

Certification of Chemung, Steuben, and Schuyler County Levees: How the US Army Corps of Engineers Can Help July 23, 2024 - Meeting Summary

Representation from:

- US Army Corps of Engineers
- NYS Department of Environmental Conservation
- Federal Emergency Management Agency
- Southern Tier Central Regional Planning and Development Board
- Senator O’Mara’s Office
- Congressman Langworthy’s Office
- Steuben Co. Planning Department
- Steuben Co. Emergency Management Office
- Schuyler Co. Planning Department
- Chemung Co. Legislature
- Chemung Co. Emergency Management Office
- Chemung Co. Department of Public Works
- City of Corning
- City of Hornell
- Village of Painted Post
- Village of Canisteo
- Village of South Corning
- Village of Montour Falls
- Town of Southport

Terms & Acronyms

1% annual probability flood / 100-year flood	Flood event with a 1% probability of being equaled or exceeded in any given year; basis for the BFE
44 CFR 65.10	44 Code of Federal Regulations §65.10 - Mapping of areas protected by levee systems
Accredited levee	A levee system that FEMA has recognized as reducing the flood hazards posed by the 1% annual probability flood
BFE	Base Flood Elevation - Water surface elevation of the 1% annual probability (100-year) flood

BLE	Base Level Engineering - An automated hydrologic and hydraulic modeling approach that provides a baseline understanding of a community's flood risk
Certification	Levee documentation, certified by a licensed professional engineer, demonstrating that the levee meets all federal design, construction, maintenance, and operations standards to provide protection from the 1% annual probability flood, as specified in 44 Code of Federal Regulations §65.10
DEC	NYS Department of Environmental Conservation
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map – Map developed by FEMA that delineates a community's flood zones
Freeboard	Vertical distance from the BFE or design flood elevation to the top of a levee that provides a measure of safety
LAMP	Levee Analysis and Mapping Procedures - Procedures for showing the flood hazard associated with a non-accredited levee on a FIRM
NFIP	National Flood Insurance Program – Program includes flood hazard mapping, floodplain development standards, mitigation, and flood insurance
SFHA	Special Flood Hazard Area - The area that will be inundated by a 1% annual probability flood event; flood zone designation starts with an 'A'
USACE	US Army Corps of Engineers

Referenced Regulation

[44 CFR §65.10 - Mapping of areas protected by levee systems.](#)

Federal regulations that describe the information that FEMA needs in order to recognize the flood protection benefits of levees on Flood Insurance Rate Maps (FIRMs). If a community

wants a new FIRM to exclude levee-protected areas from the Special Flood Hazard Area, they must supply FEMA with certified design, operation, and maintenance documentation demonstrating that a levee system provides protection from the 1% annual probability flood at the time a flood risk study or restudy is conducted.¹

The Levee Systems

Levees and floodwalls in Steuben, Chemung, and Schuyler Counties are shown on an online mapper at: <https://arcg.is/0yOCKm>.

- 55 miles of levees and floodwalls.
- FEMA has initiated a LAMP process for levees in Chemung and Steuben Counties, including a preliminary assessment of the levee heights based on existing levee crest data and new BLE flood hazard mapping. Potential problem areas should be verified.
- Approximately 4.5 miles of levee may be below the Base Flood Elevation. If this is accurate, these parts of the levee systems cannot be accredited as providing protection from the 1% annual probability flood.
- Approximately 10 miles of levee appear to be above the BFE but may not have sufficient freeboard to meet the requirements for accreditation specified in 44 CFR § 65.10.
- 50 miles of levee are accredited on the effective FIRMs (developed in the 1980s). We would like certify and accredit these levees prior to completion of FEMA's new mapping project.
- More than 30 miles of levee with no currently-identified deficiencies; analysis is needed to confirm this and any deficiencies must be corrected prior to accreditation.
- When Montour Falls went through the process a few years ago, they conducted a scoping study 2 miles of levee, for which the cost estimate for certification was approximately \$280,000. Chemung County spent \$1.3 million to repair and certify the 1-mile Ithaca Road Levee in Horseheads. These examples and those from other parts of the country suggest that the total cost to certify 50 miles of levee is likely to be \$10-15 million. Additional costs would be incurred to increase the protection level of levees that are not high enough and correcting any other deficiencies.
- Because the Addison levees have never been accredited, the village is a local example of development challenges in a community protected by non-accredited levees.

¹ More information can be found in the FEMA fact sheet, "Meeting the Criteria for Accrediting Levee Systems on Flood Insurance Rate Maps: How-To Guide for Floodplain Managers and Engineers," at https://www.mvk.usace.army.mil/Portals/58/docs/LSAC/FEMA_Meeting_the_Criteria.pdf or in the Code of Federal Regulations at <https://www.ecfr.gov/current/title-44/chapter-I/subchapter-B/part-65/section-65.10>.

Discussion Questions

Why is FEMA asking for new data about the levees? Isn't the USACE construction and inspection information sufficient?

The USACE is sharing available data. But we must remember that many of the levees in our systems are decades old - 70, 80, 100+ years. It's not that these data are not accepted or were not sufficient at the time of construction. However, conditions may have changed and the levee design and evaluation standards are improving. A levee is not going to stay perfect over the years; it can degrade due to settling or sedimentation; development may have changed the hydrology and hydraulics. The current condition of the levees will be evaluated based on available data and the criteria specified in 44 CFR 65.10 to determine what additional or updated information is needed.

Is it worth it to certify and improve the levees or just accept the risk and possible repetitive losses?

Improving the levees is worth it for the safety of your community and the future of economic development.

If the levees are not accredited, protected areas could be mapped as high-hazard floodplains (Zone AE), where development would be subject to floodplain development standards (elevation or floodproofing to protect from the 1% annual probability flood) and mandatory flood insurance requirements (for federally-backed mortgages).

Is this process just a way for FEMA to get more people into the flood insurance program?

Flood insurance is required for buildings with federally-backed mortgages in the 1% annual probability floodplain. However, FEMA asserts that they are not trying to put people in the mapped floodplain just to get flood insurance (a program that is federally subsidized). They are trying to provide good information and help people understand their flood risk. Areas behind a levee are not totally protected.

Is it legal for a municipality to bond to do work on levees owned by the Federal government and maintained by the State?

Legislator Sweet suggested consulting a bonding attorney.

Why was this process dropped several years ago? What's changed since then?

FEMA initiated a floodplain mapping project for Chemung County in 2010 and later expanded the scope to parts of Steuben and Schuyler Counties before terminating the project in 2014. The prior mapping project was dropped because of community pushback on how to deal with the levee issues. Our region's maps are now 10 years older. The LAMP process intends to identify current risks and deficiencies, and what that might mean for a potential map update.

Has the freeboard standard changed since the levees were designed and constructed?

At the time when the levees were constructed, the design height was typically based on the record storms at the time, with two feet of freeboard. The freeboard standard in CFR 65.10 is that the levee be three feet higher than the base flood elevation. So they were designed based on a safety standard and available data; and they are now accreditation based on a modeled flood used by the NFIP as an insurance standard.

What is needed for accreditation?

Certified documentation addressing the following issues:

- Is the levee high enough?
- Can the levee withstand erosion?
- Foundation and embankment stability: Is the levee stable? Is there potential for water to seep underneath the levee and destabilize it? Existing data about soil conditions within and under the levee may be adequate for this assessment. However, because of the age of the levees, it may be necessary to collect and analyze new samples. There is local concern about the impacts of drilling holes into the levee, as well as the high cost.
- Interior Drainage Plan: Is the rain that falls on the dry side of the levee managed appropriately? When not in flood, are flap gates and through-structures conveying water to the river? When the river is too high for interior drainage to flow into the river, how is that water managed? Because conditions have changed since the levees were constructed, existing Interior Drainage Plans should be updated. The USACE does not do this.
- Operations and Maintenance (O&M) Plan: The USACE stated that the existing O&M plans are probably still good because they are amended as warranted.
- Emergency Response Plan: The DEC emergency plan is probably adequate for accreditation. It is recommended that community-specific emergency action plans dovetail into DEC's plan to ensure coverage at all levels of government.

What can USACE do?

The USACE uses a semi-quantitative risk assessment process, which may lead to a recommendation to accredit the system. The USACE is responsible for conducting this certification for the levees that they maintain (Hornell, Cutler Creek in Corning/Painted Post, and Purdy Creek in Canisteo). For levees maintained by DEC or the community, there is a 50% local cost share. To start the process, a local sponsor can submit a request letter. A sample letter will be provided.

For levees enrolled in the Public Law 84-99 (most levees in the region, but not the Gang Mills levee), the USACE has the authority to repair and/or rehabilitate a levee that is damaged by a major flood. For federally-constructed levees, repairs under the PL 84-99 program are 100% federally funded; for other levees enrolled in the program there is an 80/20 cost share. This program only applies to damage caused by a flood emergency. It cannot be used for maintenance or to correct deficiencies.

A USACE project to address levee deficiencies or inadequate levee height would require Congressional authorization in the Water Resources Development Act.

What can FEMA do?

FEMA's ongoing LAMP process will help communities understand potential risks and deficiencies associated with their levees. Some participants expressed an expectation that FEMA will review the existing data and provide guidance about which 44 CFR 65.10 requirements are met and which require additional information.

When maps are updated, FEMA accredits levees based on the certified data provided to them by others. They make the maps but do not evaluate levees.

What can DEC do?

DEC operates and maintains many of the levees, but has not budgeted for certification.

Timeline

- The USACE has provided FEMA with existing levee data.
- FEMA expects to have a draft LAMP report in Fall 2024 for review by municipalities. They plan to schedule meetings to review this information in September.
- Municipalities can utilize the information presented in this draft document to identify risks and deficiencies, and then seek funding for engineering analyses and resolution of identified issues.
- FEMA has not yet secured funding for a mapping project. Once it is funded, the project will take several years to complete.
- Local jurisdictions can use this time to assess/certify the levees and resolve any identified issues so that they can be accredited and shown to provide flood protection on the new FEMA mapping.

Possible Funding Avenues

FEMA Hazard Mitigation Assistance (HMA) Grants

- **Building Resilient Infrastructure and Communities (BRIC)**
<https://www.grants.gov/search-results-detail/350563>
 - Total Available: \$1B
 - Cost Share: 10-25% (75-90% federal)
 - Grant Cycle: Annual - Opens in Fall, deadline in late Winter
- **Flood Mitigation Assistance Program (FMA)**
<https://www.grants.gov/search-results-detail/350564>
 - Total Available: \$800m
 - Cost Share: 10-25% (75-90% federal)
 - Grant Cycle: Annual - Opens in Fall, deadline in late Winter
- **Hazard Mitigation Grant Program (HMGP)**
 - Total Available: Depends on the amount of disaster assistance
 - Cost Share: Up to 25% (Min. 75% federal)
 - Grant Cycle: After federally-declared disaster

Eligible Projects:

- Capability- and capacity-building activities, including project scoping and planning-related activities.
- Cost-effective hazard mitigation projects designed to increase resilience and public safety, reduce injuries and loss of life, and reduce damage and destruction to property, critical service, facilities, and infrastructure (incl. natural systems) from natural hazards.

Discussion:

Conversation during the meeting seemed to indicate this would be a feasible avenue for requesting funding support for interior drainage analysis, increasing levee height, or addressing other deficiencies. FEMA representative, Mike Foley, indicated that FEMA's LAMP plan and USACE's analysis could be sufficient to satisfy a BRIC application; recommends tapping into USACE expertise to cost-out the project. A decent amount of engineering analysis would be expected for a project that increases the protection level of a levee. Recommended applying for the whole project (not a planning grant), with the expectation that FEMA could approve it as a phased project, with initial funding for the engineering design, followed by project funding.

New York State Mitigation Revolving Loan Fund

<https://www.dhSES.ny.gov/hazard-mitigation>

Revolving loan program to support mitigation projects at the local government level and increase resilience to natural hazards and climate change. Loans will be made at an interest rate of 1 percent or less.

Eligible Projects:

Proposed projects must be allowable under *FEMA Hazard Mitigation Guidance* (<https://www.fema.gov/grants/mitigation/hazard-mitigation-assistance-guidance>). DHSES has established the following set of priorities:

1. Disadvantaged, underserved, and Socially Vulnerable (as defined below) areas proposing projects to foster resilience.
2. Non-federal cost share for existing hazard mitigation projects.
3. Mitigation projects that address the following:
 1. Localized flood risk reduction
 2. Soil stabilization
 3. Infrastructure Retrofit
 4. Generators
4. Projects not eligible under other HMA grants due to not passing a benefit cost analysis.

Climate Smart Communities (CSC)

<https://dec.ny.gov/sites/default/files/2024-05/cscgrfa.pdf>

- Funding Source: NYSDEC

- Total Available: \$21.5m
- Cost Share: 50/50; projects implemented within a disadvantaged community are 80/20
- Grant Cycle: Annual – Opens in Spring, deadline in mid-Summer

Potentially Relevant Eligible Projects:

- Implementation of climate adaptation projects - Projects designed to provide a meaningful reduction of risk to residents, infrastructure, and/or natural resources from hazards projected to become more severe or frequent due to climate change. Including, but not limited to:
 - Increasing or preserving natural resilience to decrease vulnerability to effects of climate change and improve or facilitate conservation, management, and/or restoration of natural floodplain areas and/or wetland systems
 - Flood risk reduction, such as via strategic relocation or retrofitting of climate-vulnerable critical municipal facilities or infrastructure to reduce future climate change-induced risks
 - Replacing, right-sizing, or removing flow barriers
- Climate vulnerability assessment – Performing a comprehensive assessment of local vulnerabilities and risks to identify and prioritize actions to reduce risks to the community. The Village of Montour Falls applied for funding to prepare a “*Certification Evaluation and Scoping Study Report*” for their levee systems.

Water Resources Development Act (WRDA)

- Source: USACE

A comprehensive legislative package that provides for the conservation and development of water and related resources. It authorizes the Secretary of the Army to conduct projects and research activities that can lead to the improvement of rivers and harbors of the United States. The WRDA is strictly authorizing legislation; it **does not** include funding. Funding of WRDA-authorized studies and projects is provided separately through the annual Energy and Water Development appropriations process and, at times, through supplemental appropriations.

Reference Materials

- Levee Information Document: https://www.stcplanning.org/wp-content/uploads/2024/05/STC_Levee_Certification_Info_June2024.pdf
- Janet’s Floodplain Maps Training Slides: https://www.stcplanning.org/wp-content/uploads/2024/05/FEMAFloodplainMaps_May2024.pdf
- Interactive Levee Map: <https://www.arcgis.com/home/item.html?id=e14c4694452e444fa29e87c672869c86>