LAMP Discovery for FEMA Region X Levees
Overview & Introduction

- History of NFIP & Levees
- Accreditation & LAMP
- LAMP Discovery Procedure
- Communities & Significance
- Next Steps
History – FEMA & Levees

Initiation of LAMP

- February 2011: Analysis of “without levee” discontinued
- March 2011: Biggert-Waters Flood Insurance Reform Act passed
- July 2012: Passed
- March 2013: 17 Counties Reviewed for Region X

Leves and the National Flood Insurance Program: Improving Policies and Practices published by NAS
Region X LAMP Discovery

- American Falls, Blackfoot, & Idaho Falls, Idaho
  - Review of 20 levees in Jefferson, Madison, & Bingham Counties
- Clearwater, Idaho
  - Review of 20 levees in Clearwater, Idaho, Latah, Lewis, & Nez Perce Counties
- Lower Yakima, Washington
  - Review of 18 levees in Yakima & Benton Counties

- Future & Ongoing Reviews in Washington & Idaho
  - Chelan, Okanogan, Klickitat & Skamania
  - Big Wood Watershed, impacting Gooding, Blaine & Lincoln Counties
Accredited Levees

- For an accredited levee system, a levee must be found compliant with 44 CFR 65.10
  - FEMA will only recognize levee systems that meet, and continue to meet, minimum design, operation, and maintenance standards. Meeting the following criteria:
    - Freeboard
    - Closures
    - Embankment protection
    - Embankment and foundation stability
    - Settlement
    - Interior drainage
    - Other design criteria
Non-Accredited Levees

- Pre-2013: These levee systems were analyzed using the “without levee” approach
  - This approach classified non-accredited levees as not providing protection and therefore, not included in FIRM panels
- Post-2013: These levee systems are analyzed using the Levee Analysis and Mapping Procedures (LAMP)
  - Complies with NFIP regulations and standards
  - Utilizes local knowledge and data to identify the unique characteristics of each levee system
  - Aligns engineering and mapping resources with the level of risk within a levee system
FIRM Panel Overview

NOTE: This area is shown as being protected from the 1-percent-annual-chance or greater flood hazard by a levee system. Overtopping or failure of any levee system is possible. For additional information, see the "Accredited Levee Note" in notes to users.
A New Approach: LAMP

- Levee Analysis & Mapping Procedures for non-accredited levee systems. The following criteria are analyzed to determine the levee systems’ capacity:
  - Level of Service (Overtopping & Flanking)
  - Non-Levee Embankments
  - Structures & Communities
  - Significance
Level of Service

- Level of Service for a levee system is determined by reviewing levee profiles for the following three indicators:
  - Overtopping
  - Flanking
  - Freeboard
Overtopping
Flanking

![Graph showing flanking profile with levee crest elevation and base flood elevation curves.](image)
Freeboard
Non-Levee Embankments
# Structures & Communities

**System Name:**

**Owner:**

**Flood Source:** Levee System

**Structure Type:**

**Community[es] Impacted:**

**System ID:** 55990000022

**Mileage:** 5.27

**Source:** NLD

**FIRM:**

- Private no 5307760714D, 5307760740D, 5307761054D, 5307761051D, 5307761032D, 5307761053D, 5307761053D, 5307761051D, 5307760758D
- Effective Dates: 07/19/2003 & 04/14/2016 (910384)
- Zone SC
- Provides Limited Protection

**Hydraulic Significance:** Accredited, Significant

**Levee Above BFE:** Yes, 1 ft freeboard.

**Provides Protection:** Levee system provides protection from 1 percent regulatory flooding

**USACE Rehabilitation Program Status:**

- PL 84-99
- No data entered

**Estimated No. of Structures Impacted:** 3700

**IRM Source:** 2014

**WSE Source:** Effective BFE

**Notes:**

This is a Levee System, not necessarily a singular levee.
Significance

- FEMA defines hydraulic significance as:
  - *In some cases, a levee reach is so significantly overtopped during the peak of the 1-percent-annual-chance flood event that the existence of the levee does not have a noticeable effect on the water-surface elevation (WSEL).*

- In LAMP discovery, it is important to highlight if a levee system is significant or not for future LAMP study.
Non-Significant Levee & Profile
Significant Levee & Profile
Data Resources

- Best Available High-Resolution LiDAR
- Water Surface Elevation (WSEL) grid
  - If not available, develop WSEL grid from effective or restudy Cross-Sections
- Levee Lines (USACE National Levee Database)
Communities - The Next Step

- Community feedback
- Additional Survey
- Additional Modeling
- Flood Zone Review
- Impact on Mapping and Insurance
Conclusion

- New Approach for Non Accredited Levees
- Proactive knowledge for future flood studies
- Planning and analysis tool for stakeholders
HAPPY RETIREMENT, ANDREW!
THANK YOU FOR YOUR 25 YEARS OF SERVICE AND COMMITMENT TO THE COMMUNITY
Now the fun begins!

Happy Retirement, Steven!

Region X wishes you a retirement filled with fun and happiness.
Questions

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Thank you!