

Update and Clarification of Floodplain Development Standards

Recommendations for the Town of Cohocton

General Comments

The 2002 Zoning Law for the Town of Cohocton establishes a Flood Plain Overlay Zone (FP) that corresponds to the 100-year floodplain identified on the Flood Insurance Rate Maps prepared by FEMA. Special requirements for development within this overlay zone are set forth in Flood Damage Prevention, Town of Cohocton Local Law No. 1 of 1987. Since enactment of these floodplain management standards, New York State has revised the Model Local Law for Flood Damage Prevention and incorporated floodplain management requirements into the Uniform Fire Prevention and Building Code. It is recommended that the Town adopt the most recent version of the model law (attached), which contains language that is consistent with the Uniform Code and complies with the floodplain management requirements of the National Flood Insurance Program (NFIP) contained in federal regulations 44 CFR 60.3 through 44 CFR 60.6.

The following recommendations are optional changes to the state model ordinance that would enable improved understanding of the federally-established standards for floodplain development and facilitate enforcement. These suggestions were prepared by Southern Tier Central Regional Planning and Development Board based on FEMA documents and model ordinances of other states. Should the town decide to utilize any of these suggestions, the proposed changes should be submitted to NYSDEC so that they can review the final language and assure that it is compliant with FEMA's regulations. Recommended changes are included as tracked changes in the attached model ordinance.

Letters of Map Change

Explanation

FEMA issues Letters of Map Revision (LOMRs) and Letters of Map Amendment (LOMAs) to change or clarify information on the Flood Insurance Rate Maps. This information should be included as part of the legal map information that forms the basis of community floodplain management regulations.

Proposed language

Revise the final paragraph of Section 3.2, "Basis for Establishing the Areas of Special Flood Hazard," as follows (proposed changes in bold):

- 3.2 The above documents, **together with any Letters of Map Amendment and Letters of Map Revision issued by the Federal Emergency Management Agency**, are hereby adopted and declared to be a part of this Local Law. **These maps and documents** ~~The Flood Insurance Study and/or maps~~ are on file at:

Authority to Regulate Counties, School Districts, and Public Improvement Districts

Explanation

Article 36 of the New York State Environmental Conservation Law gives municipalities the power to regulate development projects conducted in the floodplain by counties, school districts, and public improvement districts. However, because municipalities do not generally have control over actions taken by a higher level of government, they may fail to require municipal floodplain development permits for such projects. The following recommended language clarifies this.

Note: Local floodplain management authority does not apply to state and federal projects. State agencies evaluate flood hazards in connection with state-owned and state-financed buildings, roads and other facilities, the disposition of state land and properties, the administration of state and state-assisted planning programs and the preparation and administration of state building, sanitary and other pertinent codes. Federal agencies make flood risk management decisions for federal actions based on criteria in Executive Order 11988 (as amended by Executive Order 13690) and the Federal Flood Risk Management Standard.

Proposed language

Add a new paragraph to Section 4.2-1, "Purpose" (in Section 4.2, "The Floodplain Development Permit"):

4.2-1 ...

The requirements for floodplain development permits apply to projects undertaken by any private entity, county, city, town, village, school district, or public improvement district. Development activities by the Town of Cohocton shall comply with the standards specified in this local law. Federal actions and New York State actions are not subject to regulation under this local law.

Determination of Floodplain Boundaries

Explanation

Determination of whether proposed development is in the regulated floodplain is often difficult, particularly in areas with paper Flood Insurance Rate Maps that provide few landmarks. Some floodplain ordinances adopted by NYS communities in the 1980's include the following language, which explicitly gave the local administrator the authority to make this determination (in Section 4.3-5, "Interpretation of FHBM, FIRM, or FBFM Boundaries"): "The local administrator shall have the authority to make interpretations when there appears to be a conflict between the limits of the federally identified area of special flood hazard and actual field conditions." This is not included in the current model ordinance. The following proposal clarifies this authority and also allows the local administrator to require survey information to assist with this determination. In addition, it clarifies the treatment of development projects that are located in more than one flood zone.

Proposed language

Revise the last sentence of the first paragraph of Section 4.2-1, "Purpose" (in Section 4.2, "The Floodplain Development Permit") to read as follows (proposed new language in bold):

4.2-1 ...***Application for a permit shall be made on forms furnished by the Local Administrator and may include, but not be limited to: plans, in duplicate, drawn to scale and showing: the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities,***

and the location of the foregoing; and the boundaries of the area of special flood hazard and regulatory floodway in relation to the above features.

Add a new paragraph to Section 4.3, "Application for a Permit:"

4.3 (8) Documentation by a licensed land surveyor or professional engineer of Flood Insurance Rate Map features (flood zone, floodway, and base flood elevation) at the location of the proposed development, if required by the Local Administrator.

Add two new paragraphs to the beginning of Section 4.4-1, "Permit Application Review" (and adjust subsequent paragraph numbers):

4.4-1 (1) Determine whether any portion of the proposed development is located within an area of special flood hazard or a regulatory floodway.

4.4-1 (2) If the site for any new or substantially improved structure is partially or completely within Zones A1-A30, AE, AH, or Zone A if base flood elevation data are available, determine the base flood elevation applicable to that structure.

Add the following sentence to the introductory paragraph of Section 5.1, "General Standards:"

5.1 ...When the proposed development is located in multiple flood zones or in an area where the base flood elevation changes, the flood protection requirements shall be based on the flood zone or base flood elevation that results in the most stringent requirements.

Base Flood Elevations Developed for Large Projects

Explanation

For some subdivisions or development proposals in Zone A, when and no base flood elevations are available from an authoritative source, the applicant is required to provide base flood elevations. This requirement is stated in the model law, but could be clarified based on FEMA guidance (FEMA 265, "Managing Floodplain Development in Approximate Zone A Areas, A Guide for Obtaining and Developing Base (100-Year) Flood Elevations").

Proposed language for retaining newly-developed base flood elevations

Revise Paragraph (7) of Section 4.3, "Application for a Permit" to read as follows (proposed new language in bold):

4.3 (7) In Zone A, when no base flood elevation data are available from other sources, base flood elevation data developed using detailed methodologies shall be provided by the permit applicant for subdivision proposals and other proposed developments (including proposals for manufactured home and recreational vehicle parks and subdivisions) that are greater than either 50 lots or 5 acres if any development sites are located within an area of special flood hazard.

Elevation of Structures when Base Flood Elevations Are Not Available

Explanation

In regulated floodplains for which there are no Base Flood Elevations, the New York State model law and building code require that the top of the lowest floor be three or more feet above highest adjacent grade. If any fill or grading takes place during construction, it may be difficult to

document compliance relative to natural grade. The “Construction Stage” information in the model law specifies how to certify lowest floor elevations, but omits the often-confusing cases in which there is no Base Flood Elevation. The following proposed language includes the recommendation that a surveyor document elevations prior to fill or grading and then certifies as-built elevations relative to the highest adjacent natural grade.

Proposed language

Add a new paragraph to Section 4.4-4, “Construction Stage:”

4.4-4 (2) For new and substantially improved structures in Zone AO and Zone A without base flood elevation data, the Local Administrator may require documentation of natural grade at the building site prior to any grading or placement of fill. Upon placement of the lowest floor, the Local Administrator shall either (i) document the height of the top of the lowest floor relative to the highest adjacent natural grade or (ii) require certification of this height by a licensed land surveyor or professional engineer.

Encroachments

Explanation

Section 5.1-2 of the model law deals with encroachments in riverine floodplains and the need to prevent increases in the height of flooding. However, no definition of encroachment is provided. FEMA guidance indicates that the community may make judgements about whether minor projects require an encroachment analysis:

“Minor projects: Some projects are too small to warrant an engineering study and the certification. Many of these can be determined using logic and common sense: a sign post or telephone pole will not block flood flows. Barbed wire farm fences that will be pushed over or ripped out early in the flood may also be permitted without a certification; however, larger more massive fences could be an obstruction to flood flows and may require an engineering study and certification. A driveway, road or parking lot at grade (without any filling) won’t cause an obstruction either.” (FEMA 480, Floodplain Management Requirements: A Study Guide and Desk Reference for Local Officials, page 5-23).

In order to recognize that not all development constitutes an encroachment and assist with this judgement, a definition of encroachment is proposed and the requirement for engineering certification is clarified. It is also recommended that this encroachment analysis be referenced in Section 4.0, “Administration.”

Proposed language

Add a definition for “Encroachment” to Section 2.0, “Definitions:”

“Encroachment” means any development in a riverine floodplain with the potential to obstruct or divert flood flows.

Add the required encroachment analysis to Section 4.3, “Application for a Permit” and Section 4.4-8, “Information to Be Retained:”

4.3 (9) A technical analysis of the impact of any proposed encroachment on the base flood elevation or the information and fees required for a map revision, as specified in Section 5.1-2, ENCROACHMENTS.

4.4-8 (7) Documentation demonstrating compliance with Section 5.1-2, ENCROACHMENTS.

Revise paragraphs (1) and (2) of Section 5.1-2, "Encroachments" (proposed new language in bold):

- 5.1-2 (1) *Within Zones A1-A30 and AE, on streams without a regulatory floodway, no new construction, substantial improvements or other development **that constitutes an encroachment** (including fill) shall be permitted unless:*
- 5.1-2 (2) *On streams with a regulatory floodway, as shown on the Flood Boundary and Floodway Map or the Flood Insurance Rate Map adopted in Section 3.2, no new construction, substantial improvements or other development **that constitutes an encroachment** in the floodway (including fill) shall be permitted unless:*

Encroachments in Zone A (approximate floodplains without floodways)

Explanation

The regulatory floodway is the channel of a stream and the adjacent area that must be kept free from encroachments in order to convey floodwater. However, for streams with Approximate Zone A floodplains (where no base flood elevations were determined), Flood Insurance Rate Maps do not show a floodway and the "Encroachments" section of the current NYS model law does not reference this flood zone. However, fill, berms, or other encroachments in these areas can affect the flood carrying capacity of the stream, contribute to channel instability, and cause damage to other properties. Some floodplain ordinances adopted by NYS communities in the 1980's address this issue with the following language: "All proposed development in riverine situations where no flood elevation data is available (unnumbered A Zones) shall be analyzed to determine the effects on the flood carrying capacity of the area of special flood hazards set forth in section 4.3-1(3), Permit Review. This may require the submission of additional technical data to assist in the determination." Enforcement of this requirement has been an effective tool for preventing the placement of fill in locations where it could adversely affect the stream system. The following proposed language restores encroachment language for Zone A.

Proposed language

Add a new paragraph to Section 5.1-2, "Encroachments:"

- 5.1-2 (3) **Within Zone A in riverine areas, all permit applications for new construction, substantial improvements or other development that constitutes an encroachment (including fill) shall be reviewed as set forth in Section 4.4-1(5), Permit Application Review, to determine the effects of the encroachment on the flood carrying capacity of the stream. The Local Administrator may require submission of additional technical analysis and data necessary to complete the determination.**

Alteration of Existing Structures

Explanation

The following recommendations are intended to clarify how the floodplain development standards apply to improvements to existing structures.

When a building is substantially improved or substantially damaged (meaning that the cost of the improvement or damage exceeds 50% of the market value of the structure), federal

standards require that the entire structure be brought into compliance with current floodplain development standards. However, when the substantial **improvement** is an addition, it may not be clear to the Local Administrator whether it is acceptable to only require elevation of the new portion of the building.

In addition, improvements that are less than substantial should be done in a manner that is “reasonably safe from flooding.”

Proposed language

Add the following introductory statements to Section 5.2, “Standards for All Structures:”

- 5.2 ...**Any alteration, repair, reconstruction, addition, or improvements to an existing structure that constitutes substantial improvement shall require that the entire structure comply with the requirements for substantially improved structures. Any alteration, repair, reconstruction, or improvements to an existing structure that does not constitute new construction or a substantial improvement, shall be elevated and/or floodproofed to the greatest extent practical.**

Enclosed Areas Below the Lowest Floor

Explanation

FEMA has issued guidance relating to the standards for enclosed areas below the lowest floor, including attached garages. The following recommendations include additional requirements from this guidance, as well as clarifications.

Proposed language

Edit paragraph (3) of Section 5.2-2, “Construction Materials and Methods,” as follows (additions and deletions in bold):

- 5.2-2 (3) *For enclosed areas below the lowest floor of a structure within Zones A1-A30, AE, AO or A, new and substantially improved structures ~~shall may~~ have fully enclosed areas, **including crawl spaces or attached garages**, below the lowest floor that are useable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding, designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of flood waters. Designs for meeting this requirement must either be certified by a licensed professional engineer or architect or meet or exceed the following minimum criteria:*

*(i) a minimum of two openings **at least three inches in diameter on different sides of each enclosed area** having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding; and*

(ii) the bottom of all such openings no higher than one foot above the grade.

*Openings may be equipped with louvers, valves, screens or other coverings or devices provided they permit the automatic entry and exit of floodwaters **without intervention and that any resulting obstruction to flow be accounted for when determining the net area of the openings. Openings may be installed in doors or windows; however, doors and windows without installed***

openings do not meet the requirements of this section. Enclosed areas sub-grade on all sides are considered basements and are not permitted.

Utilities

Proposed language

Add the following clarifying language to Section 5.2-3, "Utilities" (proposed changes in bold):

- 5.2-3 (1) *New and replacement electrical equipment, heating, ventilating, air conditioning, plumbing connections, **hot water heaters**, and other service equipment **(including ductwork)** shall be located at least two feet above the base flood elevation, or at least three feet above the highest adjacent grade in a Zone A without an available base flood elevation, or be designed to prevent water from entering and accumulating within the components during a flood and to resist hydrostatic and hydrodynamic loads and stresses. Electrical wiring and outlets, switches, junction boxes and panels shall be elevated or designed to prevent water from entering and accumulating within the components unless they conform to the appropriate provisions of the electrical part of the Building Code of New York State or the Residential Code of New York State for location of such items in wet locations. **The Local Administrator may require certification of utility floodproofing from a licensed professional engineer or architect;***
- 5.2-3 (2) *New and replacement water supply systems shall be designed **and constructed** to minimize or eliminate infiltration of flood waters into the system;*
- 5.2-3 (3) *New and replacement sanitary sewage systems shall be designed **and constructed** to minimize or eliminate infiltration of flood waters **into the systems and discharges from the systems into flood waters**. Sanitary sewer and storm drainage systems for buildings that have openings below the base flood elevation shall be provided with automatic backflow valves or other automatic backflow devices that are installed in each discharge line passing through a building's exterior wall; and,*

Dry Floodproofing of Non-Residential Structures

Explanation

Non-residential structures can be protected from flood damage by elevation or can be "floodproofed so that the structure is watertight below two feet above the base flood elevation..." This use of the word "floodproof" can be confusing because the term can also be used to describe wet floodproofing techniques, in which flood resistant measures and materials are used in an area that is subject to flooding. The definition of "floodproofing" in the NYS model law encompasses both wet and dry floodproofing techniques and the word is used to describe protection of utilities as well as dry floodproofing of non-residential structures. The following language is proposed in order to clarify that the floodproofing allowed for non-residential structures must be "dry floodproofing."

Proposed language

Add to the definition of "Floodproofing" in Section 2.0 to read as follows (proposed new language in bold):

"Floodproofing" means any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real

*estate or improved real property, water and sanitary facilities, structures and their contents. **This term includes both wet floodproofing, in which water resistant measures and materials are used in an area subject to flooding, and dry floodproofing, in which a structure is water tight with walls substantially impermeable to the passage of water.***

Add the word “dry” before floodproof in paragraphs (2) and (4) of Section 4.3, “Application for a Permit,” paragraph (1) of Section 4.4-4, “Construction Stage,” and paragraphs (1)(ii) and (3) of Section 5.4 “Non-Residential Structures.”

- 4.3 (2) *The proposed elevation, in relation to mean sea level, to which any new or substantially improved non-residential structure will be **dry** floodproofed. Upon completion of the floodproofed portion of the structure, the permittee shall submit to the Local Administrator the as-built floodproofed elevation, certified by a professional engineer or surveyor.*
- 4.3 (4) *A certificate from a licensed professional engineer or architect that any non-residential floodproofed structure will meet the **dry** floodproofing criteria in Section 5.4, NON-RESIDENTIAL STRUCTURES.*
- 4.4-4 (1) *In Zones A1-A30, AE and AH, and also Zone A if base flood elevation data are available, upon placement of the lowest floor or completion of **dry** floodproofing of a new or substantially improved structure, obtain from the permit holder a certification of the as-built elevation of the lowest floor or floodproofed elevation, in relation to mean sea level...*
- 5.4 (1)(ii) *be **dry** floodproofed so that the structure is watertight below two feet above the base flood elevation, including attendant utility and sanitary facilities, with walls substantially impermeable to the passage of water...*
- 5.4 (3) *If the structure is to be **dry** floodproofed, a licensed professional engineer or architect shall develop and/or review structural design, specifications, and plans for construction...*

Model Floodplain Development Application Form

It is recommended that the Town use the attached Floodplain Development Permit Application, which includes additions and clarifications to the DEC form included with the model ordinance.