR GREEN ←G = LEFT GREEN ARROW

4109

Phase Times [1.1.1]

	1	2	3	4	5	6	7	8
Min Green	15	6	6					
Gap, Ext	3	2	2					
Max 1	35	30	15					
Max 2								
Yel Clearance	3.2	3.2	3.2					
Red Clearance	1.8	2	2					
Walk	7							
Ped Clearance	12							
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time To Reduce								
Reduce By								
Min Gap								
DyMaxLim								
Max Step								
Options [1.1.2]	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Enable	ON	ON	ON					
Min Recall								
Max Recall								
Ped Recall	ON							
Soft Recall								
Lock Calls								
Auto Flash Entry		ON						
Auto Flash Exit	ON							
Dual Entry		ON		ON		ON		ON
Enable Simul Gap	ON	ON	ON	ON	ON	ON	ON	ON
Gaurantee Passage								
Rest In Walk	ON							
Conditon Service								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc	ON	ON	ON	ON	ON	ON	ON	ON
Options+ [1.1.3]	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Call Phase								
Conflicting Phase								
Omit Yellow								
Ped Delay								
Gm/Ped Delay								

4109 SR 415 @ I-86 EXIT 45 RAMPS

Coordination Patterns [2.4] and Coordination Split Tables [2.7.1]

Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq	Pat#	Cyc	Off	Split	Seq
1	0	0	1	1	13	0	0	13	1	25	0	0	0	1	37	0	0	0	1
2	0	0	2	1	14	0	0	14	1	26	0	0	0	1	38	0	0	0	1
3	0	0	3	1	15	0	0	15	1	27	0	0	0	1	39	0	0	0	1
4	0	0	4	1	16	0	0	16	1	28	0	0	0	1	40	0	0	0	1
5	0	0	5	1	17	0	0	17	1	29	0	0	0	1	41	0	0	0	1
6	0	0	6	1	18	0	0	18	1	30	0	0	0	1	42	0	0	0	1
7	0	0	7	1	19	0	0	19	1	31	0	0	0	1	43	0	0	0	1
8	0	0	8	1	20	0	0	20	1	32	0	0	0	1	44	0	0	0	1
9	0	0	9	1	21	0	0	21	1	33	0	0	0	1	45	0	0	0	1
10	0	0	10	1	22	0	0	22	1	34	0	0	0	1	46	0	0	0	1
11	0	0	11	1	23	0	0	23	1	35	0	0	0	1	47	0	0	0	1
12	0	0	12	1	24	0	0	24	1	36	0	0	0	1	48	0	0	0	1

Split		1	2	3	4	5	6	7	8	Split		1	2	3	4	5	6	7	8
1	Coor	0	0	0	0	0	0	0	0	13	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
2	Coor	0	0	0	0	0	0	0	0	14	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
3	Coor	0	0	0	0	0	0	0	0	15	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
4	Coor	0	0	0	0	0	0	0	0	16	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
5	Coor	0	0	0	0	0	0	0	0	17	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
6	Coor	0	0	0	0	0	0	0	0	18	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
7	Coor	0	0	0	0	0	0	0	0	19	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
8	Coor	0	0	0	0	0	0	0	0	20	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
9	Coor	0	0	0	0	0	0	0	0	21	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
10	Coor	0	0	0	0	0	0	0	0	22	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
11	Coor	0	0	0	0	0	0	0	0	23	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON
12	Coor	0	0	0	0	0	0	0	0	24	Coor	0	0	0	0	0	0	0	0
		NON	NON	NON	NON	NON	NON	NON	NON			NON	NON	NON	NON	NON	NON	NON	NON

Page#	
1	8 Phase Times/Options; Patterns/Splits; Ring Startup; Coord/Flash Mode; Unit Param
1A&1B	16 Phase Times/Options; Patterns/Splits; Ring Startup; Coord/Flash Mode; Unit Param
2	Overlaps; Channel Settings; Coord Alt Table+ (values not associated with time-of-day)
3	Detection; Sample Time and Unit Parameters related to detection
4	Preemption and Alternate Phase Time and Phase Options
5	Annual Schedule
6	Day Plans; Action Tables; Coord Alt Table+ (values varied by time-of-day)
7	Communications; Secutiry; I/O Setup
8	Misc - Events/Alarms; Call/Inhibit/Redirect; P/OLAP Auto Flash; CIC; Misc Unit Param

Ring/Startup [1.1.4]

Phs	Ring	Start	Enable
1	1	Green	ON
2	1	Red	ON
3	1	Red	ON
4	1	Red	OFF
5	2	Red	OFF
6	2	Red	OFF
7	2	Red	OFF
8	2	Red	OFF

Coord Modes [2.1]

Test OpMode	0
Correction	SHRT/LNG
Maximum	MAX INH
Force-Off	Float
Closed Loop	ON
Stop-in-Walk	OFF
Auto Reset	ON
Expand Splt	
Ped Recycle	NO_RECYCLE
Before	TIMED
After	TIMED

Auto Flash [1.4.1]

Auto Flash	Channel
Flash Yel	45
Flash Red	20

Unit Params [1.2.1]

Phase Mode	STD8
IO Mode	User
Loc Fish Start	Red
Start Flash(s)	0
Start AllRed(s)	6
Yellow < 3"	OFF
Display Time	20
Red Revert	3
MCE Timeout	0
Feature Profile	
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	OFF
Auto Ped Clear	OFF
SDLC Retry	0

Overlap 1-16 Program Parms & Parm+ [1.5.2.1] [1.5.2.2]

Overlap Conflict Lock	OFF	Overlap Lock Inhibit	OFF	Parent Ph Clearance	ON	Extra Included Ph	OFF

1	Included Ø									Type	NORMAL	9	Included Ø											Type	NORMAL
	Modifier Ø									Grn			Modifier Ø											Grn	
	Conflict Ø									Yel	3.5		Conflict Ø											Yel	3.5
A	Conflict Olap									Red	1.5	I	Conflict Olap											Red	1.5
	Conflict Ped									LG			Conflict Ped											LG	
2	Included Ø	2	3							Type	NORMAL	10	Included Ø											Type	NORMAL
	Modifier Ø									Grn			Modifier Ø											Grn	
	Conflict Ø									Yel	3.5		Conflict Ø											Yel	3.5
B	Conflict Olap									Red	1.5	J	Conflict Olap											Red	1.5
	Conflict Ped									LG			Conflict Ped											LG	
3	Included Ø	1	3							Type	NORMAL	11	Included Ø											Type	NORMAL
	Modifier Ø									Grn			Modifier Ø											Grn	
	Conflict Ø									Yel	3.5		Conflict Ø											Yel	3.5
C	Conflict Olap									Red	1.5	K	Conflict Olap											Red	1.5
	Conflict Ped									LG			Conflict Ped											LG	
4	Included Ø	1	2	3						Type	NORMAL	12	Included Ø											Type	NORMAL
	Modifier Ø									Grn			Modifier Ø											Grn	
	Conflict Ø									Yel	3.5		Conflict Ø											Yel	3.5
D	Conflict Olap									Red	1.5	L	Conflict Olap											Red	1.5
	Conflict Ped									LG			Conflict Ped											LG	
5	Included Ø									Type	NORMAL	13	Included Ø											Type	NORMAL
	Modifier Ø									Grn			Modifier Ø											Grn	
	Conflict Ø									Yel	3.5		Conflict Ø											Yel	3.5
E	Conflict Olap									Red	1.5	M	Conflict Olap											Red	1.5
	Conflict Ped									LG			Conflict Ped											LG	
6	Included Ø									Type	NORMAL	14	Included Ø											Type	NORMAL
	Modifier Ø									Grn			Modifier Ø											Grn	
	Conflict Ø									Yel	3.5		Conflict Ø											Yel	3.5
F	Conflict Olap									Red	1.5	N	Conflict Olap											Red	1.5
	Conflict Ped									LG			Conflict Ped											LG	
7	Included Ø									Type	NORMAL	15	Included Ø											Type	NORMAL
	Modifier Ø									Grn			Modifier Ø											Grn	
	Conflict Ø									Yel	3.5		Conflict Ø											Yel	3.5
G	Conflict Olap									Red	1.5	O	Conflict Olap											Red	1.5
	Conflict Ped									LG			Conflict Ped											LG	
8	Included Ø									Type	NORMAL	16	Included Ø											Type	NORMAL
	Modifier Ø									Grn			Modifier Ø											Grn	
	Conflict Ø									Yel	3.5		Conflict Ø											Yel	3.5
H	Conflict Olap									Red	1.5	P	Conflict Olap											Red	1.5
	Conflict Ped									LG			Conflict Ped											LG	

Channel Settings [1.8.1]

.....Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Phase / Olap #	1	2	2		3	4	1																	
Channel Type	VEH	VEH	OLP	VEH	OLP	OLP	PED	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
Channel Flash	YEL	Red	DRK	Red	YEL	YEL	DRK	Red	Red	Red	Red	Red	Red	Red	Red	Red	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Alt Hz																								

Channel+ Settings [1.8.4]

.....Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Flash Red+																								
Flash Yellow+																								
Flash Green+																								
Flash Inh Red+																								
Olap Ovrd																								

Coord Transition, CoorPhs [2.5]

Pat#	Short	Long	Dwell	No Shortway Ø				E-Yld	Offset	RetHld	Float	Min Veh Perm	Min Ped Perm
1	12	22							EndGRN	ON			
2	12	22							EndGRN	ON			
3	12	22							EndGRN				
4	12	22							EndGRN				
5	12	22							EndGRN				
6	12	22							EndGRN				
7	12	22							EndGRN				
8	12	22							EndGRN				
9	12	22							EndGRN				
10	12	22							EndGRN				
11	12	22							EndGRN				
12	12	22							EndGRN				
13	12	22							EndGRN				
14	12	22							EndGRN				
15	12	22							EndGRN				
16	12	22							EndGRN				
17	12	22							EndGRN				
18	12	22							EndGRN				
19	12	22							EndGRN				
20	12	22							EndGRN				
21	12	22							EndGRN				
22	12	22							EndGRN				
23	12	22							EndGRN				
24	12	22							EndGRN				
25									BegGRN				
26									BegGRN				
27									BegGRN				
28									BegGRN				
29									BegGRN				
30									BegGRN				
31									BegGRN				
32									BegGRN				
33									BegGRN				
34									BegGRN				
35									BegGRN				
36									BegGRN				
37									BegGRN				
38									BegGRN				
39									BegGRN				
40									BegGRN				
41									BegGRN				
42									BegGRN				
43									BegGRN				
44									BegGRN				
45									BegGRN				
46									BegGRN				
47									BegGRN				
48									BegGRN				

Channel Params[1.8.3]

C1 IO Mode	User	Single BIU Map	DEFAULT	Invert Rail Input	OFF

Veh Par 1-64 [5.1]

Det #	Call Ø	Swi Ø	Dlay	Ext	Que	No Act	Max Pres	Err Cnt	Fail Time
1							45	50	2
2							45	50	2
3							45	50	2
4							45	50	2
5							45	50	2
6							45	50	2
7							45	50	2
8							45	50	2
9							45	50	2
10							45	50	2
11							45	50	2
12							45	50	2
13							45	50	2
14							45	50	2
15							45	50	2
16							45	50	2
17							45	50	2
18							45	50	2
19							45	50	
20							45	50	
21							45	50	
22							45	50	
23							45	50	
24							45	50	
25							45	50	
26							45	50	
27							45	50	
28							45	50	
29							45	50	
30							45	50	
31							45	50	
32							45	50	

Veh Par 1-64 [5.1]

Det #	Call Ø	Swi Ø	Dlay	Ext	Que	No Act	Max Pres	Err Cnt	Fail Time
33	1						45	50	20
34	1						45	50	20
35	3		25				45	50	10
36	1						45	50	20
37	1						45	50	20
38	1						45	50	20
39	1						45	50	20
40	2						45	50	15
41	2						45	50	15
42	1						45	50	20
43							45	50	
44							45	50	
45							45	50	
46							45	50	
47							45	50	
48							45	50	
49							45	50	
50							45	50	
51							45	50	
52							45	50	
53							45	50	
54							45	50	
55							45	50	
56							45	50	
57							45	50	
58							45	50	
59							45	50	
60							45	50	
61							45	50	
62							45	50	
63							45	50	
64							45	50	

Vehicle Options 1-64 [5.2]

Det #	Call	Ext	Que	Add Init	Red Lock	Yell Lock	occ	vol
1	ON	ON		ON				
2	ON	ON		ON				
3	ON	ON		ON				
4	ON	ON		ON				
5	ON	ON		ON				
6	ON	ON		ON				
7	ON	ON		ON				
8	ON	ON		ON				
9	ON	ON		ON				
10	ON	ON		ON				
11	ON	ON		ON				
12	ON	ON		ON				
13	ON	ON		ON				
14	ON	ON		ON				
15	ON	ON		ON				
16	ON	ON		ON				
17	ON	ON		ON				
18	ON	ON		ON				
19	ON	ON		ON				
20	ON	ON		ON				
21	ON	ON		ON				
22	ON	ON		ON				
23	ON	ON		ON				
24	ON	ON		ON				
25	ON	ON		ON				
26	ON	ON		ON				
27	ON	ON		ON				
28	ON	ON		ON				
29	ON	ON		ON				
30	ON	ON		ON				
31	ON	ON		ON				
32	ON	ON		ON				

Vehicle Options 1-64 [5.2]

Det #	vol	occ	Yell Lock	Red Lock	Ext	Add Init	Que	Call
33					ON	ON		ON
34					ON	ON		ON
35					ON	ON		ON
36					ON	ON		ON
37					ON	ON		ON
38					ON	ON		ON
39					ON	ON		ON
40					ON	ON		ON
41					ON	ON		ON
42					ON	ON		ON
43					ON	ON		ON
44					ON	ON		ON
45					ON	ON		ON
46					ON	ON		ON
47					ON	ON		ON
48					ON	ON		ON
49					ON	ON		ON
50					ON	ON		ON
51					ON	ON		ON
52					ON	ON		ON
53					ON	ON		ON
54					ON	ON		ON
55					ON	ON		ON
56					ON	ON		ON
57					ON	ON		ON
58					ON	ON		ON
59					ON	ON		ON
60					ON	ON		ON
61					ON	ON		ON
62					ON	ON		ON
63					ON	ON		ON
64					ON	ON		ON

Parameters+ 1-64 [5.3]

Det #	oc G	oc Y	oc R	Dlay 1	Dlay 2	Type	Src
1						NORM	
2						NORM	
3						NORM	
4						NORM	
5						NORM	
6						NORM	
7						NORM	
8						NORM	
9						NORM	
10						NORM	
11						NORM	
12						NORM	
13						NORM	
14						NORM	
15						NORM	
16						NORM	
17						NORM	
18						NORM	
19						NORM	
20						NORM	
21						NORM	
22						NORM	
23						NORM	
24						NORM	
25						NORM	
26						NORM	
27						NORM	
28						NORM	
29						NORM	
30						NORM	
31						NORM	
32						NORM	

Parameters+ 1-64 [5.3]

Det #	occ Gm	occ Yell	occ Red	Dlay 1	Dlay 2	Type	Src
33						NORM	
34						NORM	
35						NORM	
36						NORM	
37						NORM	
38						NORM	
39						NORM	
40						NORM	
41						NORM	
42						NORM	
43						NORM	
44						NORM	
45						NORM	
46						NORM	
47						NORM	
48						NORM	
49						NORM	
50						NORM	
51						NORM	
52						NORM	
53						NORM	
54						NORM	

Det #	occ Gm	occ Yell	occ Red	Dlay 1	Dlay 2	Type	Src
55						NORM	
56						NORM	
57						NORM	
58						NORM	
59						NORM	
60						NORM	
61						NORM	
62						NORM	
63						NORM	
64						NORM	

Ped Det Parms [5.4]

Det #	Call Ø	No Act	Max Pres	Err Cnt
1			15	
2			15	
3			15	
4			15	
5			15	
6			15	
7			15	
8			15	

Unit Paramters [1.2.1]

TS2 Det Faults	OFF

Vol/Occ Report Parm [1.5.8]

Vol/Occ Period Minutes	0
Vol/Occ Period Minutes	15

Preemption Times [3.1], Options+ [3.6]

Pre #	Enable	Type	Output	Delay	MinDura
1	ON	RAIL	Dwell		
2	ON	RAIL	Dwell		
3	ON	EMERG	Dwell		
4	ON	EMERG	Dwell		
5	ON	EMERG	Dwell		
6	ON	EMERG	Dwell		

Pre #	MaxPres	MinGrn	MinWlk	PedClr	Co+Pre
1					ON
2					ON
3	90	2			ON
4					ON
5					ON
6					ON

Pre #	Track Grn	Min Dwell	Ext Dwell	PedClr+	Yel
1		2			
2		2			
3		2			
4		2			
5		2			
6		2			

Pre #	Red	Pattern	Skip
1			OFF
2			OFF
3			OFF
4			OFF
5			OFF
6			OFF

Low Priority Preempts

Pre #	Type	Min	Max
7	OFF		
8	OFF		
9	OFF		
10	OFF		

Unit Parameters [1.2.1]

Stop Timer Over Preempt	OFF
Preempt or Ext Output	PRE
Max Seek Track Time	
Max Seek Dwell Time	

Channel Parameters [1.8.3]

D Conn Mappings	OFF
Pre Invert Rail Input	None

Track Clear Phases [3.2], Track Clear Overlaps+ [3.5]

Pre #	Track Phases	Track Overlaps
1		
2		
3		
4		
5		
6		

Dwell Phases [3.2] and Overlaps+ [3.5]

Pre #		
1	Phases	
	Overlaps	
	Peds	
2	Phases	
	Overlaps	
	Peds	
3	Phases	
	Overlaps	
	Peds	
4	Phases	
	Overlaps	
	Peds	
5	Phases	
	Overlaps	
	Peds	
6	Phases	
	Overlaps	
	Peds	

Exit Phases [3.2]

Pre #	Exit Phase
1	
2	
3	
4	
5	
6	

Preemption 1, Options+ [3.6]

Pre #	Lock	Override Auto Flsh	Override Higher	Flsh Dwell	Link
1	ON	ON	ON	OFF	
2	ON	ON	ON	OFF	
3	ON	ON	ON	OFF	
4	ON	ON	ON	OFF	
5	ON	ON	ON	OFF	
6	ON	ON	ON	OFF	

Alt# 1 Times Table [1.1.6.1]

Column#.. ->	1	2	3	4	5	6	7	8
Assign Ø								
Min Grn								
Gap, Ext								
Max 1								
Max 2								
Yel Clr								
Red Clr								
Walk								
Ped Clr								

Alt# 2 Times Table [1.1.6.1]

Column#.. ->	1	2	3	4	5	6	7	8
Assign Ø								
Min Grn								
Gap, Ext								
Max 1								
Max 2								
Yel Clr								
Red Clr								
Walk								
Ped Clr								

Alt# 3 Times Table [1.1.6.1]

Column#.. ->	1	2	3	4	5	6	7	8
Assign Ø								
Min Grn								
Gap, Ext								
Max 1								
Max 2								
Yel Clr								
Red Clr								
Walk								
Ped Clr								

Alt# 1 Options Table [1.1.6.2]

Column # ->	1	2	3	4	5	6	7	8
Assign Ø								
Lock Calls	ON	ON	ON	ON	ON	ON	ON	ON
Soft Recall								
Dual Enrty								
Enabl SimGap	ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage								
Rest In Walk								
Cond Service								
Reservice								
Non-Act 1								
Red Rest								
Max2								
Ped Delay								
Conflicting Ø1								

Annual Schedule [4.3]	Month of Year												Day of Week							Date																							Day Plan	Link To
1	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
2	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
3	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
4	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
5	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
6	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
7	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
8	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
9	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
10	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
11	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
12	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
13	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
14	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
15	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
16	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
17	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
18	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
19	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
20	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
21	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
22	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
23	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	
24	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	

Day Plans [4.4]

Day Plan 1

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 2

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 3

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 4

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 5

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 6

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 7

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 8

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 9

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 10

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 11

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 12

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 13

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 14

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Day Plan 15

	Hour	Min	Act		Hour	Min	Act
1	0	0	0	9	0	0	0
2	0	0	0	10	0	0	0
3	0	0	0	11	0	0	0
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	0	0	0

Action Table [4.5]

Act#	Pat#	A1	A2	A3	S1	S2	S3	S4	S5	S6	S7	S8
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8											
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
48												
98												
99												
100	255											

Coord Alternate Tables - Pat+ [2.6]

Pat#	ØOpt	ØTime	DetG	Call Inh	CIC	CNA1	Overlap Off 1	2	3	4	5	6	7	8	Dia	Max2
1															DFT	
2															DFT	
3															DFT	
4															DFT	
5															DFT	
6															DFT	
7															DFT	
8															DFT	
9															DFT	
10															DFT	
11															DFT	
12															DFT	
13															DFT	
14															DFT	
15															DFT	
16															DFT	
17															DFT	
18															DFT	
19															DFT	
20															DFT	
21															DFT	
22															DFT	
23															DFT	
24															DFT	
25															DFT	
26															DFT	
27															DFT	
28															DFT	
29															DFT	
30															DFT	
31															DFT	
32															DFT	
33															DFT	
34															DFT	
35															DFT	
36															DFT	
37															DFT	
38															DFT	
39															DFT	
40															DFT	
41															DFT	
42															DFT	
43															DFT	
44															DFT	
45															DFT	
46															DFT	
47															DFT	
48															DFT	

#	Event / Alarm	Ev	Alr
1	Power Up Alarm.	ON	ON
2	Stop Timing	ON	ON
3	TS1 Cabinet Door	ON	ON
4	Coordination Failure	ON	ON
5	External Alarm # 1	ON	ON
6	External Alarm # 2	ON	ON
7	External Alarm # 3		
8	External Alarm # 4		
9	Closed Loop Disabled	ON	ON
10	External Alarm # 5		
11	External Alarm # 6		
12	Manual Control Enable	ON	ON
13	Coord Free Input		
14	Local Flash Input	ON	ON
15	MMU Flash		
16	CMU Flash		
17	Cycle Fault	ON	ON
18	Cycle Failure	ON	ON
19	Coordination Fault	ON	ON
20	Controller Fault	ON	ON
21	Detector SDLC Failure		
22	MMU SDLC Failure		
23	Critical SDLC Failure		
24	Reserved		
25	EEPROM CRC Fault	ON	ON
26	Detector Diagnostic Failure	ON	ON
27	BIU Detector Failure	ON	ON
28	Queue detector alarm	ON	ON
29	Ped Detector Fault	ON	ON
30	Coord Diagnostic Fault		
41	TempAlert Probe Ch. A		
42	TempAlert Probe Ch. B		
47	Coord Active		
48	Preempt Active	ON	ON
49	Preempt 1 Input	ON	ON
50	Preempt 2 Input	ON	ON
51	Preempt 3 Input	ON	ON
52	Preempt 4 Input	ON	ON
53	Preempt 5 Input	ON	ON
54	Preempt 6 Input	ON	ON
55	Preempt 7 Input	ON	ON
56	Preempt 8 Input	ON	ON
57	Preempt 9 Input	ON	ON
58	Preempt 10 Input	ON	ON
61	In Transition	ON	ON
81	FIO Status Alarm		

Call Phases[1.1.5]

Ø	Phases Called By Ø			
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

Redirect Phases[1.1.5]

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

Inhibit Phases[1.1.5]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																

Alt Call & Redirect # 1 [1.1.6.3]

Col	Ø	Phases Called By Ø				
1						
2						
3						
4						
5						
6						
7						
8						

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								

Alt Inhibit Phases # 1 [1.1.6.3]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																

Alt Call & Redirect # 2 [1.1.6.3]

Col	Ø	Phases Called By Ø				
1						
2						
3						
4						
5						
6						
7						
8						

	From	To	From	To	From	To	From	To
1								
2								
3								
4								
5								
6								
7								
8								

Alt Inhibit Phases # 2 [1.1.6.3]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																

Auto Flash Phase/Olap Settings [1.4.2]

Yel Ø								
Yel (olaps)								

Unit Parameters [1.2.1]

Allow Skip Yellow	OFF	Max Cycle Time	
TOD Dim Enable	OFF	Cycle Fault Action	Alarm
Tone Disable	OFF		
Diamond Mode	4Ph		
Backup Time (s)	900		
Disable Init Ped	OFF		
Cycle Fault Action	Alarm		
Enable Run Timer	ON		

C1-USER IO Map [1.8.9.1 In]

I1-1	189	Unused
I1-2	189	Unused
I1-3	189	Unused
I1-4	189	Unused
I1-5	189	Unused
I1-6	189	Unused
I1-7	189	Unused
I1-8	189	Unused
I2-1	189	Unused
I2-2	189	Unused
I2-3	189	Unused
I2-4	189	Unused
I2-5	189	Unused
I2-6	189	Unused
I2-7	189	Unused
I2-8	189	Unused
I3-1	189	Unused
I3-2	189	Unused
I3-3	189	Unused
I3-4	189	Unused
I3-5	189	Unused
I3-6	189	Unused
I3-7	189	Unused
I3-8	189	Unused
I4-1	189	
I4-2		
I4-3		
I4-4		
I4-5	179	Door Open
I4-6	189	Unused
I4-7	229	33xCMUStop
I4-8	228	33xFlashSns
I5-1	189	Unused
I5-2	189	Unused
I5-3	189	Unused
I5-4	189	Unused
I5-5	189	Unused
I5-6	189	Unused
I5-7	189	Unused
I5-8	189	Unused
I6-1	189	Unused
I6-2	189	Unused
I6-3	189	Unused
I6-4	189	Unused
I6-5	189	Unused
I6-6	189	Unused
I6-7	189	Unused
I6-8	189	Unused

C1-USER IO Map [1.8.9.2 Out]

O1-1	1	Ch1 Red
O1-2	49	Ch1 Green
O1-3	2	Ch2 Red
O1-4	26	Ch2 Yellow
O1-5	50	Ch2 Green
O1-6	3	Ch3 Red
O1-7	27	Ch3 Yellow
O1-8	51	Ch3 Green
O2-1	4	Ch4 Red
O2-2	52	Ch4 Green
O2-3	5	Ch5 Red
O2-4	29	Ch5 Yellow
O2-5	53	Ch5 Green
O2-6	6	Ch6 Red
O2-7	30	Ch6 Yellow
O2-8	54	Ch6 Green
O3-1	7	Ch7 Red
O3-2	55	Ch7 Green
O3-3	8	Ch8 Red
O3-4	32	Ch8 Yellow
O3-5	56	Ch8 Green
O3-6	9	Ch9 Red
O3-7	33	Ch9 Yellow
O3-8	57	Ch9 Green
O4-1	10	Ch10 Red
O4-2	58	Ch10 Green
O4-3	11	Ch11 Red
O4-4	35	Ch11 Yellow
O4-5	59	Ch11 Green
O4-6	12	Ch12 Red
O4-7	36	Ch12 Yellow
O4-8	60	Ch12 Green
O5-1	28	Ch4 Yellow
O5-2	34	Ch10 Yellow
O5-3	25	Ch1 Yellow
O5-4	31	Ch7 Yellow
O5-5	115	Not Used
O5-6	115	Not Used
O5-7	115	Not Used
O5-8	114	Watchdog
O6-1	115	Not Used
O6-2	115	Not Used
O6-3	13	Ch13 Red
O6-4	37	Ch13 Yellow
O6-5	61	Ch13 Green
O6-6	14	Ch14 Red
O6-7	38	Ch14 Yellow
O6-8	62	Ch14 Green

C1-USER IO Map [1.8.9.2 Out]

O7-1	115	Not Used
O7-2	115	Not Used
O7-3	115	Not Used
O7-4	115	Not Used
O7-5	115	Not Used
O7-6	115	Not Used
O7-7	115	Not Used
O7-8	115	Not Used

C11S-USER IO Map [1.8.9.1 In]

I4-1		
I4-2		
I4-3		
I4-4		
I7-1	189	Unused
I7-2	189	Unused
I7-3	189	Unused
I7-4	189	Unused
I7-5	189	Unused
I7-6	189	Unused
I7-7	189	Unused
I7-8	189	Unused
I8-1	189	Unused
I8-2	189	Unused
I8-3	189	Unused
I8-4	189	Unused
I8-5	189	Unused
I8-6	189	Unused
I8-7	189	Unused
I8-8	189	Unused

C11S-USER IO Map [1.8.9.2 Out]

O8-1	115	Not Used
O8-2	115	Not Used
O8-3	115	Not Used
O8-4	115	Not Used
O8-5	115	Not Used
O8-6	115	Not Used
O8-7	115	Not Used
O8-8	115	Not Used

IO Logic [1.8.7]

Op1	Result		O1Fcn	Inv1	Src1	IO1	Fun1	O2Fcn	Inv2	Src2	IO2	Fun2	O3Fcn	Inv3	Src3	IO3	Fun3	Dly	Sec
I	0	=	----	-	0	I	O	----	-	0	I	0	----	-	0	I	0	DLY	0
I	0	=	----	-	0	I	O	----	-	0	I	0	----	-	0	I	0	DLY	0
I	0	=	----	-	0	I	O	----	-	0	I	0	----	-	0	I	0	DLY	0
I	0	=	----	-	0	I	O	----	-	0	I	0	----	-	0	I	0	DLY	0
I	0	=	----	-	0	I	O	----	-	0	I	0	----	-	0	I	0	DLY	0
I	0	=	----	-	0	I	O	----	-	0	I	0	----	-	0	I	0	DLY	0
I	0	=	----	-	0	I	O	----	-	0	I	0	----	-	0	I	0	DLY	0
I	0	=	----	-	0	I	O	----	-	0	I	0	----	-	0	I	0	DLY	0
I	0	=	----	-	0	I	O	----	-	0	I	0	----	-	0	I	0	DLY	0
I	0	=	----	-	0	I	O	----	-	0	I	0	----	-	0	I	0	DLY	0

Security Access Levels [8.2]

1	SWLOAD
2	SECURE
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None
11	None
12	None
13	None
14	None
15	None
16	None
17	None
18	None
19	None
20	None
21	None
22	None
23	None
24	None
25	None
26	None
27	None
28	None
29	None
30	None
31	None
32	None
33	None
34	None
35	None
36	None
37	None
38	None
39	None
40	None
41	None
42	None
43	None
44	None
45	None
46	None
47	None
48	None
49	None
50	None
51	None
52	None
53	None
54	None
55	None
56	None
57	None
58	None
59	None
60	None
61	None
62	None
63	None
64	None

Com Parameters [6.1]

Station ID	4109
Group ID	0
Master ID	0
Backup Time	900

SysUp Modem [6.1]

Enable Modem	None
Idle Time	0
Dial Time	0
Tel:	
Alt:	

2070 Port Parms [6.2]

Port	Baud Rate	FCM
SP1	9600	6
SP2	9600	6
SP3	19200	6
SP4	38400	6
SP5	1200	0
SP6	1200	0
SP7	1200	0
SP8	1200	0

2070 IP 1 Addressing [6.5]

	Addressing			
Addr	192	168	10	100
Mask	255	255	255	0
Brdcst	0	0	0	0
GtWay	192	168	10	1
Port	###			

2070 IP 2 Addressing [6.5]

	Addressing			
Addr	192	168	10	100
Mask	255	255	255	0
Brdcst	0	0	0	0
GtWay	192	168	10	1
Port	5001			

2070 Port Binding Ports [6.6]

	Port	Echo	Mode
ASYNC1	SP1	None	0
ASYNC2	SP2	None	0
ASYNC3	OFF	None	0
ASYNC4	SP4	None	0
SYNC1	SP5S	SYNC3	OFF
SYNC2	SP3S	SYNC4	OFF

2070 Port Binding Functions [6.6]

Functio	Channel	Functior	Channel
TS2/CVI	None	SYSUp	ASYNC2
CMU/MN	None	SYSDow	ASYNC1
Opticom	None	Shell	None
Loop De	None		
GPS	None		

Appendix J
Noise Impacts

Tyoga Container Facility
Noise Impact Study
Water Street
Village of Painted Post
Steuben County, New York

Prepared for:

Tyoga Container Co.

Chris Morral
PO Box 517
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Tioga, PA 16946

Prepared by:

Vibra-Tech Engineers, Inc.

16 October 2020

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2 Executive summary

A noise impact study was conducted to analyze the noise impacts of the proposed 600,000-square foot Tyoga Container Warehouse Facility at 450 West Water Street on the adjacent properties, and the noise impact of semi-trucks passing the properties located along the West Water Street access road both during the day and at night.

During daytime hours (7 AM to 10 PM), the facility would generate 82 truck passes at 100 percent buildout, 61.5 trucks at 75 percent buildout, and 41 trucks at 50 percent buildout. A maximum of 18 truck passes would occur during nighttime hours (10 PM to 7 AM).

This noise impact study was performed with adherence to guidelines provided by the Federal Transportation Administration (FTA), The Federal Highway Administration (FHWA), and noise measurements recorded along West Water Street.

The following conclusion are made from this report:

1. The proposed facility will replace the former Ingersoll-Rand Foundry Site. No manufacturing operations will occur at the site. Semi-truck traffic traveling along West Water Street access road is the only anticipated source of traffic noise activity.

2. Vibra-Tech Engineers (VTE) performed 24 hours of continuous noise monitoring at three locations along West Water Street on Thursday, August 13, 2020 at 12:00 PM, through Friday, August 14, 2020 at 12:00 PM. No semi-truck traffic was observed during this period, only passenger vehicles and two-axle work trucks. Existing noise levels resulting from traffic are below the Village of Painted Post allowable daytime (65 dBA) and nighttime (55 dBA) noise limits.

3. According to the Village of Painted Post Zoning Law, commercial traffic is exempt from the noise limits defined in the Zoning Law.

4. The proposed warehouse facility will create approximately 100 additional semi-truck passes along the West Water Street Access Road per day; 82 during daytime hours (7 AM to 10 PM) and 18 at night (10 PM to 7 AM) for 100 percent buildout.

5. Projected noise levels from the proposed truck traffic along Water Street at 25 feet will be in compliance to the Village of Painted Post daytime allowable noise limit of 65 dBA at 100, 75, and 50 percent buildout.

6. Projected noise levels from the proposed truck traffic (18 trucks per night) along West Water Street at 25 feet will be in compliance to the Village of Painted Post nighttime allowable noise limit of 55 dBA, as the projected total nighttime noise level is 54.5 dBA.

7. Based on the overall increase in LDN noise levels resulting from truck traffic at 25 feet, the increase in LDN of 0.9, 0.8, and 0.6 dBA for 100, 75, and 50 percent buildout is considered Moderate as per the FTA Traffic Noise Manual.

3 Objectives

VTE was retained by Tyoga Container Facility to perform this Noise Impact Study. This study was conducted based on:

- Noise Impact Guidelines provided by the Federal Transportation Administration and the Federal Highway Administration Traffic Noise Model (TNM 3.0).
- Field measurement of existing Water Street noise levels conducted by Vibra-Tech Engineers August 2020.
- Tyoga Container Facility Transportation Impact Study June 2020, Larson Design Group.

The following scope of work is provided for this project:

- Review site plans and the Transportation Impact Study.
- Measure existing ambient noise levels along West Water Street.
- Predict noise levels from semi-truck traffic at various locations along West Water Street.
- Compare predicted overall noise levels to the Village of Painted Post Noise Ordinance and FTA Noise Impact Guidelines
- Preparation of final noise impact analysis report.

4 Acoustical Terminology

Sound levels are quantified by a variety of parameters and metrics. To aid the reader, this section introduces general concepts and terminology related to acoustics and environmental noise. The following related technical terms and criteria used for this project are summarized and outlined below:

4.1 Noise

Noise is generally considered to be unwanted sound. Sound is what we hear when our ears are exposed to small pressure fluctuations in the air. There are many ways in which pressure fluctuations are generated, but typically they are caused by vibrating movement of a solid object. The terms 'noise' and 'sound' in this report are used interchangeably since there is no physical difference between them. Noise can be described in terms of three variables: amplitude (loud or soft), frequency (pitch); and time pattern (variability).

4.2 Sound Pressure Level (L_p)

Loudness of a sound depends on the amplitude of the fluctuations above and below atmospheric pressure associated with a particular sound wave. The effective magnitude of the sound pressure in a sound wave can be expressed by the "root-mean-square" (rms) of the oscillating pressure measured in Pascals. The sound pressure level L_p has the units of decibels (dB).

4.3 Decibel (dB)

The quietest sound that can be heard by most humans, the "threshold of hearing," is a sound pressure of about 20 microPascals, and the loudest sounds typically found in our environment range up to 20 million microPascals. Because of the difficulty in dealing with such an extreme range of numbers, acousticians use a compressed scale based on logarithms of the ratios of the sound energy contained in the wave related to the square of sound pressures instead of the sound pressures themselves, resulting in the "sound pressure level" in decibels (dB).

4.4 Frequency (Hz)

Sound is a fluctuation of air pressure. The number of times the fluctuation occurs in one second is called its frequency. In acoustics, frequency is quantified in cycles per second, or Hertz (abbreviated Hz). Some sounds, like whistles, are associated with a single frequency; this type of sound is called a "pure tone." Most often, however, noise is made up of many frequencies, all blended. Human hearing covers the frequency range of 20 Hz to 20,000 Hz.

4.5 A-Weighted Sound Level (dBA)

A frequency weighting that relates to the human ear. Humans have hearing that is most sensitive for soft tones in the mid-to high frequencies but less sensitive in the low frequencies; that is, hearing for soft tones "drops off" in the low frequencies. Sound level meters set to the A-weighting scale

will filter out much of the low-frequency noise they measure, like the response of the human ear. Noise measurements made with the A-weighting scale are designated “dBA”.

4.6 L_{Aeq} - Equivalent Continuous sound Level

A steady noise level (weighted) which over a period has the same sound energy as the time varying noise.

4.7 $L_{Aeq(1Hr)}$ - One Hour Equivalent continuous sound Level

A steady noise level (weighted) which over a period of time has the same sound energy as the time varying noise.

4.8 Day Level (L_d)

Overall total noise level from 7:00 AM to 10:00 PM

4.9 Night Level (L_n)

Overall total noise level from 10:00 PM to 7:00 AM

4.10 Level Day/Night (LDN)

Overall 24 hour noise level measured over a 24 hour period with a 10 dB penalty (+10dB) added to night time hourly Leq values from 10:00 PM to 7:00 AM

5 Noise Impact Criteria

5.1 Village of Painted Post, New York Noise Criteria

Based on the Village of Painted Post Zoning Law, the limits for continuous airborne noise are 65 dBA (L_d) during daytime hours (7:00 AM to 10:00 PM) and 55 dBA (L_n) during nighttime hours (10:00 PM to 7:00 AM). It should be noted that noise from commercial traffic is exempt from the noise limits defined in the Village of Painted Post Zoning Law.

5.2 Federal Transportation Administration (FTA) Noise Impact Criteria

As per the FTA Option A –The methods described for Transit Noise due to new traffic noise sources, with no changes to the existing road were followed. The Residential Land Use Category 2 – Outdoor LDN noise parameter was used for noise at the nearest building façade. Ambient noise levels were compared to the calculated and modeled truck noise levels as suggested by FTA methods to determine the potential noise impact along West Water Street.

Utilizing the equations provided in the FTA Traffic Noise and Vibration Assessment Manual's Table 4-23 below, VTE calculated the overall L_d, L_n, and Level Day/Night (LDN) noise levels for comparison to both the Village of Post Noise Ordinance and the FTA suggested limits.

For these calculations, distances of 25 and 50 feet were used with no adjustments. The equation variables are as follows:

V = 106

Vd = 5.5 Trucks at 100 percent, 4.1 Trucks at 75 percent, and 2.8 Trucks at 50 percent

Vn = 2 Trucks

S = 20

Table 4-23 Computation of $L_{eq(1hr)}$ and L_{dn} at 50 ft: Highway/Transit Sources		
$L_{eq(1hr)}$ at 50 ft	$L_{eq(1hr)} = SEL_{ref} + 10\,log(V) + C_{emissions} - 10\log(\frac{S}{50}) - 35.6$	**Eq. 4-34**
Daytime L_d at 50 ft	$L_d = L_{eq(1hr)}$ where V = V_d	**Eq. 4-35**
Nighttime L_n at 50 ft	$L_n = L_{eq(1hr)}$ where V = V_n	**Eq. 4-36**
L_{dn} at 50 ft	$L_{dn} = 10log(15 \times 10^{(L_d/10)} + 9 \times 10^{((L_n+10)/10)}) - 13.8$	**Eq. 4-37**
Adjustments	= -3 for automobiles, open-graded asphalt = +3 for automobiles, grooved pavement	
V	= average hourly volume of vehicles, vehicles per hour	
$C_{emissions}$	= $25\log(\frac{S}{50})$ for buses $31\log(\frac{S}{50})$ for hybrid buses [23] 1.6 for accelerating 3-axle commuter buses $40\log(\frac{S}{50})$ for automobiles	
S	= average vehicle speed, mph (distance divided by time, excluding stop time at red lights)	
V_d	= average hourly daytime volume of vehicles of this type, vehicles per hour $= \frac{total\ vehicle\ volume, 7\ a.m.\ to\ 10\ p.m.}{15}$	
V_n	= average hourly nighttime volume of vehicles, vehicles per hour $= \frac{total\ vehicle\ volume, 10\ p.m.\ to\ 7\ a.m.}{9}$	

5.3 Modeled Truck Traffic Noise – FHWA Traffic Noise Model 3.0

Projected noise levels for the increase truck traffic volume were also determined using the FHWA Traffic Noise Model (TNM 3.0). These projected levels were also compared to the Village of Painted Post noise limits and the FTA suggested limits. The TNM input parameters included average road conditions, truck speed of 20 mph, truck traffic volume (5.5 at100 %, 4.1 at 75%, and 2.8 at 50%) during the day (7 AM to 10 PM) and 2 trucks per hour at night (10 PM to 7 AM). A total of 10 noise receiver locations were used to model noise at 10 residential buildings along West Water Street. These receivers were modeled at a distance of approximately 25 feet from the edge of the road. Figure 1 below shows modeled noise receiver locations along West Water Street.

Figure 1. Noise receiver locations along West Water Street used in the Traffic Noise Model to predict truck noise.

6 Existing Noise Monitoring Procedure

Representatives of VTE performed 24 hours of continuous ambient noise monitoring at three locations along West Water Street on Thursday, August 13, 2020 12:00 PM through Friday August 14, 2020 12:00 PM.

The monitoring locations are shown in Figure 2. The noise levels measured at each location consisted of the 1 hour equivalent sound level (L_{eq}) dBA. The overall continuous daytime (L_d) and nighttime (L_n) were then calculated using the 1 hour L_{eq} measurements. All noise levels were measured using Larson Davis Type I integrating sound level meters. These meters were factory calibrated within the past year, with a field calibration check performed at the beginning and end of the study.

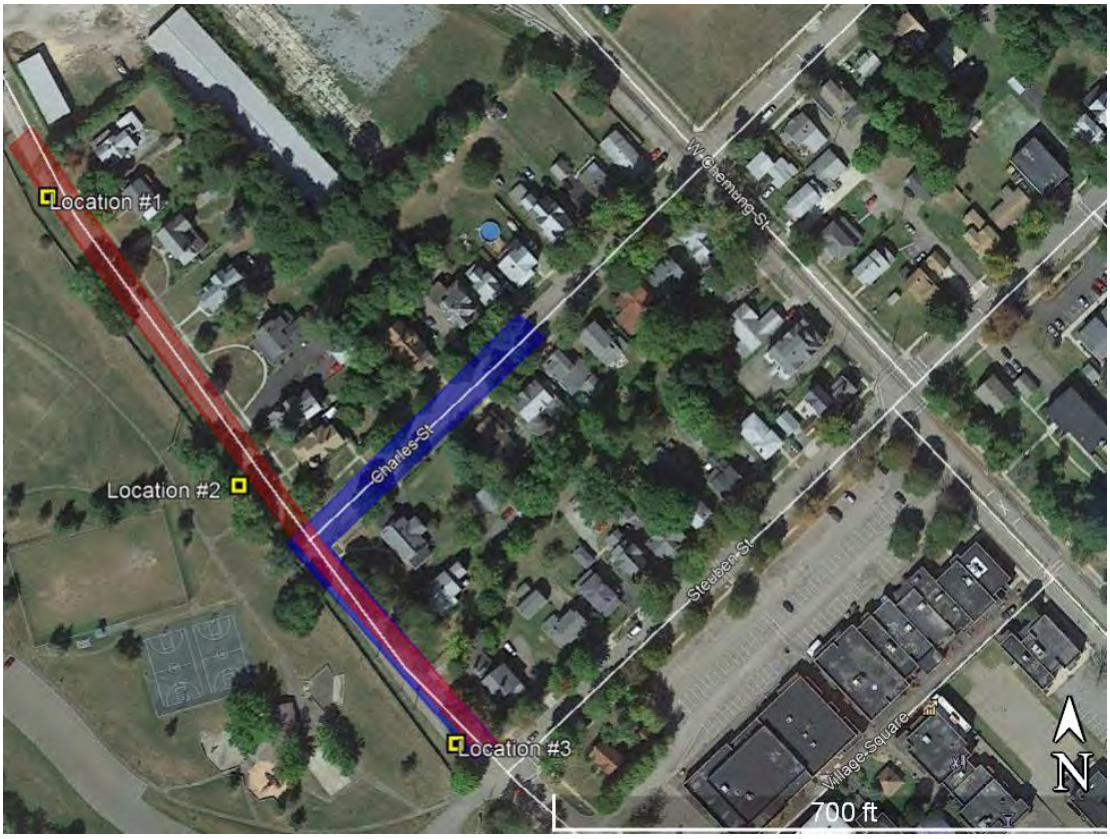


Figure 1. Ambient Noise Monitoring Locations (Water Street)

6.1 Existing Ambient Noise Monitoring Results

Based on 24 hours of monitoring at 3 locations along West Water Street, VTE calculated the L_d, L_n and (LDN) for each location utilizing the measured 1-hour Leq noise levels. T should be noted that the LDN calculation includes a 10 dB penalty applied during the hours of 10 PM to 7 AM. This data has been summarized in Table 1 below. All sound level data summaries are provided in Appendix A.

Table 1. Summary of 24-hour L_d, L_n, and LDN ambient noise levels measured at 3 locations on West Water Street on August 13 and 14, 2020.

Location Water Street	L_d (dBA)	L_n (dBA)	LDN (dBA)
1	54.9	52.9	63.6
2	53.1	50.9	61.6
3	56.8	52.0	63.2
LEQ	**55.2**	**52.0**	**62.9**

6.2 Predicted Truck Noise Levels During Warehouse Operation

6.2.1 Calculated Noise Levels Using FTA

Utilizing the equations provided in Table 4.23 from the FTA manual, VTE calculated the L_d, L_n, and LDN noise levels from the contribution of the proposed truck traffic on West Water Street. Based on information obtained from the Transportation Impact Study and Tyoga Container, we used the following information for these calculations:

- Total trucks per 24 hours of 100, 79.5, and 59; representing 100, 75, and 50 percent buildout
- 82 trucks per day (5.5 per hour at 100%)
- 61.5 trucks per day (4.1 per hour at 75%)
- 41 trucks per day (2.8 per hour at 50%)
- 18 trucks at night (2 Trucks per hour regardless of percent buildout)

The results of these calculations are summarized in Tables 2.

Table 2. Calculated truck noise utilizing equations in Table 4-23 of the FTA Guideline at 25 and 50 feet from the edge of West Water Street.

Percent Buildout	Location	L_d (dBA)	L_n (dBA)	LDN (dBA)
100 %	**Water Street 25'**	55.3	51.0	56.7
100 %	**Water Street 50'**	50.8	46.4	52.1
75 %	**Water Street 25'**	54.1	51.0	55.8
75 %	**Water Street 50'**	49.6	46.4	51.3
50 %	**Water Street 25'**	52.5	51.0	54.8
50 %	**Water Street 50'**	47.9	46.4	50.2

6.2.2 Predicted using FHWA Traffic Noise Model 3.0

In addition to calculating the proposed truck traffic noise, VTE also utilized the FHWA traffic noise model. A summary of the model results is provided in Table 3 showing the maximum predicted level for L_d, L_n, and LDN for 100, 75, and 50 percent buildout. The model output table are included as Appendix B.

Table 3. Maximum L_d, L_n, and LDN predicted truck noise levels along West Water Street utilizing the FHWA Traffic Noise Model (TNM3.0).

Percent Buildout	Location	L_d (dBA)	L_n (dBA)	LDN (dBA)
100 %	**Water Street 25'**	55.7	51.3	57.0
75 %	**Water Street 25'**	54.4	51.3	56.1
50 %	**Water Street 25'**	52.8	51.3	55.1

A comparison of calculated and modeled noise levels at 25 feet from the edge of West Water Street provided in Tables 2 and 3 indicates both methods of estimating truck traffic yield similar predicted noise levels as a result of the proposed truck traffic.

7 Conclusion

Impact Assessment - Existing Ambient plus proposed truck noise at 25 feet

In order to complete the truck noise impact assessment, the change or increase in overall noise levels due to the proposed truck traffic was calculated. This was completed by comparing the existing ambient noise level measured along West Water Street to the results of the TNM predictions for additional truck noise. Based on this comparison, the total noise and the increase to existing noise could be determined. A summary of this data appears in Tables 4 through 6.

To determine the potential truck noise impact, VTE followed the FTA suggested guidelines, FTA Option A -Transit noise due to new traffic noise sources, with no changes to the existing road. The Residential Land Use Category 2 – Outdoor LDN noise parameter was used for noise at the nearest building façade. The FTA impact assessment criteria used for Option A are Figure 4-2 and Table 4-5 shown below.

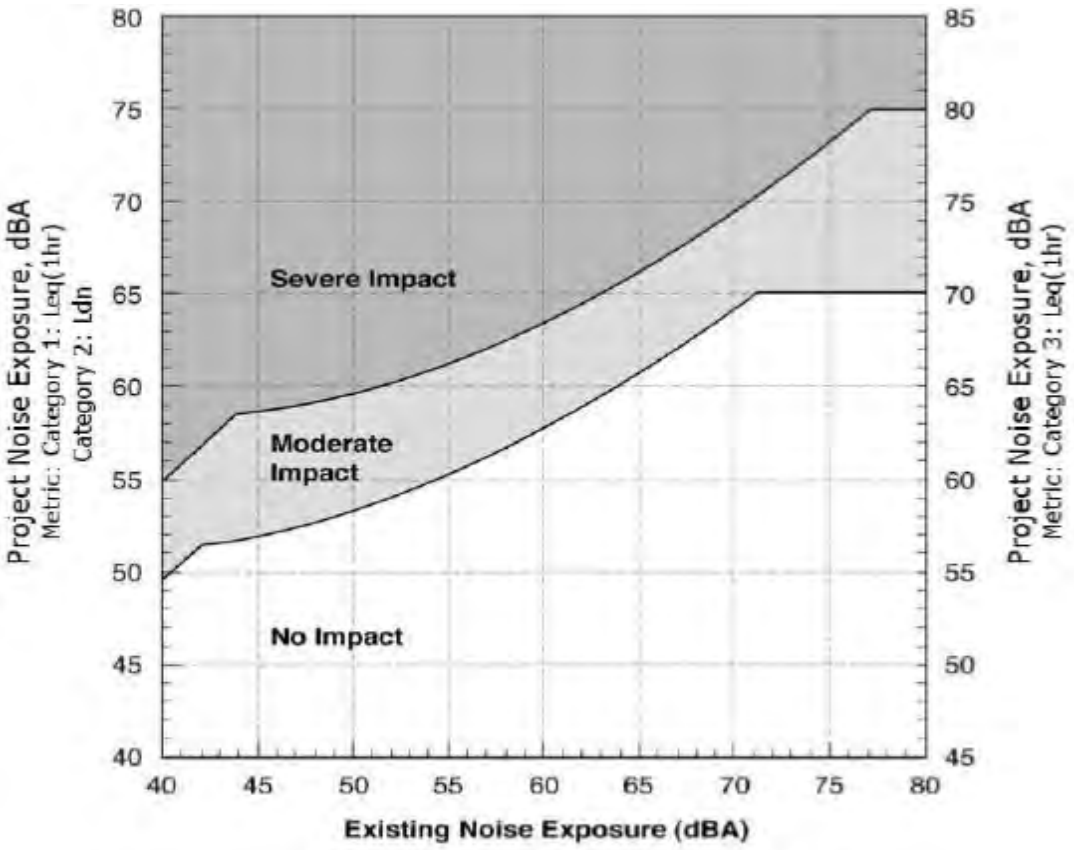


Figure 4-2 Noise Impact Criteria for Transit Projects

Table 4-5 Noise Levels Defining Impact for Transit Projects

Existing Noise Exposure, dBA	Project Noise Impact Exposure, dBA					
	Category 1 ($L_{eq(1hr)}$) or 2 (L_{dn}) Sites			Category 3 Sites ($L_{eq(1hr)}$)		
$L_{eq(1hr)}$ or L_{dn}	No Impact	Moderate Impact	Severe Impact	No Impact	Moderate Impact	Severe Impact
<43	< Ambient+10	Ambient +10 to 15	> Ambient+15	< Ambient+15	Ambient +15 to 20	> Ambient+20
43	<52	52-58	>58	<57	57-63	>63
44	<52	52-58	>58	<57	57-63	>63
45	<52	52-58	>58	<57	57-63	>63
46	<53	53-59	>59	<58	58-64	>64
47	<53	53-59	>59	<58	58-64	>64
48	<53	53-59	>59	<58	58-64	>64
49	<54	54-59	>59	<59	59-64	>64
50	<54	54-59	>59	<59	59-64	>64
51	<54	54-60	>60	<59	59-65	>65
52	<55	55-60	>60	<60	60-65	>65
53	<55	55-60	>60	<60	60-65	>65
54	<55	55-61	>61	<60	60-66	>66
55	<56	56-61	>61	<61	61-66	>66
56	<56	56-62	>62	<61	61-67	>67
57	<57	57-62	>62	<62	62-67	>67
58	<57	57-62	>62	<62	62-67	>67
59	<58	58-63	>63	<63	63-68	>68
60	<58	58-63	>63	<63	63-68	>68
61	<59	59-64	>64	<64	64-69	>69
62	<59	59-64	>64	<64	64-69	>69
63	<60	60-65	>65	<65	65-70	>70
64	<61	61-65	>65	<66	66-70	>70
65	<61	61-66	>66	<66	66-71	>71
66	<62	62-67	>67	<67	67-72	>72
67	<63	63-67	>67	<68	68-72	>72
68	<63	63-68	>68	<68	68-73	>73
69	<64	64-69	>69	<69	69-74	>74
70	<65	65-69	>69	<70	70-74	>74
71	<66	66-70	>70	<71	71-75	>75
72	<66	66-71	>71	<71	71-76	>76
73	<66	66-71	>71	<71	71-76	>76
74	<66	66-72	>72	<71	71-77	>77
75	<66	66-73	>73	<71	71-78	>78
76	<66	66-74	>74	<71	71-79	>79
77	<66	66-74	>74	<71	71-79	>79
>77	<66	66-75	>75	<71	71-80	>80

Table 4. Summary of measured ambient, predicted truck noise at 100 percent buildout, and total noise on West Water Street.

Location	LDay (dBA)	LNight (dBA)	LDN (dBA)
Water Street Existing Noise	55.2	52.0	62.9
TNM – West Water Street Additional Truck Noise – 25 Feet	55.3	51.0	56.7
Total Noise	58.3	54.5	63.8
Increase to Existing Noise	+3.1	+2.5	+0.9

Table 5. Summary of measured ambient, predicted truck noise at 75 percent buildout, and total noise on West Water Street.

Location	LDay (dBA)	LNight (dBA)	LDN (dBA)
Water Street Existing Noise	55.2	52.0	62.9
TNM-Water Street Additional Truck Noise – 25 Feet	54.1	51.0	55.8
Total Noise	57.7	54.5	63.7
Increase to Existing Noise	+2.5	+2.5	+0.8

Table 6. Summary of measured ambient, predicted truck noise at 50 percent buildout, and total noise on West Water Street.

Location	LDay (dBA)	LNight (dBA)	LDN (dBA)
Water Street Existing Noise	55.2	52.0	62.9
TNM-Water Street Additional Truck Noise – 25 Feet	52.5	51.0	54.8
Total Noise	57.1	54.5	63.5
Increase to Existing Noise	+1.9	+2.5	+0.6

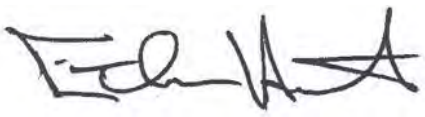
The Village of Painted Post limits for continuous airborne noise are 65 dBA (L_d) during daytime hours (7:00 AM to 10:00 PM) and 55 dBA (L_n) during nighttime hours (10:00 PM to 7:00 AM). It should be noted that noise from commercial traffic is listed as an exemption from the noise limits defined in the Village of Painted Post Zoning Law.

The total combined daytime (L_d) noise for 100, 75, and 50 percent buildout are 58.3, 57.7, and 57.1 respectively, considering the existing ambient noise plus the additional proposed truck noise. These levels are all below the daytime limit of 65 dBA (L_d). Please refer to Tables 4 through 6. The total nighttime (L_n) noise from existing ambient plus additional proposed truck noise is 54.8. This level is below the nighttime 55 dBA limit.

Projections were performed based on the methods described for Transit Noise due to new traffic noise sources, with no changes to the existing road. Considering the Residential Land Use Category 2, and the Outdoor LDN noise parameter at the nearest building façade, an increase in LDN of +0.9 dBA for 100 percent buildout, +0.8 dBA for 75 buildout, and +0.6 dBA for 50 percent buildout, due to the proposed truck traffic would all be considered a Moderate Impact as per Figure 4-2 and Table 4-5 of the FTA Traffic Noise and Assessment Manual.

Respectfully Submitted,

Vibra-Tech Engineers, Inc.



Ethan Huff
Project Manager

Jonathan A. Ferdinand
Noise and Vibration Specialist

8 Appendix A - Sound Level Data Measured along West Water Street

	Location 1 s/n 1595	Location 2 s/n 6144	Location 3 s/n 1596
Hour	LEQ	LEQ	LEQ
12:00	51.9	52.6	55.6
13:00	57.3	55.4	58.6
14:00	54	52.9	56.7
15:00	53.8	54.2	60.6
16:00	52.5	52.1	55.1
17:00	52.9	53.2	58
18:00	61.1	55	57.6
19:00	51.3	50.9	55.5
20:00	53.8	52.2	54.4
21:00	55.7	52.7	54
22:00	54.6	51.7	52.6
23:00	52.7	50.3	51.2
0:00	52	49.4	49.9
1:00	51.8	49.1	49
2:00	50.9	48.8	48.7
3:00	50.8	49.7	49
4:00	52	50.9	50.8
5:00	53.8	52.1	52.9
6:00	55.2	53.7	56.8
7:00	53.6	52.4	56.1
8:00	53.7	52.4	55.4
9:00	52.4	52	55.4
10:00	54	53.6	57.3
11:00	53.2	52.6	55.7
LEQ-Day	**54.9**	**53.2**	**57**
LEQ-Night	**53.3**	**51.2**	**52.5**
LDN	**59.8**	**58.7**	**60.5**

9 Appendix B - Results of Traffic Noise Model

L_{Aeq} Daytime (50% buildout)

REPORT:	**Results: Sound Levels Diagnosis By Vehicle Type - Input Heights**		
TNM VERSION:	3.0.7.60002	REPORT DATE:	16 October 2020
CALCULATED WITH:	3.0.7.60002	CALCULATION DATE:	10/16/2020 11:55:18 AM
CASE:	Tyoga_Ld	ORGANIZATION:	Vibra-Tech Engineers, Inc.
ANALYSIS BY:	Siavash Mahvelati, Ph.D.	PROJECT/CONTRACT:	Tyoga Container Company (Sound and Vibration Study)
ATMOSPHERICS:	70°F, 50%	DEFAULT GROUND TYPE:	HardSoil

Selected Receivers		Total	Vehicle Type	Partial
Name	No.	LAeq	Name	LAeq
		dBA		dBA
Receiver-1	1	52.8	HeavyTrucks	52.8
Receiver-2	2	52.6	HeavyTrucks	52.6
Receiver-3	3	52.1	HeavyTrucks	52.1
Receiver-4	4	51.3	HeavyTrucks	51.3
Receiver-5	5	50.6	HeavyTrucks	50.6
Receiver-6	6	52.4	HeavyTrucks	52.4
Receiver-7	7	52.7	HeavyTrucks	52.7
Receiver-8	8	50.1	HeavyTrucks	50.1
Receiver-9	9	50.7	HeavyTrucks	50.7
Receiver-10	10	51.8	HeavyTrucks	51.8

L_{Aeq} Daytime (75% buildout)

REPORT:	**Results: Sound Levels Diagnosis By Vehicle Type - Input Heights**		
TNM VERSION:	3.0.7.60002	REPORT DATE:	16 October 2020
CALCULATED WITH:	3.0.7.60002	CALCULATION DATE:	10/16/2020 11:53:48 AM
CASE:	Tyoga_Ld	ORGANIZATION:	Vibra-Tech Engineers, Inc.
ANALYSIS BY:	Siavash Mahvelati, Ph.D.	PROJECT/CONTRACT:	Tyoga Container Company (Sound and Vibration Study)
ATMOSPHERICS:	70°F, 50%	DEFAULT GROUND TYPE:	HardSoil

Selected Receivers		Total	Vehicle Type	Partial
Name	No.	LAeq	Name	LAeq
		dBA		dBA
Receiver-1	1	54.4	HeavyTrucks	54.4
Receiver-2	2	54.2	HeavyTrucks	54.2
Receiver-3	3	53.8	HeavyTrucks	53.8
Receiver-4	4	53.0	HeavyTrucks	53.0
Receiver-5	5	52.3	HeavyTrucks	52.3
Receiver-6	6	54.0	HeavyTrucks	54.0
Receiver-7	7	54.4	HeavyTrucks	54.4
Receiver-8	8	51.7	HeavyTrucks	51.7
Receiver-9	9	52.4	HeavyTrucks	52.4
Receiver-10	10	53.5	HeavyTrucks	53.5

L_{Aeq} Daytime (100% buildout)

REPORT:	**Results: Sound Levels Diagnosis By Vehicle Type - Input Heights**		
TNM VERSION:	3.0.7.60002	REPORT DATE:	16 October 2020
CALCULATED WITH:	3.0.7.60002	CALCULATION DATE:	10/16/2020 11:50:27 AM
CASE:	Tyoga_Ld	ORGANIZATION:	Vibra-Tech Engineers, Inc.
ANALYSIS BY:	Siavash Mahvelati, Ph.D.	PROJECT/CONTRACT:	Tyoga Container Company (Sound and Vibration Study)
ATMOSPHERICS:	70°F, 50%	DEFAULT GROUND TYPE:	HardSoil

Selected Receivers		Total	Vehicle Type	Partial
Name	No.	LAeq	Name	LAeq
		dBA		dBA
Receiver-1	1	55.7	HeavyTrucks	55.7
Receiver-2	2	55.5	HeavyTrucks	55.5
Receiver-3	3	55.0	HeavyTrucks	55.0
Receiver-4	4	54.3	HeavyTrucks	54.3
Receiver-5	5	53.5	HeavyTrucks	53.5
Receiver-6	6	55.3	HeavyTrucks	55.3
Receiver-7	7	55.6	HeavyTrucks	55.6
Receiver-8	8	53.0	HeavyTrucks	53.0
Receiver-9	9	53.6	HeavyTrucks	53.6
Receiver-10	10	54.7	HeavyTrucks	54.7

L_{Aeq} Nighttime

REPORT:	**Results: Sound Levels Diagnosis By Vehicle Type - Input Heights**		
TNM VERSION:	3.0.7.60002	REPORT DATE:	16 October 2020
CALCULATED WITH:	3.0.7.60002	CALCULATION DATE:	10/16/2020 1:39:11 PM
CASE:	Tyoga_Ld	ORGANIZATION:	Vibra-Tech Engineers, Inc.
ANALYSIS BY:	Siavash Mahvelati, Ph.D.	PROJECT/CONTRACT:	Tyoga Container Company (Sound and Vibration Study)
ATMOSPHERICS:	70°F, 50%	DEFAULT GROUND TYPE:	HardSoil

Selected Receivers		Total	Vehicle Type	Partial
Name	No.	LAeq	Name	LAeq
		dBA		dBA
Receiver-1	1	51.3	HeavyTrucks	51.3
Receiver-2	2	51.1	HeavyTrucks	51.1
Receiver-3	3	50.7	HeavyTrucks	50.7
Receiver-4	4	49.9	HeavyTrucks	49.9
Receiver-5	5	49.1	HeavyTrucks	49.1
Receiver-6	6	50.9	HeavyTrucks	50.9
Receiver-7	7	51.2	HeavyTrucks	51.2
Receiver-8	8	48.6	HeavyTrucks	48.6
Receiver-9	9	49.2	HeavyTrucks	49.2
Receiver-10	10	50.3	HeavyTrucks	50.3

Appendix K
Utility Background Information and Analysis

VILLAGE OF PAINTED POST
WATER MODELING NETWORK

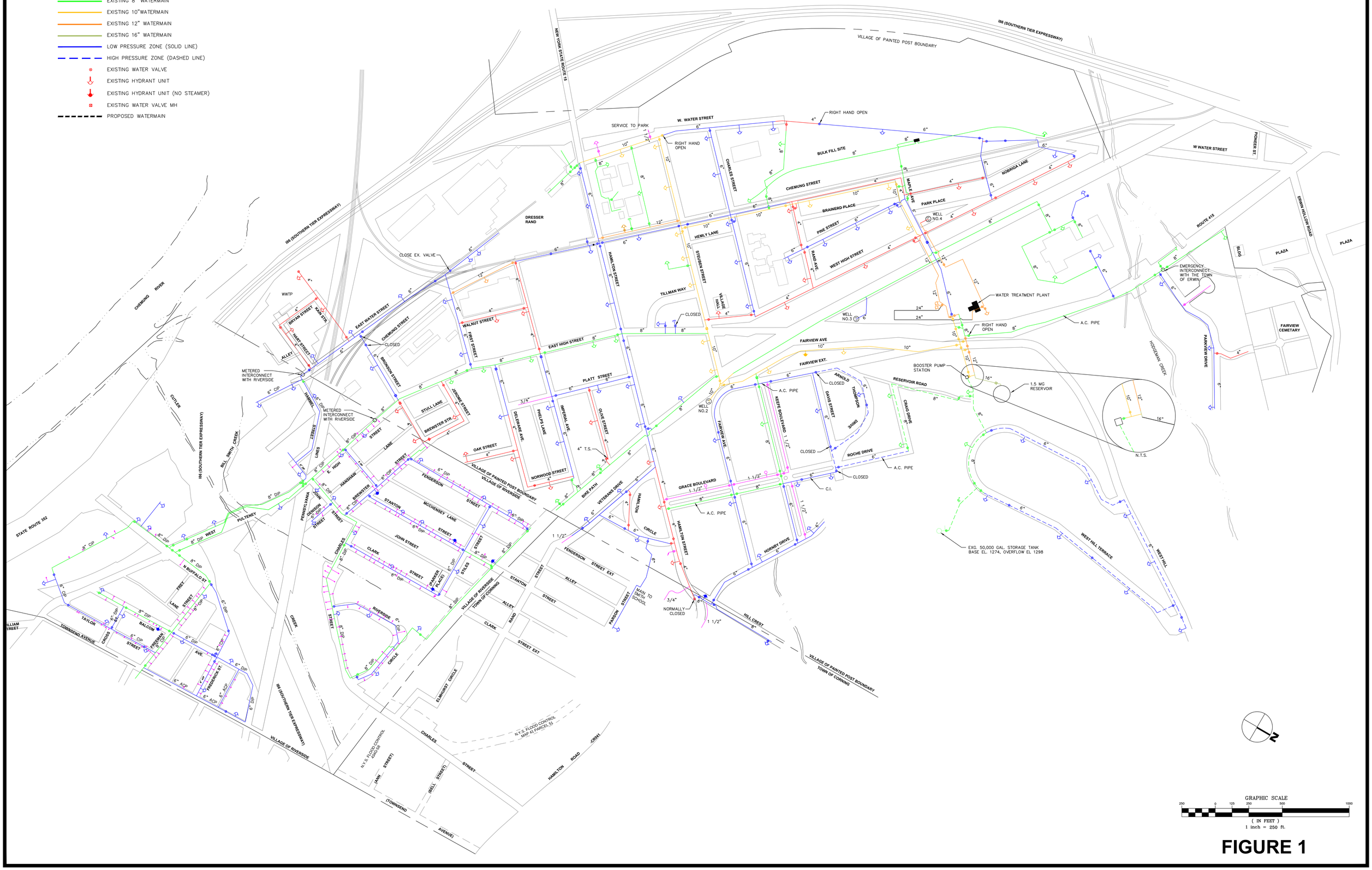
0 125 250 500 750 1,000 Feet

N E S W

VILLAGE OF RIVERSIDE
VILLAGE OF PAINTED POST

VILLAGE OF PAINTED POST WATER SYSTEM

- EXISTING WATERMAIN (LESS THAN 4")
- EXISTING 4" WATERMAIN
- EXISTING 6"WATERMAIN
- EXISTING 8" WATERMAIN
- EXISTING 10"WATERMAIN
- EXISTING 12" WATERMAIN
- EXISTING 16" WATERMAIN
- LOW PRESSURE ZONE (SOLID LINE)
- HIGH PRESSURE ZONE (DASHED LINE)
- EXISTING WATER VALVE
- EXISTING HYDRANT UNIT
- EXISTING HYDRANT UNIT (NO STEAMER)
- EXISTING WATER VALVE MH
- PROPOSED WATERMAIN



GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

1 inch = 250 ft.

FIGURE 1

Village of Painted Post Fire Flows

	ID	Static Demand (gpm)	Static Pressure (psi)	Static Head (ft)	Fire-Flow Demand (gpm)	Residual Pressure (psi)	Hydrant Available Flow (gpm)	Hydrant Pressure at Available Flow (psi)
1	J-100	0.26	105.18	1,181.23	50.00	104.27	3,154.48	20.00
2	J-101	0.10	105.43	1,181.30	50.00	104.49	2,653.41	20.00
3	J-102	0.10	106.09	1,181.34	50.00	104.74	800.72	20.00
4	J-103	0.10	106.08	1,181.32	50.00	104.74	807.03	20.00
5	J-104	0.10	105.05	1,180.93	50.00	104.16	3,231.91	20.00
6	J-105	0.10	104.41	1,179.45	50.00	103.53	3,011.89	20.00
7	J-106	0.10	103.19	1,178.63	50.00	102.32	2,945.49	20.00
8	J-107	0.10	103.98	1,179.46	50.00	102.71	843.20	20.00
9	J-108	0.10	104.49	1,180.13	50.00	103.04	852.00	20.00
10	J-109	0.10	104.80	1,180.85	50.00	103.74	1,740.74	20.00
11	J-110	0.10	104.49	1,180.13	50.00	101.87	415.57	20.00
12	J-111	0.10	103.69	1,179.28	50.00	102.78	2,937.50	20.00
13	J-113	0.10	102.90	1,178.45	50.00	102.06	3,217.60	20.00
14	J-114	0.10	104.36	1,179.33	50.00	103.46	2,690.35	20.00
15	J-115	0.10	102.28	1,178.53	50.00	101.43	3,050.22	20.00
16	J-116	0.10	100.56	1,178.53	50.00	99.70	2,712.40	20.00
17	J-117	0.10	97.94	1,176.48	50.00	96.90	2,162.38	20.00
18	J-118	0.10	91.02	1,175.48	50.00	90.12	2,305.14	20.00
19	J-119	0.10	90.88	1,175.16	50.00	90.03	2,483.97	20.00
20	J-120	0.10	88.70	1,175.13	50.00	87.79	1,706.74	20.00
21	J-121	0.10	92.75	1,176.48	50.00	91.50	961.14	20.00
22	J-122	0.10	95.77	1,176.48	50.00	94.58	1,111.74	20.00
23	J-123	0.10	97.94	1,176.48	50.00	96.82	1,438.37	20.00
24	J-124	0.10	97.94	1,176.48	50.00	96.77	1,211.39	20.00
25	J-125	0.10	97.94	1,176.48	50.00	96.38	672.96	20.00
26	J-126	0.00	90.58	1,176.48	50.00	89.10	676.08	20.00
27	J-127	0.10	77.67	1,174.62	50.00	76.88	1,501.42	20.00
28	J-128	0.10	71.18	1,174.60	50.00	70.41	1,644.19	20.00
29	J-129	0.10	102.90	1,177.95	50.00	102.16	4,593.72	20.00
30	J-131	0.10	81.87	1,174.33	50.00	81.20	4,142.63	20.00
31	J-132	0.10	81.89	1,174.37	50.00	81.21	3,874.90	20.00
32	J-133	0.10	40.91	1,174.60	50.00	39.97	483.70	20.00
33	J-134	0.10	69.01	1,174.59	50.00	68.26	2,144.80	20.00
34	J-135	0.10	64.67	1,174.55	50.00	63.93	2,025.51	20.00
35	J-136	0.10	64.67	1,174.55	50.00	63.93	1,855.40	20.00
36	J-137	0.10	49.54	1,174.55	50.00	48.77	1,227.44	20.00
37	J-138	0.10	86.31	1,174.60	50.00	85.58	3,080.42	20.00
38	J-139	0.10	81.95	1,174.51	50.00	81.23	3,068.98	20.00
39	J-14	0.10	70.83	1,158.79	50.00	70.45	3,330.59	20.00
40	J-140	0.10	81.95	1,174.51	50.00	81.22	2,715.67	20.00
41	J-141	0.10	81.93	1,174.47	50.00	81.22	3,185.49	20.00
42	J-142	0.10	86.31	1,174.58	50.00	85.57	2,976.67	20.00
43	J-143	0.10	81.89	1,174.37	50.00	81.20	3,156.50	20.00
44	J-144	0.10	69.78	1,174.37	50.00	69.05	1,722.12	20.00
45	J-145	0.10	98.55	1,297.90	500.00	80.87	1,119.09	20.00
46	J-146	0.10	120.17	1,297.90	500.00	106.09	1,443.44	20.00
47	J-147	0.10	118.01	1,297.90	500.00	104.86	1,480.49	20.00
48	J-148	0.10	76.93	1,297.90	500.00	67.77	1,342.28	20.00
49	J-149	0.10	66.12	1,297.90	500.00	61.55	1,744.11	20.00
50	J-150	0.10	44.50	1,297.90	500.00	41.20	1,478.59	20.00
51	J-151	0.10	78.66	1,297.90	500.00	67.76	1,241.05	20.00
52	J-152	0.12	32.82	1,297.90	500.00	20.46	510.10	20.00
53	J-153	0.10	35.85	1,297.90	500.00	34.06	1,624.52	20.00
54	J-165	0.08	107.64	1,188.92	50.00	105.79	1,023.83	20.00
55	J-166	0.08	110.53	1,195.61	50.00	108.36	858.18	20.00
56	J-167	0.08	105.92	1,184.94	50.00	105.01	2,694.59	20.00
57	J-20	0.08	111.71	1,199.32	50.00	111.00	4,978.36	20.00
58	J-21	0.00	108.96	1,195.98	50.00	108.04	3,576.31	20.00
59	J-22	0.00	101.79	1,194.89	50.00	100.81	3,207.34	20.00
60	J-23	0.10	81.86	1,158.79	50.00	81.46	2,569.18	20.00
61	J-29	0.10	70.83	1,158.79	50.00	70.36	1,364.21	20.00
62	J-30	0.10	71.69	1,158.78	50.00	-357.48	13.24	20.00
63	J-31	0.10	62.18	1,158.79	50.00	61.60	845.48	20.00
64	J-32	0.10	42.72	1,158.79	50.00	41.57	297.58	20.00
65	J-33	0.10	61.10	1,158.79	50.00	60.41	675.73	20.00
66	J-37	0.08	108.73	1,195.94	50.00	107.80	2,219.85	20.00
67	J-40	0.08	107.21	1,191.93	50.00	105.56	1,298.90	20.00
68	J-41	0.08	107.62	1,191.87	50.00	105.97	1,354.31	20.00
69	J-43	0.08	107.35	1,191.25	50.00	105.71	1,350.92	20.00
70	J-44	0.08	106.50	1,191.28	50.00	104.80	1,059.29	20.00
71	J-45	0.08	106.95	1,191.31	50.00	105.20	962.72	20.00
72	J-47	0.08	107.28	1,191.09	50.00	105.65	1,350.96	20.00
73	J-48	0.08	107.28	1,191.09	50.00	105.62	1,232.98	20.00
74	J-49	0.08	106.15	1,186.47	50.00	105.31	3,416.11	20.00
75	J-50	0.08	105.43	1,184.80	50.00	104.52	3,236.48	20.00
76	J-51	0.08	106.22	1,185.14	50.00	105.41	4,006.87	20.00

Village of Painted Post Fire Flows

		ID	Static Demand (gpm)	Static Pressure (psi)	Static Head (ft)	Fire-Flow Demand (gpm)	Residual Pressure (psi)	Hydrant Available Flow (gpm)	Hydrant Pressure at Available Flow (psi)
77		J-52	0.08	106.24	1,185.18	50.00	105.44	4,509.77	20.00
78		J-53	0.08	106.20	1,185.09	50.00	105.37	3,933.44	20.00
79		J-54	0.08	105.66	1,183.35	50.00	104.88	4,553.81	20.00
80		J-55	0.08	105.66	1,183.35	50.00	104.88	4,568.03	20.00
81		J-57	0.08	107.09	1,187.64	50.00	106.27	4,435.25	20.00
82		J-59	0.08	109.19	1,196.50	50.00	108.44	4,759.37	20.00
83		J-60	0.08	110.03	1,198.93	50.00	109.31	4,910.33	20.00
84		J-61	0.08	109.57	1,197.88	50.00	108.43	1,814.09	20.00
85		J-62	0.08	110.17	1,192.76	50.00	108.43	1,207.76	20.00
86		J-63	0.08	108.56	1,193.55	50.00	107.30	1,940.77	20.00
87		J-64	0.08	107.11	1,187.68	50.00	106.22	2,409.40	20.00
88		J-65	0.08	108.54	1,193.50	50.00	107.25	1,898.01	20.00
89		J-67	0.08	106.88	1,185.15	50.00	106.00	2,151.95	20.00
90		J-68	0.08	107.74	1,185.16	50.00	106.83	1,922.31	20.00
91		J-69	0.08	104.84	1,183.45	50.00	104.03	3,949.67	20.00
92		J-70	0.08	104.82	1,183.39	50.00	104.01	4,091.71	20.00
93		J-71	0.00	104.59	1,183.36	50.00	103.78	3,990.14	20.00
94		J-72	0.00	104.37	1,183.35	50.00	103.54	3,664.31	20.00
95		J-73	0.00	104.36	1,183.34	50.00	103.54	3,561.37	20.00
96		J-74	0.08	105.66	1,183.33	50.00	104.87	4,513.31	20.00
97		J-75	0.08	106.21	1,183.11	50.00	105.41	4,399.78	20.00
98		J-76	0.08	106.21	1,183.12	50.00	105.41	4,404.64	20.00
99		J-77	0.00	106.06	1,183.27	50.00	105.27	4,469.74	20.00
100		J-78	0.00	106.31	1,183.35	50.00	105.43	2,063.92	20.00
101		J-79	0.00	104.36	1,183.34	50.00	103.53	3,211.51	20.00
102		J-8	0.00	88.81	1,155.37	500.00	88.07	10,765.18	20.00
103		J-80	2.56	105.23	1,183.34	50.00	104.37	2,563.58	20.00
104		J-81	2.56	104.36	1,183.34	50.00	103.51	2,634.06	20.00
105		J-82	2.56	107.03	1,183.01	50.00	106.22	4,243.14	20.00
106		J-83	0.11	107.26	1,182.05	50.00	106.03	1,360.77	20.00
107		J-84	0.11	105.51	1,180.49	50.00	104.67	3,569.14	20.00
108		J-85	1.56	105.44	1,180.32	50.00	104.63	3,879.18	20.00
109		J-86	0.08	105.53	1,180.05	50.00	104.77	4,560.04	20.00
110		J-87	0.00	105.76	1,180.57	50.00	104.98	4,501.48	20.00
111		J-88	0.11	101.05	1,182.19	50.00	100.12	2,848.08	20.00
112		J-89	2.56	105.84	1,182.76	50.00	104.91	2,639.98	20.00
113		J-90	2.56	105.84	1,182.76	50.00	104.74	1,251.03	20.00
114		J-91	0.10	105.76	1,182.08	50.00	104.66	1,815.90	20.00
115		J-92	0.10	105.73	1,181.99	50.00	104.63	1,813.58	20.00
116		J-93	0.10	106.68	1,181.69	50.00	103.29	336.65	20.00
117		J-94	0.10	106.68	1,181.69	50.00	104.39	461.86	20.00
118		J-95	0.10	105.81	1,181.69	50.00	104.76	1,907.92	20.00
119		J-96	0.10	105.81	1,181.69	50.00	101.68	290.05	20.00
120		J-97	0.00	105.80	1,181.65	50.00	104.75	1,933.05	20.00
121		J-98	0.10	105.24	1,181.37	50.00	104.28	2,365.12	20.00
122		J-99	0.04	105.26	1,181.42	50.00	104.29	2,233.41	20.00
123		J10	0.10	106.25	1,181.69	50.00	102.50	311.83	20.00
124		J100	0.00	77.82	1,174.96	50.00	76.57	2,014.82	20.00
125		J102	0.00	105.69	1,181.17	50.00	104.76	2,847.97	20.00
126		J104	0.00	105.46	1,180.38	50.00	104.64	3,529.73	20.00
127		J106	0.00	105.48	1,180.43	50.00	104.65	3,450.84	20.00
128		J108	0.00	106.10	1,183.35	50.00	105.25	2,577.04	20.00
129		J118	0.04	105.71	1,181.46	50.00	104.72	2,096.92	20.00
130		J12	0.10	105.94	1,181.99	50.00	104.54	860.55	20.00
131		J120	0.01	105.71	1,181.46	50.00	104.72	2,165.68	20.00
132		J124	0.04	105.71	1,181.46	50.00	104.71	1,992.32	20.00
133		J126	0.04	103.12	1,181.46	50.00	102.11	1,864.16	20.00
134		J128	0.04	104.85	1,181.46	50.00	103.84	1,849.06	20.00
135		J132	0.04	107.45	1,181.47	50.00	106.45	2,163.01	20.00
136		J134	0.01	105.71	1,181.46	50.00	104.72	2,080.44	20.00
137		J136	0.04	105.71	1,181.46	50.00	104.72	2,094.44	20.00
138		J138	0.04	105.71	1,181.46	50.00	104.72	2,050.45	20.00
139		J14	0.00	104.18	1,182.91	50.00	103.35	3,966.25	20.00
140		J140	0.04	106.15	1,181.46	50.00	105.15	2,023.50	20.00
141		J142	0.04	103.98	1,181.46	50.00	102.95	1,684.79	20.00
142		J146	0.04	105.71	1,181.46	50.00	104.70	1,871.55	20.00
143		J148	0.04	105.71	1,181.46	50.00	104.72	2,091.65	20.00
144		J150	0.04	104.85	1,181.46	50.00	103.85	1,983.02	20.00
145		J152	0.04	105.72	1,181.48	50.00	104.69	1,743.92	20.00
146		J156	0.04	105.72	1,181.48	50.00	104.67	1,592.41	20.00
147		J158	0.04	105.72	1,181.48	50.00	104.68	1,683.08	20.00
148		J16	0.00	104.37	1,183.35	50.00	103.55	3,725.77	20.00
149		J162	0.01	104.42	1,181.48	50.00	103.39	1,738.33	20.00
150		J164	0.04	105.72	1,181.48	50.00	104.68	1,651.17	20.00
151		J166	0.01	108.80	1,181.60	50.00	107.77	2,013.16	20.00
152		J168	0.01	108.79	1,181.57	50.00	107.69	1,459.85	20.00

Village of Painted Post Fire Flows

	ID	Static Demand (gpm)	Static Pressure (psi)	Static Head (ft)	Fire-Flow Demand (gpm)	Residual Pressure (psi)	Hydrant Available Flow (gpm)	Hydrant Pressure at Available Flow (psi)
153	J170	0.04	107.02	1,181.48	50.00	105.99	1,790.81	20.00
154	J174	0.04	104.86	1,181.48	50.00	103.83	1,792.65	20.00
155	J176	0.43	104.86	1,181.48	50.00	103.82	1,682.90	20.00
156	J18	0.08	104.37	1,183.35	50.00	100.03	270.10	20.00
157	J180	0.04	104.86	1,181.48	50.00	103.83	1,740.31	20.00
158	J182	0.04	104.86	1,181.48	50.00	103.83	1,739.19	20.00
159	J184	0.04	102.69	1,181.48	50.00	101.66	1,686.27	20.00
160	J186	0.04	107.02	1,181.48	50.00	106.00	1,869.10	20.00
161	J190	0.23	106.15	1,181.48	50.00	105.14	1,880.66	20.00
162	J192	0.01	107.45	1,181.48	50.00	106.46	2,147.46	20.00
163	J194	0.01	106.19	1,181.57	50.00	105.17	2,009.15	20.00
164	J196	0.04	105.28	1,181.47	50.00	104.29	2,094.90	20.00
165	J198	0.04	105.28	1,181.47	50.00	104.24	1,646.78	20.00
166	J20	0.19	105.67	1,182.36	50.00	104.84	2,892.52	20.00
167	J200	0.04	100.31	1,181.46	50.00	99.30	1,893.19	20.00
168	J202	0.01	101.17	1,181.46	50.00	100.16	1,834.77	20.00
169	J204	0.04	101.39	1,181.46	50.00	100.37	1,793.45	20.00
170	J206	0.01	107.88	1,181.48	50.00	106.89	2,148.18	20.00
171	J208	0.01	106.59	1,181.48	50.00	105.58	1,968.46	20.00
172	J210	0.01	106.59	1,181.48	50.00	105.58	1,968.41	20.00
173	J212	0.01	107.92	1,181.57	50.00	106.80	1,335.46	20.00
174	J214	0.01	106.63	1,181.57	50.00	105.47	1,209.79	20.00
175	J216	0.01	105.29	1,181.48	50.00	104.26	1,717.99	20.00
176	J218	0.04	104.42	1,181.48	50.00	103.40	1,750.72	20.00
177	J22	0.08	105.67	1,182.36	50.00	104.87	4,417.52	20.00
178	J222	0.04	105.72	1,181.48	50.00	104.67	1,585.44	20.00
179	J224	0.01	105.71	1,181.46	50.00	104.71	1,954.65	20.00
180	J226	0.04	103.12	1,181.46	50.00	102.06	1,513.26	20.00
181	J228	0.04	105.72	1,181.48	50.00	104.68	1,690.46	20.00
182	J232	0.00	106.58	1,186.47	50.00	105.76	3,747.05	20.00
183	J236	0.00	106.59	1,187.49	50.00	105.49	1,887.11	20.00
184	J24	0.19	106.04	1,183.22	50.00	105.10	1,546.04	20.00
185	J246	0.00	107.39	1,191.34	50.00	106.54	4,237.76	20.00
186	J249	0.00	109.36	1,195.89	50.00	108.50	3,513.69	20.00
187	J251	0.00	109.40	1,195.98	50.00	108.58	4,018.14	20.00
188	J253	0.00	107.47	1,191.52	50.00	106.62	4,219.31	20.00
189	J255	0.00	107.46	1,191.51	50.00	106.61	4,238.99	20.00
190	J259	0.00	98.97	1,188.37	50.00	97.73	2,528.23	20.00
191	J26	0.08	106.04	1,183.22	50.00	105.20	2,895.78	20.00
192	J263	0.00	107.62	1,191.87	50.00	106.77	4,244.18	20.00
193	J267	0.00	107.47	1,191.52	50.00	106.61	3,856.89	20.00
194	J273	0.00	71.18	1,174.60	50.00	70.39	1,441.27	20.00
195	J275	0.00	105.72	1,181.48	50.00	104.69	1,751.10	20.00
196	J28	0.08	105.58	1,180.15	50.00	104.79	3,844.44	20.00
197	J30	0.00	105.14	1,180.15	50.00	104.26	1,634.46	20.00
198	J32	0.08	105.59	1,180.18	50.00	104.80	3,761.16	20.00
199	J34	0.08	105.59	1,180.18	50.00	104.78	2,725.55	20.00
200	J36	0.08	105.59	1,180.18	50.00	104.77	2,598.75	20.00
201	J38	0.08	105.59	1,180.18	50.00	104.76	2,311.59	20.00
202	J40	0.10	89.72	1,176.48	50.00	88.42	859.37	20.00
203	J42	0.08	108.98	1,196.01	50.00	108.17	4,123.82	20.00
204	J68	0.10	123.20	1,297.90	500.00	101.83	1,170.68	20.00
205	J70	0.10	66.75	1,174.37	50.00	65.97	1,169.08	20.00
206	J72	0.10	64.65	1,174.51	50.00	63.89	1,500.60	20.00
207	J74	0.10	105.46	1,181.37	50.00	104.33	1,185.07	20.00
208	J76	0.00	105.58	1,180.15	50.00	104.78	3,076.92	20.00
209	J82	0.08	109.19	1,193.50	50.00	107.86	1,537.25	20.00
210	J84	0.08	106.58	1,186.47	50.00	105.78	4,489.84	20.00
211	J92	0.08	104.82	1,183.39	50.00	104.01	4,076.57	20.00
212	J94	0.08	104.82	1,183.39	50.00	103.99	2,818.18	20.00