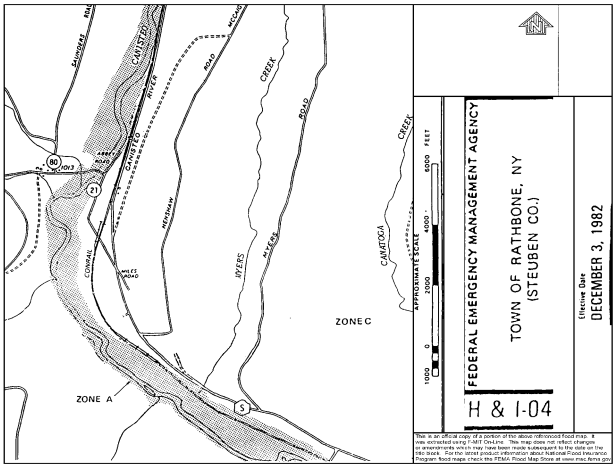
Floodplain Development in A Zones without Base Flood Elevations

A Zones without Base Flood Elevations are those areas where floodplain boundaries have been established using approximate techniques without conducting detailed hydrologic and hydraulic studies. These 100-year flood zones are shown on flood hazard maps as "unnumbered A zones" (the letter "A" with no letter or number after it).

Limited Flood Hazard Data

Because detailed floodplain studies are expensive, the floodplains in many rural areas were estimated using approximate techniques. The resulting flood hazard maps delineate the boundaries for the "Special Flood Hazard Area" (100-year floodplain) within which development must comply with floodplain development standards. However, no information is provided regarding the Base Flood Elevation (BFE; anticipated depth of flooding). And no Regulatory Floodway (area reserved to discharge flood flows) is delineated. In the absence of detailed flood hazard information, ***it is still necessary to ensure that development is reasonably safe from flood damage.***



Use of Other Flood Data

When development is proposed in an A Zone without BFEs, the municipality must "obtain, review and reasonably utilize any base flood elevation and floodway data available from a Federal, State, or other source..." [44 CFR 60.3 (b) (4)]. Information from other sources should be used as the basis for regulating floodplain development if it: (1) reasonably reflects flooding conditions expected during the base flood (which has a 1% probability of being equaled or exceeded in any given year, i.e. the 100-year flood), (2) is not known to be technically incorrect, and (3) represents the best available data. If authoritative BFE and floodway data are not available, historical flood heights or other information can provide guidance.

Possible sources of flood data include:

- Flood Hazard Maps: Preliminary or advisory flood hazard maps can be used for floodplain management prior to being finalized or adopted (unless the technical validity is being questioned). Near a municipal boundary, flood elevations developed for the neighboring community may be applicable.
- Highway Departments: If the area is near a bridge or other highway structure, a flood study may have been done to size the structure.
- NYS Department of Environmental Conservation (DEC): The DEC Regional Floodplain Management Coordinator may be aware of available flood data or information.
- Other Agencies: Flood studies, reports, or other data may be available from agencies that have worked with the stream or watershed, such as U.S. Army Corps of Engineers, U.S. Geological Survey, USDA Natural Resources Conservation Service, or the County Soil and Water Conservation District.
- Applicant: The applicant must provide Base Flood Elevations (developed using a "detailed method") for any proposed development that is greater than either 50 lots or 5 acres if any part of the developed area is in Zone A without a Based Flood Elevation. For smaller projects, a BFE may be requested.
- Municipality: The municipality may develop Base Flood Elevation and/or Floodway data for regulating development in Zone A. This is advisable if multiple applications are anticipated. "Simplified methods" for determining BFEs can be sufficient for floodplain management purposes and are less costly than the "detailed methods" required for flood hazard map revisions and insurance ratings.
- Historical Sources: The municipality should also consult with neighbors, staff, or others who may have knowledge of historical flood heights at or near the proposed development.

Determining the Base Flood Elevation (BFE)

The "Base Flood Elevation" is the calculated water height that has a 1% probability of being equaled or exceeded in any given year (the 100-year flood). The Federal Emergency Management Agency (FEMA) provides guidance for developing BFEs using "detailed methods" (similar to those used for flood hazard map development) and "simplified methods" (that can be used to mange development in isolated areas). When a developer is required to provide BFEs for a large project, a "detailed method" is required.

Flood Protection Level

In Zone A, the level to which development should be protected from flood damage (by elevation or other means appropriate to the type of development) depends on the available information:

- Two or more feet above BFE – required if BFE is available from a reliable source or has been developed;
- Two or more feet above historic flood levels – recommended if prior flood depths exceeded one foot; or
- Three or more feet above the highest adjacent grade – required if BFE is not available. If circumstances suggest that this may not provide adequate flood protection, the municipality can require the developer to determine the BFE (since the project must be consistent with the need to minimize flood damage.)

Flood Insurance Consideration: *If the elevation of a building in an Approximate A Zone is documented on an Elevation Certificate (generally required by the community to confirm compliance with development standards), the cost of flood insurance is rated in one of the following ways:*

- *If there is no BFE, the building is rated based on its height above the highest adjacent grade.*
- *If the community provides a locally-developed BFE that was determined using detailed methods, the building is rated based on its height relative to that BFE.*

The ***insurance costs will generally be lower for a building with the first floor two feet above the BFE*** *(minimum standard if the BFE is available) than for a building with the first floor three feet above grade (minimum standard without a BFE). It may be more cost effective in the long run to hire an engineer to develop a BFE, than to insure a building constructed without that information.*

Proposed Development Shall Not Result in Physical Damage to Any Other Property

Although floodway delineations are typically not available in Zone A, the concept of reserving room for flood flows still applies. A floodplain permit cannot be issued for development that would result in physical damage to any other property. If the potential for damage exists (due to increased flood heights, stream bank erosion, increased flood velocities, etc.), the municipality can require a technical analysis by a licensed professional engineer to facilitate this determination. This analysis may be warranted for any project (bridge, berm, building, fill, etc.) that encroaches on the channel or obstructs flood flows.

Locate Development Outside of the Floodplain

Because A Zones without Base Flood Elevations are usually located in rural areas or along small streams, it is often feasible to locate development outside of the mapped floodplain. This is the preferred option because it protects development from flood hazards, reduces the risk of damage from streambank erosion, preserves natural floodplain functions, and protects occupants and users who might otherwise require evacuation during a flood. It may also save on the cost of a flood study (for larger developments) and the subsequent cost of flood insurance for building owners.

Additional Resources

- *Managing Floodplain Development in Approximate Zone A Areas: A Guide for Obtaining and Developing Base (100-Year) Flood Elevations*, FEMA 265 (1995), https://www.fema.gov/media-library-data/20130726-1545-20490-4110/frm_zna.pdf, provides engineering guidelines for determining Base Flood Elevations using simplified and detailed methods.
- Software for Flood Mapping, FEMA webpage with links to Quick-2 hydraulic analysis program and other resources for computing flood elevations, https://www.fema.gov/flood-maps/software.