



Using Base Level Engineering Data to Submit a Letter of Map Amendment or Letter of Map Revision Based on Fill

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FEMA

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What Are LOMAs and LOMR-Fs?

FEMA uses scientifically and technically sound methods for flood studies. The agency is also careful to accurately apply the results of these studies on Flood Insurance Rate Maps (FIRMs). Because of scale limitations, however, FIRMs cannot reflect every rise and fall in terrain. Some small areas of high ground may be included in a Special Flood Hazard Area (SFHA).

Knowing that this occurs, FEMA set up ways for residents to change the zone designation for their property. These are the Letter of Map Amendment (LOMA) and the Letter of Map Revision-Based on Fill (LOMR-F).

- A LOMA applies to property on naturally high ground; or
- A LOMR-F applies to property that was elevated by the placement of fill.

The property's elevation is compared to the area's Base Flood Elevation (BFE). This is the height of the 1%-annual-chance flood. If the lowest ground touching a building (including a basement, deck, garage, etc.) is at or above the BFE, the building is found to be outside the SFHA. In that case, FEMA can issue a LOMA or LOMR-F removing the SFHA designation.

Anyone who owns, rents or leases property may use these processes. They will need to gather certain information. In most cases, they will need to hire a professional (e.g., licensed land surveyor, registered engineer) to certify the property's elevation and find the BFE.

How Can BLE Data Support a LOMA or LOMR-F Submittal?

A building's Lowest Adjacent Grade (LAG) is the elevation of the lowest ground that touches it. This includes a basement, deck, garage, or other attached parts. A LOMA or LOMR-F for a building compares the BFE to the LAG. If the LAG is at or above the BFE, the building is considered outside the SFHA.

However, flood maps do not show BFEs in Zone A, and many older Zone A studies do not have BFEs available. Base Level Engineering (BLE) data can be a good resource to find BFEs for Zone A areas where BFEs are not already available.

A licensed surveyor or professional engineer can provide a structure's LAG for a LOMA or LOMR-F request. However, other professionals may be needed to determine a BFE in Zone A. With help from community staff, BLE datasets allow property owners, surveyors, and others to easily determine BFEs.



What Is Base Level Engineering (BLE)?

BLE analyses combine high-resolution ground elevation datasets with modeling technology. They create high-quality engineering models and flood hazard data. This data provides flood elevations and other useful data for each stream that is studied. BLE analyses can be used to determine BFEs in Zone A areas.

BLE results may not replace the published BFEs on an effective FIRM. Those BFEs are based on FEMA's enhanced studies (e.g., for Zone AE). For LOMAs in those areas, people can get the BFE data from the Flood Insurance Study report.

Keep in mind that the effective FIRM dictates a structure's official flood zone. Only a LOMA, LOMR-F, or other map revision can update this flood zone. These updates should be based on the best available information. In Zone A, where there is no supporting water surface elevation information, BLE results may be considered the best available information.

If a BLE dataset is used to determine a BFE for a LOMA or LOMR-F, please note that on the MT-1 documents. These should include a reference for where to find the 1%-annual-chance estimated elevation or how it was determined. When adding BLE data to the Elevation Certificate for a LOMA (or LOMR-F) application, the surveyor should check the "Other/Source" box (section B10) and indicate "Base Level Engineering."

Property owners, developers, engineers, and surveyors should contact the community's floodplain administrator to check that the correct flood hazard information is being used to determine BFEs. This applies to Elevation Forms, LOMAs, LOMR-Fs, and development projects. Projects may be new construction, substantial improvements, or other development as defined by a community's flood damage prevention ordinance.

RESOURCES

Find more information on BLE, LOMR-Fs and LOMAs here:

- Base Level Engineering Analyses and Mapping Guidance: <https://go.usa.gov/xeJ7m>
- LOMA and LOMR-F Process: <https://go.usa.gov/xsMBJ>
- MT-1 and MT-EZ Application Forms and Instructions: <https://go.usa.gov/xsMKq>
- Online Letter of Map Change Web Application: <https://go.usa.gov/xsMKa>
- Elevation Certificate: <https://go.usa.gov/xG5m3>