



FEMA

Levee Analysis and Mapping Procedures for Non-Accredited Levees... and Other Levee Related Topics

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RiskMAP
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LAMP Defined and LAMP Eligibility

LAMP – FEMA’s analysis and mapping procedures for showing a non-accredited levee on an effective Flood Insurance Rate Map (FIRM) as providing residual protection from the 1-percent annual chance (base) flood.

Analysis and Mapping Procedures for Non-Accredited Levee Systems

New Approach

July 2013

LAMP Eligibility – Structure meets FEMA definition of levee, has been operated and maintained as a levee, and is hydraulically significant.

Levee – *Man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding (44 CFR 59.1).*

LAMP Procedures

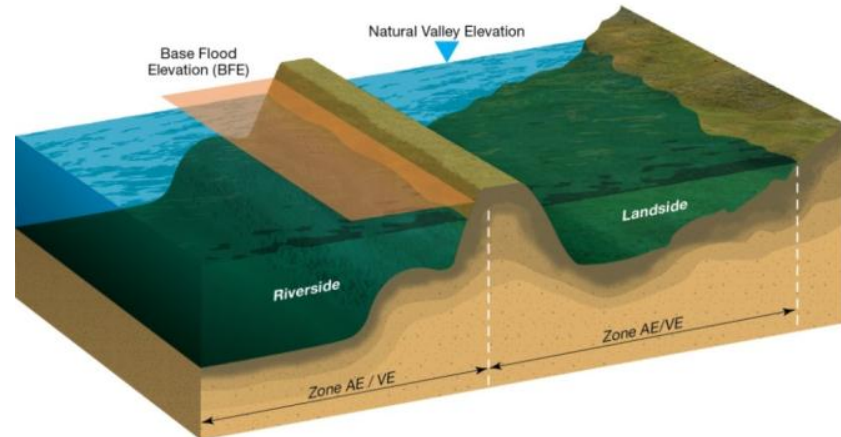
The following suite of new LAMP procedures have undergone an extensive process of scientific review and public input:

1. Natural Valley (always applied initially and for the entire system)
2. Sound Reach
3. Freeboard Deficient
4. Overtopping
5. Structural-Based Inundation



LAMP Procedures

1. **Natural Valley**
2. Sound Reach
3. Freeboard Deficient
4. Overtopping
5. Structural-Based Inundation



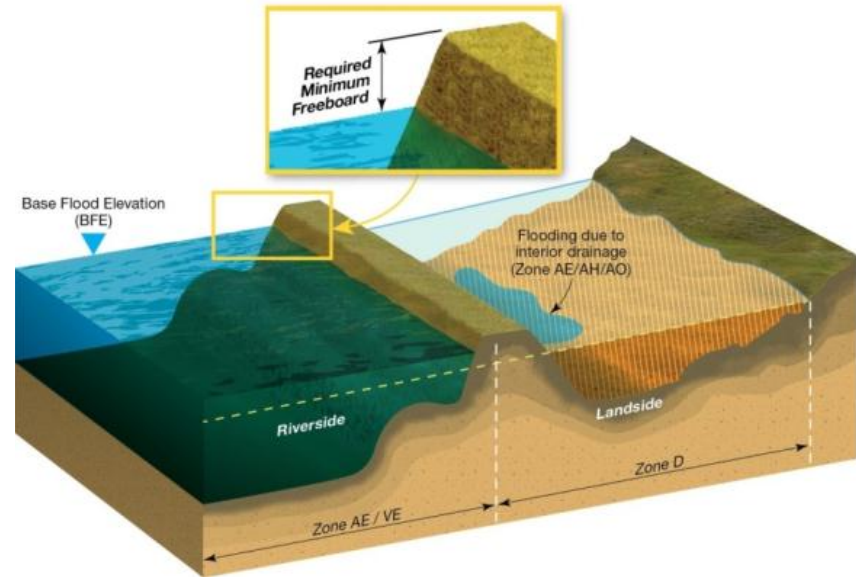
Always applied initially and to the entire levee system. The mapped area behind the levee system is based on allowing the discharge to flow freely either side of the levee.

The mapped area is labeled Zone D (areas of undetermined, but possible flooding) to define a base layer for overlaying any Special Flood Hazard Area (SFHA), including interior drainage. **Zone D is not considered a SFHA**; therefore, the Federal mandatory flood insurance requirement does not apply.

The Natural Valley procedure is also applied to levees that do not hydraulically impact the base flood. The area behind the levee is mapped as SFHA.

LAMP Procedures

1. Natural Valley
2. **Sound Reach**
3. Freeboard Deficient
4. Overtopping
5. Structural-Based Inundation

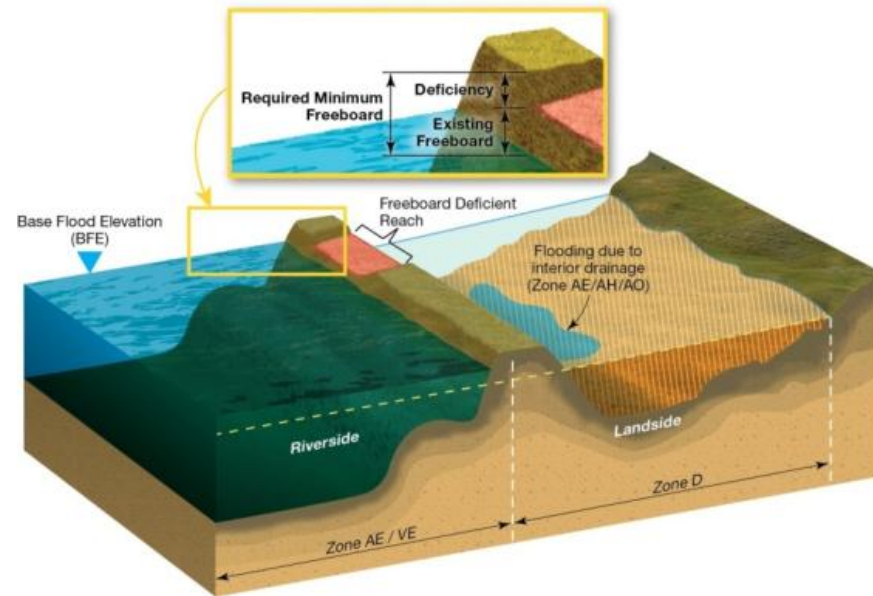


The Sound Reach procedure only applies in situations where at least one reach meets all 65.10, but the entire levee system does not. **No SFHA is added** to the initial system-wide Natural Valley procedure.

If the levee system meets the definition of Sound Reach, then in fact the levee system itself meets 65.10 and can be accredited on the FIRM.

LAMP Procedures

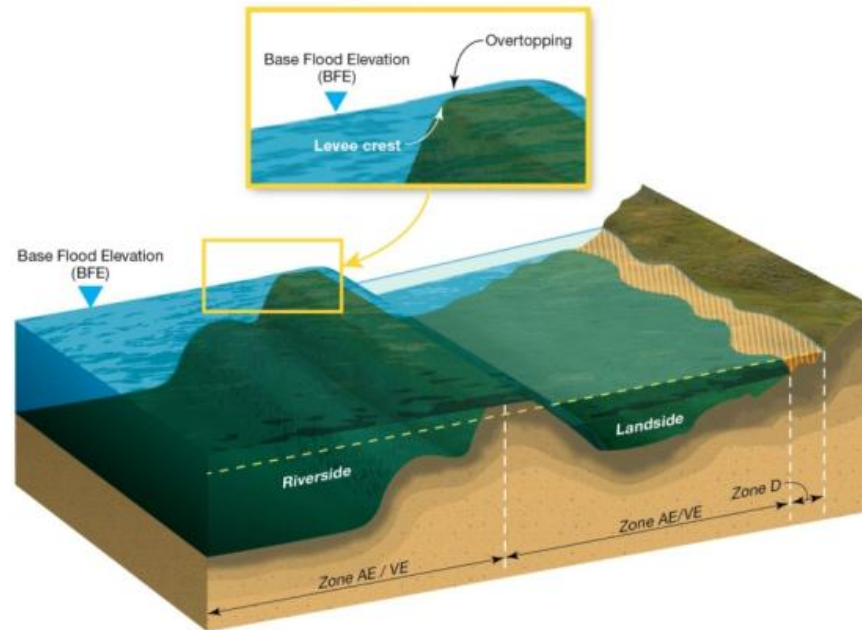
1. Natural Valley
2. Sound Reach
3. **Freeboard Deficient**
4. Overtopping
5. Structural-Based Inundation



Levee system or associated reach does not overtop, does not meet the 65.10 minimum freeboard requirement, and meets all other 65.10 requirements. **No SFHA is added** to the initial system-wide Natural Valley procedure.

LAMP Procedures

1. Natural Valley
2. Sound Reach
3. Freeboard Deficient
- 4. Overtopping**
5. Structural-Based Inundation

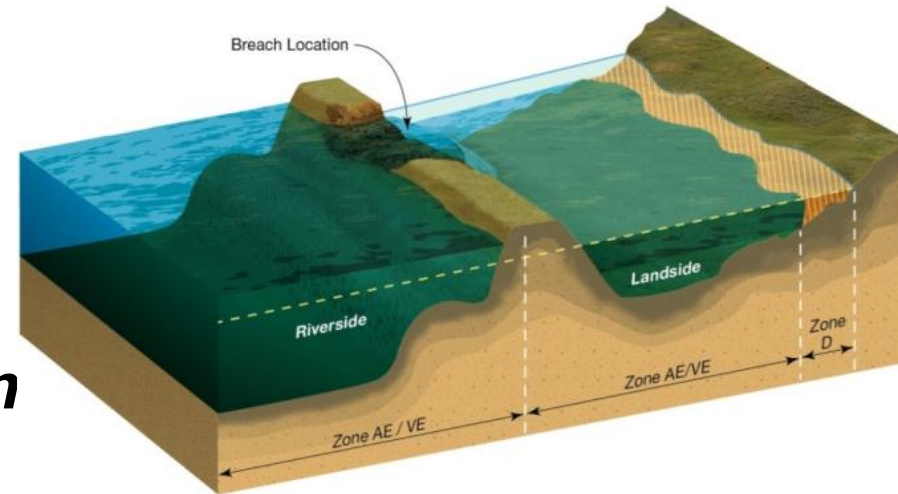


Levee system or associated reach is overtopped at least one or more location, meets all other requirements of CFR 65.10, and is armored to withstand overflows.

SFHA is added to the initial system-wide Natural Valley procedure based on routing only the overtopped contribution.

LAMP Procedures

1. Natural Valley
2. Sound Reach
3. Freeboard Deficient
4. Overtopping
5. ***Structural-Based Inundation***



Levee system or associated reach may or may not be overtopped and does not meet the requirements of 65.10. If overtopped, the levee is hydraulically significant.

SFHA is added to the initial system-wide Natural Valley procedure based on breaching the levee at more than one location.

Other Levee Related Topics

- **25 ongoing LAMP pilot projects nationwide** – Most are funded only to the LAMP Plan milestone. Results will be used to evaluate LAMP.
- **Several flood hazard mapping projects are on hold awaiting LAMP** – Projects will be subject to LAMP in FY14 and beyond.
- **Seclusion Method** – A mapping alternative for moving an on hold project forward to an effective map. The relevant levee area is fenced off and replaced with the current effective mapping . A note is added that states, in part, *“The levee, dike, or other structure inside this boundary has not been shown to comply with Section 65.10 of the NFIP Regulations. As such, this FIRM panel will be revised at a later date to update the flood hazard information associated with this structure.....”*



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