



FEMA

Levee Analysis and Mapping Procedures (LAMP) for Non-accredited Levees

Village of Johnson City

Broome County, NY

September 7, 2016

RiskMAP
Increasing Resilience Together



Agenda

- Welcome & Introductions
- Review of the Levee Analysis and Mapping Procedure (LAMP) Objectives
- Review of the area impacted by the local levee system
- Evaluate Components of the Levee System
- LAMP Path Forward

Introductions & Contact Information

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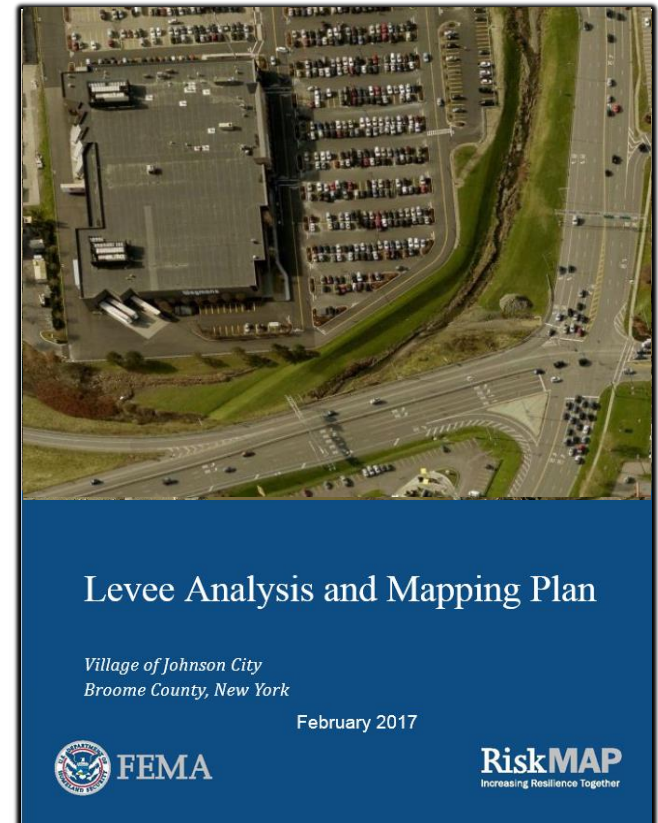
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Levee Analysis and Mapping Process – Phase 1

■ LAMP Phase 1 Objectives

- Establish a Local Levee Partnership Team (LLPT) to collect local levee data and related levee system information
- Perform an approximate-level flooding analysis (First Pass Analysis)
- Prepare the Levee Analysis and Mapping Plan



Local Levee Partnership Team (LLPT)

■ Meeting-Specific Objectives:

- Important information and data related to how the levee system will be analyzed and mapped is obtained and considered
- LLPT members identify unique conditions related to local levee system(s) that may impact analysis and mapping
- LLPT members comment on: levee system reaches, analyses, and mapping determinations within allowable guidelines
- A reasonable schedule is developed for obtaining input or additional data

Local Levee Systems

- Village of Johnson City

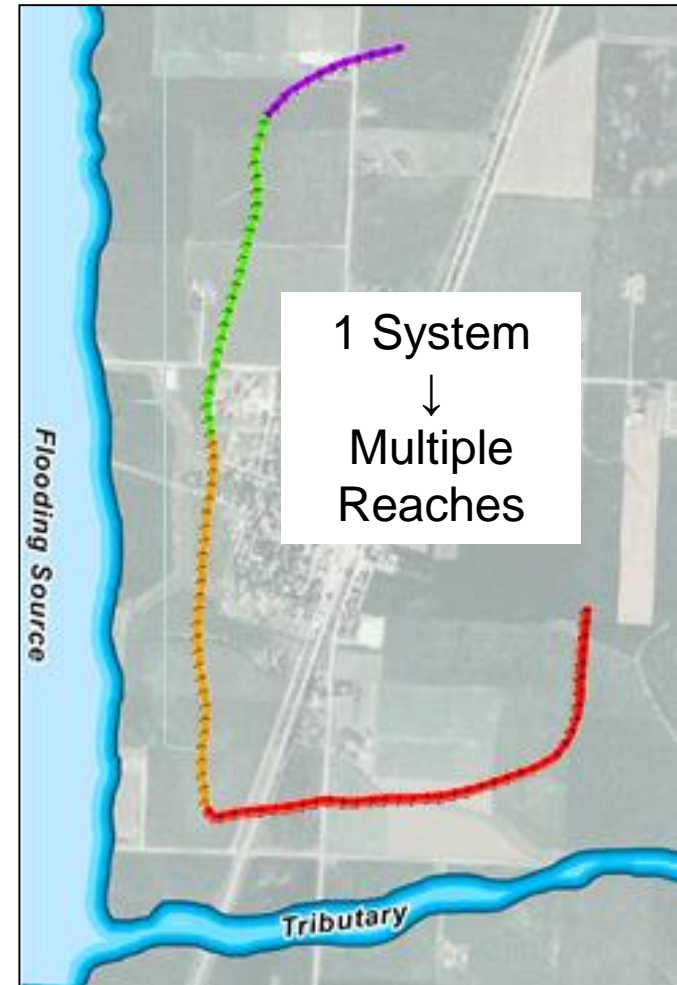


LAMP Analyses & Methodology

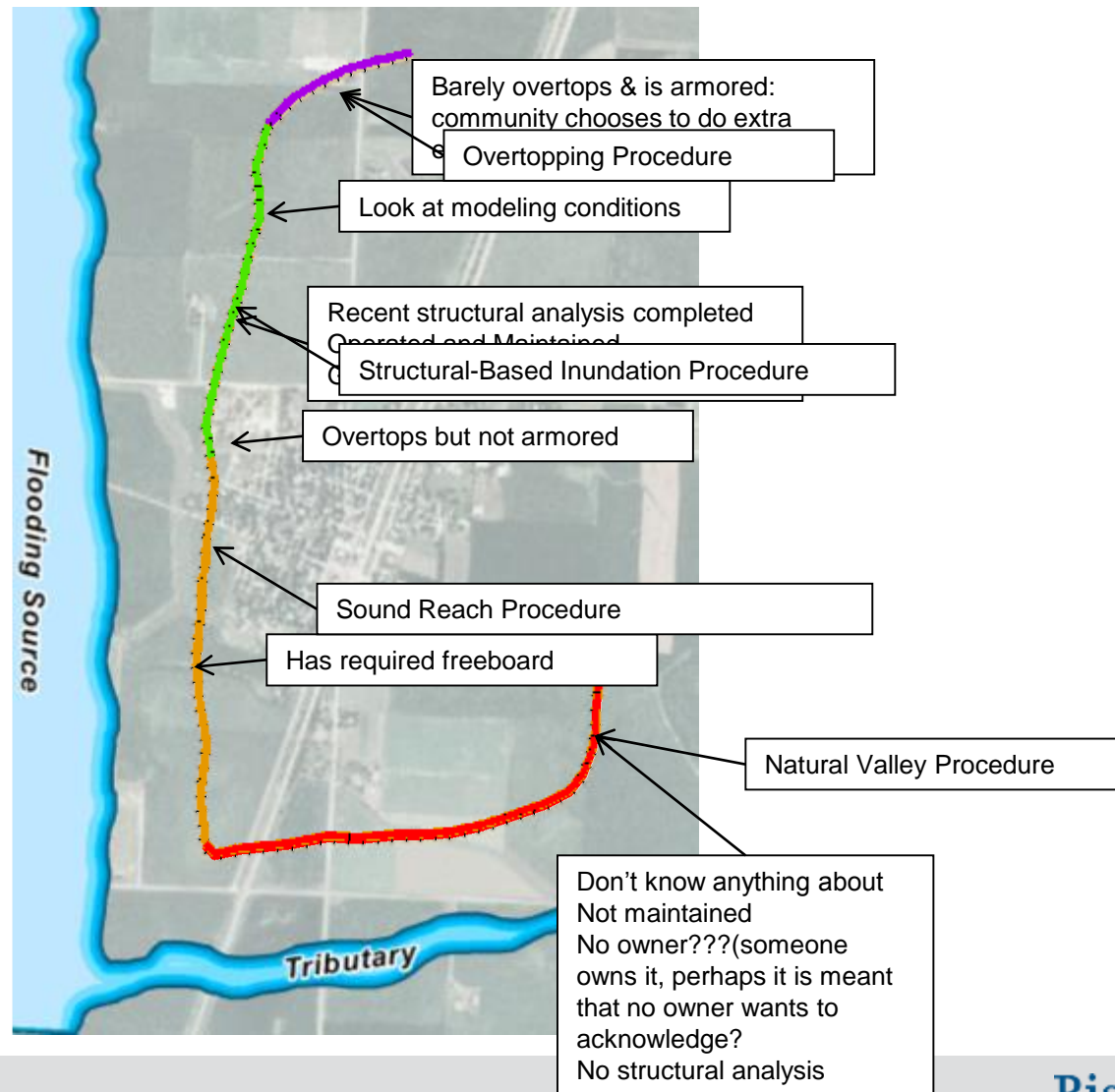
There are five procedures detailed in the LAMP Final Approach Document.

- **Natural Valley**
- **Structural-Based Inundation**
- **Overtopping**
- **Freeboard Deficient**
- **Sound Reach**

A levee system can be broken up into multiple reaches in order to analyze the flood risk in its vicinity.



So... What's a Reach?



Data Requirements

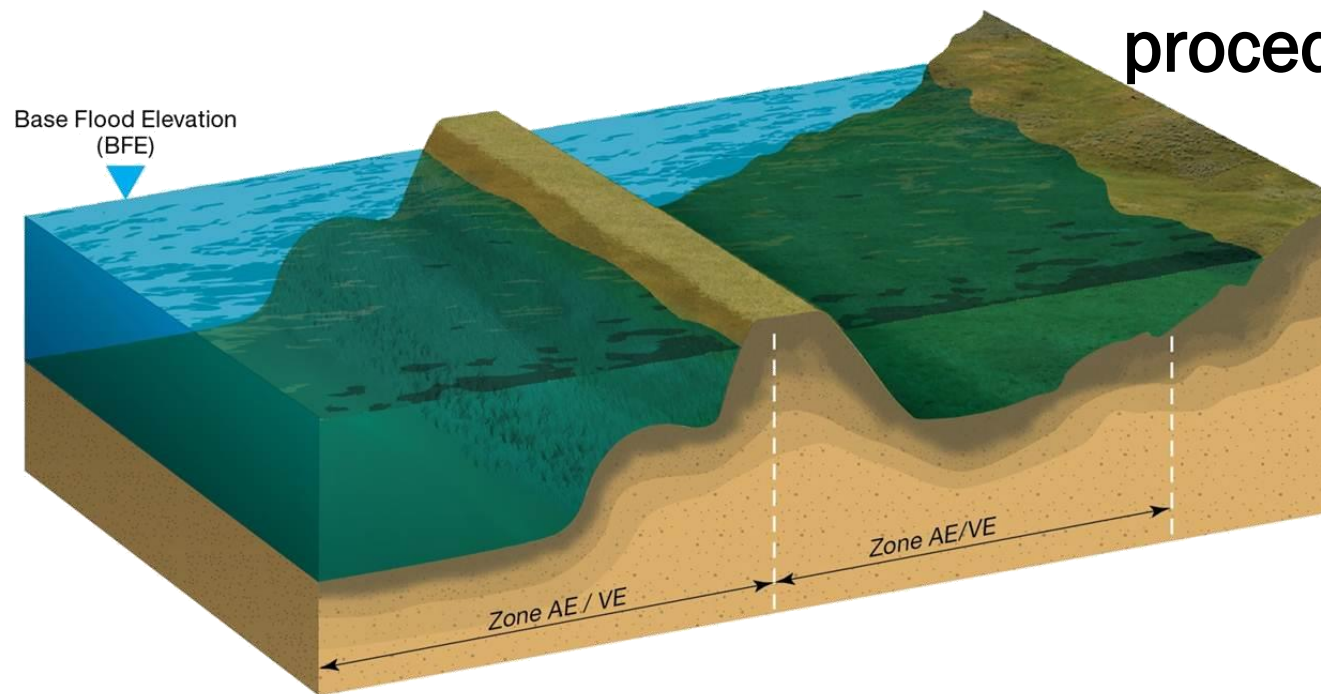
	Natural Valley	Structural-Based Inundation	Overtopping Approach	Freeboard Deficient	Sound Reach
Elevation Information for the Levee Crest	-	Required	Required	Required	Required
Operations and Maintenance Plan	-	Recommended	Required	Required	Required
Structural Design Requirements	-	Recommended	Required	Required	Required
Inspection Reports	-	Recommended	Required	Required	Required
Evaluation of Overtopping Erosion Potential	-	-	Required	-	-
BFE Less than Levee Crest	-	-	-	Required	Required
BFE + Freeboard Less than Levee Crest	-	-	-	-	Required

Application of LAMP to Levees in COMMUNITY

- **LLPT discussions on applicable LAMP Procedure**
 - **Natural Valley Procedure**
 - Mapping natural floodplain of the flood source
 - **Structural Based Inundation Procedure**
 - Is there historical evidence that this levee has been breached in the past?
 - Is there evidence that finds this levee system vulnerable to breaching?
 - **Overtopping Procedure**
 - Is any “reach” a floodwall or levee designed to be overtopped in 1% storm?
 - **Freeboard Deficient Procedure**
 - Does any “reach” of the levee system meet all 44CFR 65.10 levee accreditation requirements except freeboard
 - **Sound Reach Procedure**
 - Does any “reach” of the levee system meet all 44CFR 65.10 levee accreditation requirements except that it is attached to “reaches” that cannot be accredited

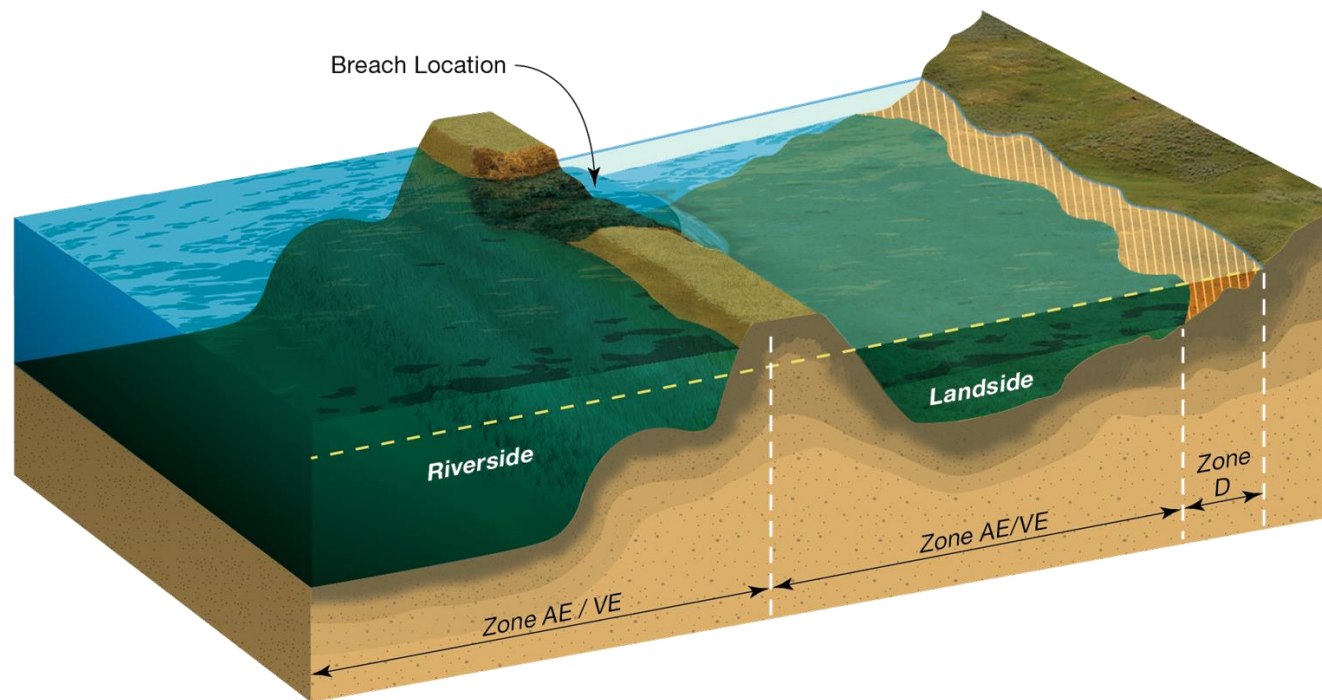
Natural Valley Procedure

- Used to determine Zone D in subsequent procedures

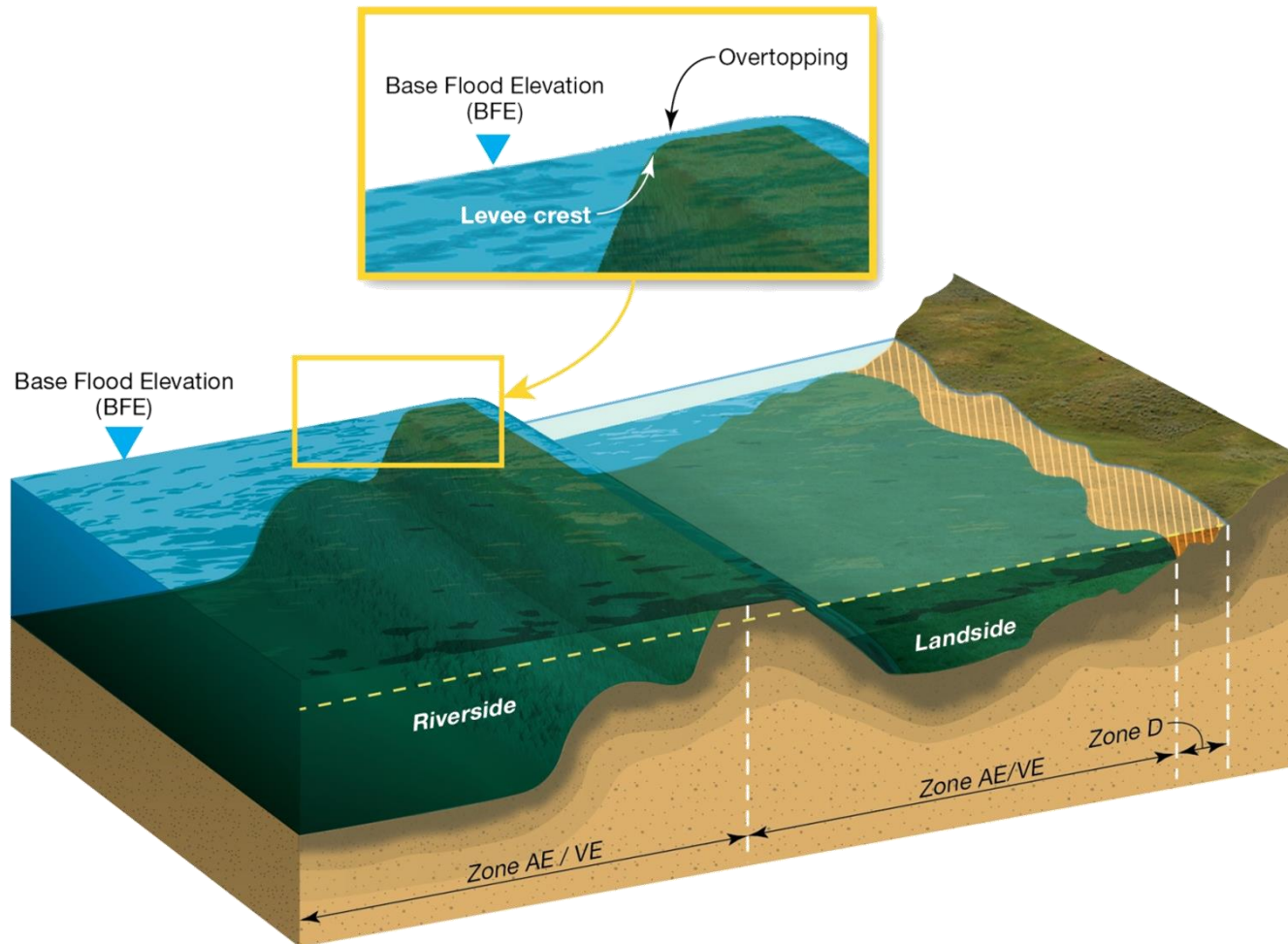


Structural-Based Inundation Procedure

- Levee has history or potential for breaches



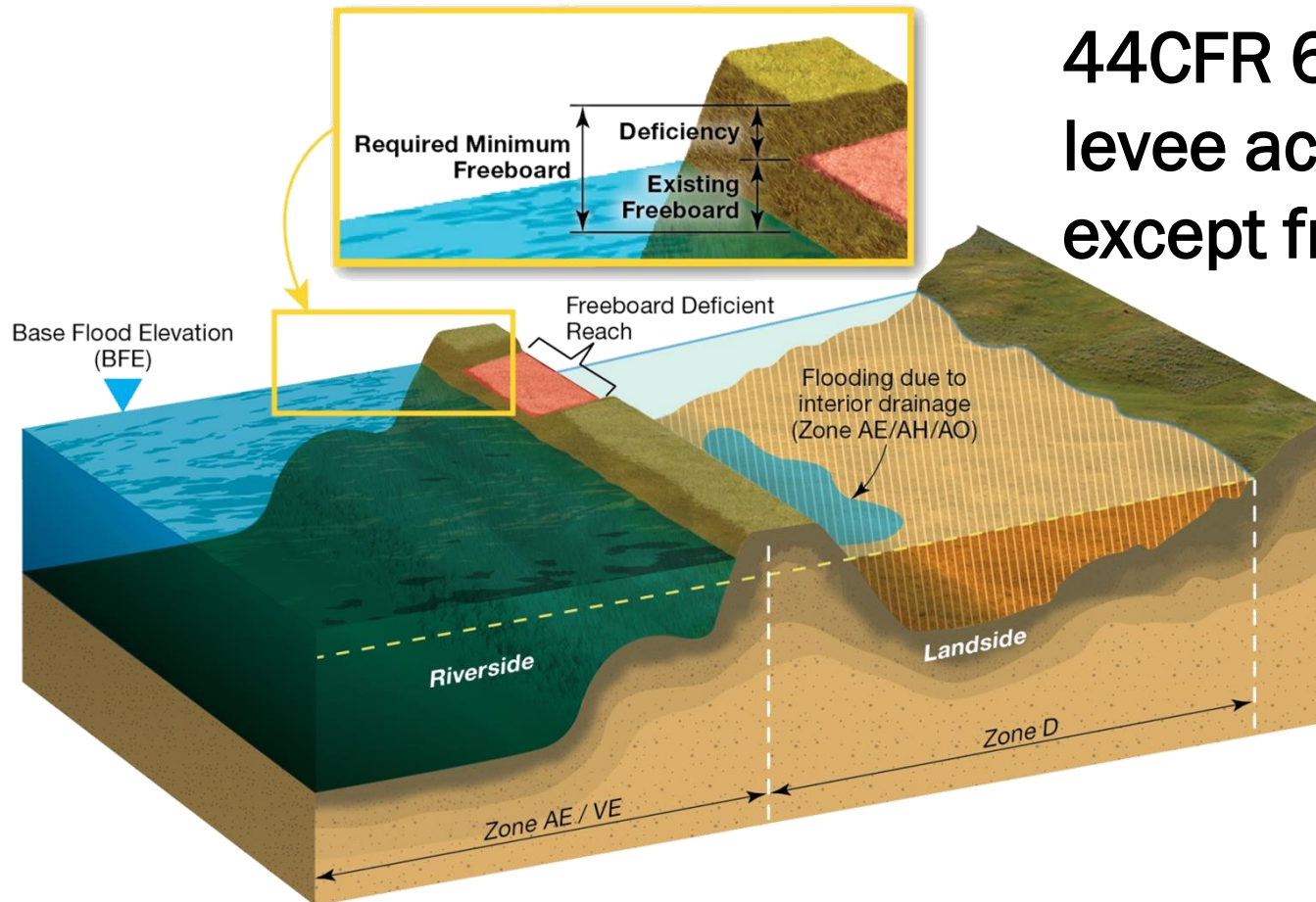
Overtopping Procedure



- Reach meets 44CFR 65.10 levee accreditation except freeboard
- Levee designed to be overtopped in 1% storm with no erosion

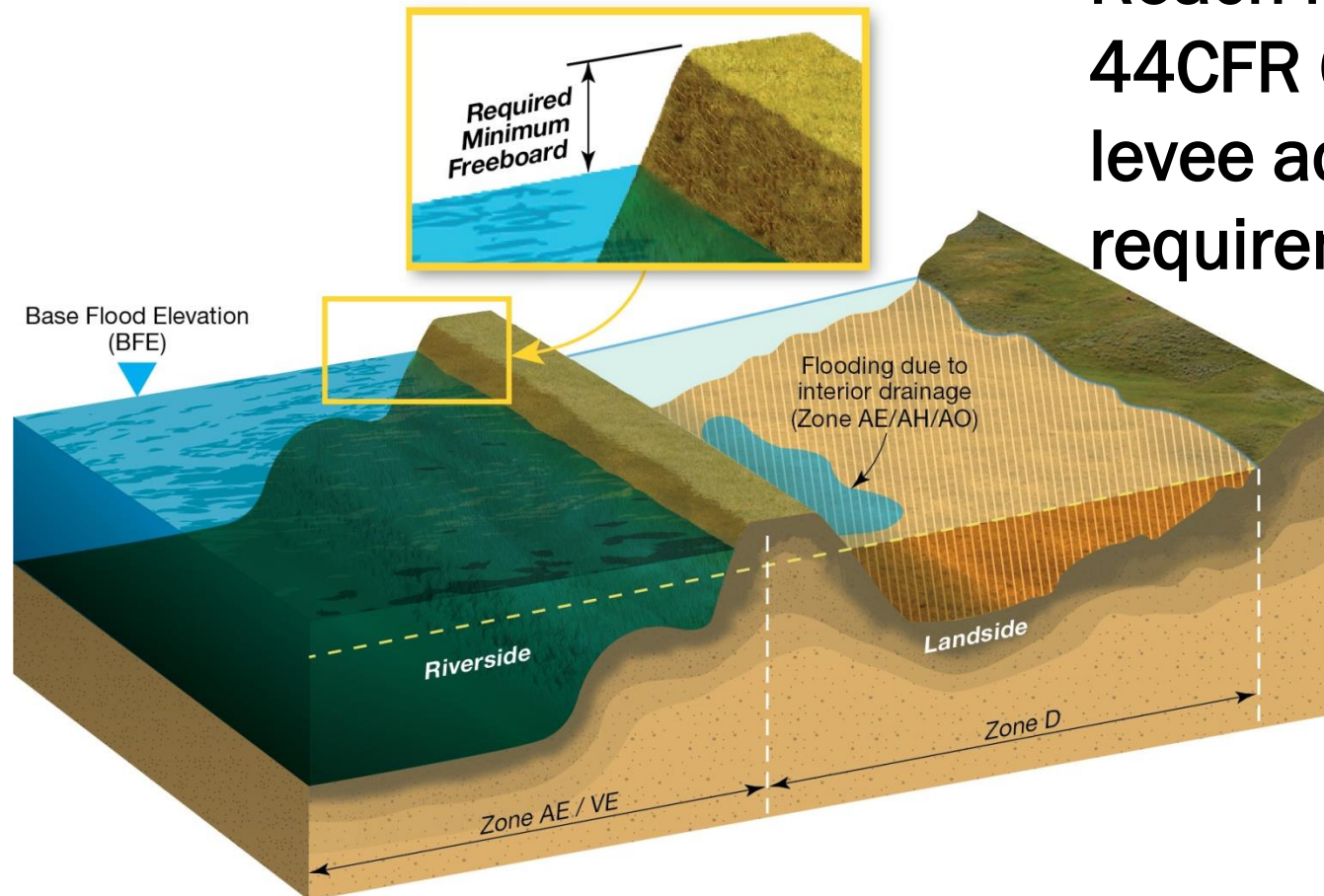
Freeboard Deficient Procedure

- Reach meets 44CFR 65.10 levee accreditation except freeboard

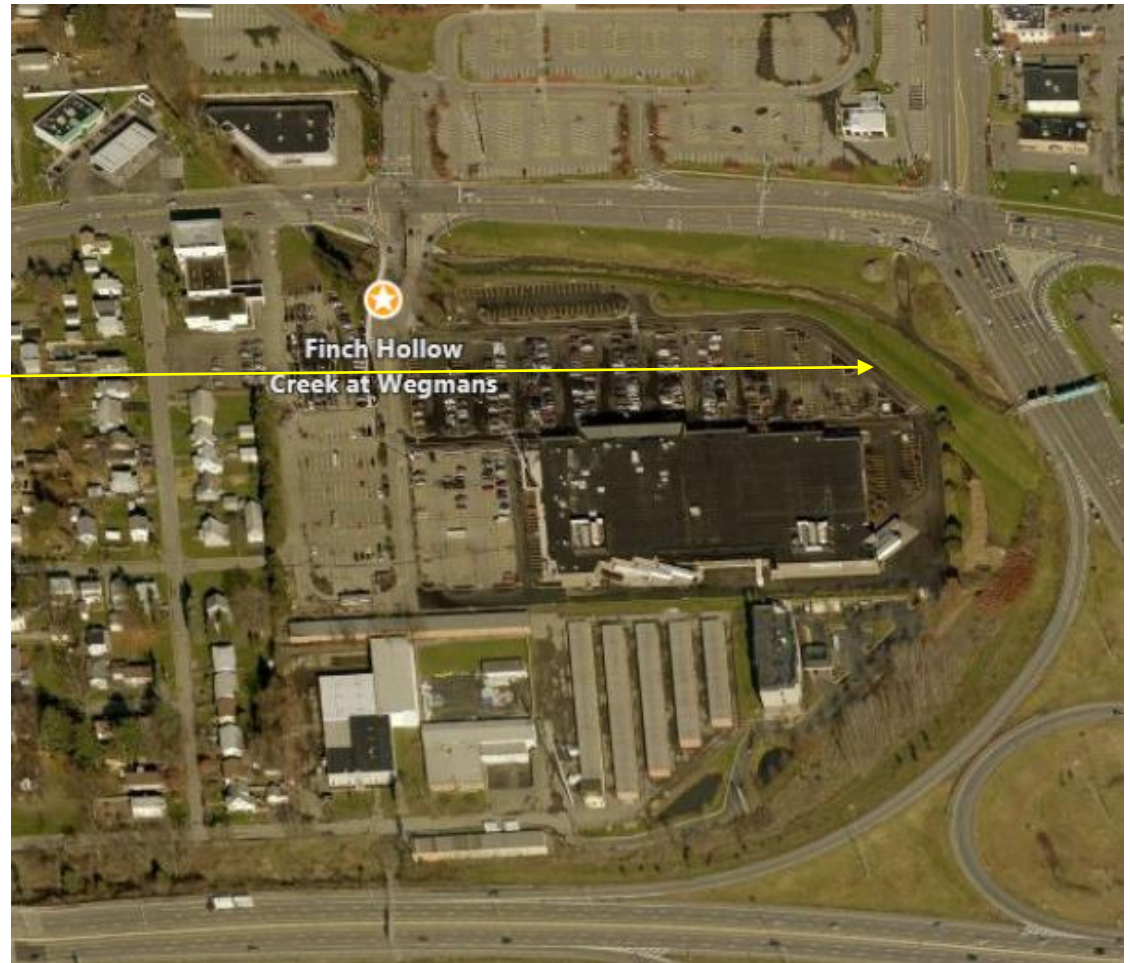
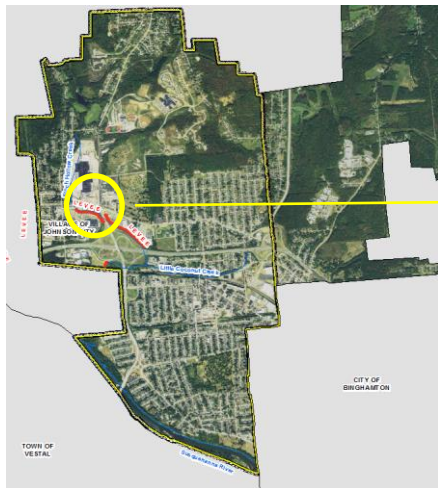


Sound Reach Procedure

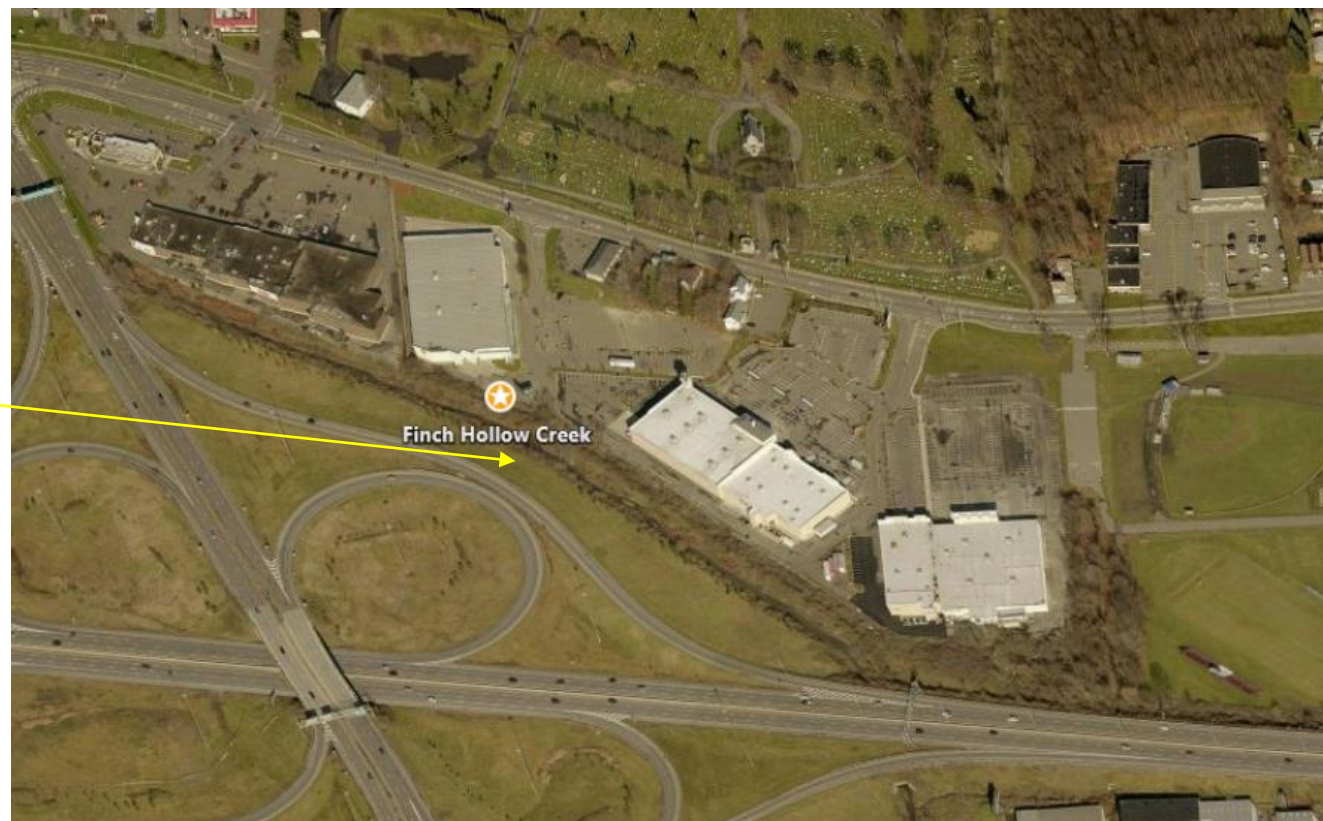
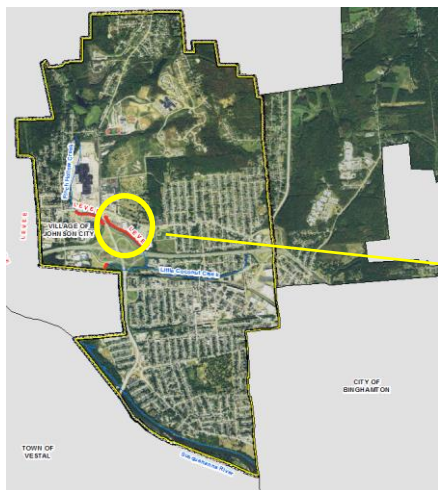
- Reach meets 44CFR 65.10 levee accreditation requirements



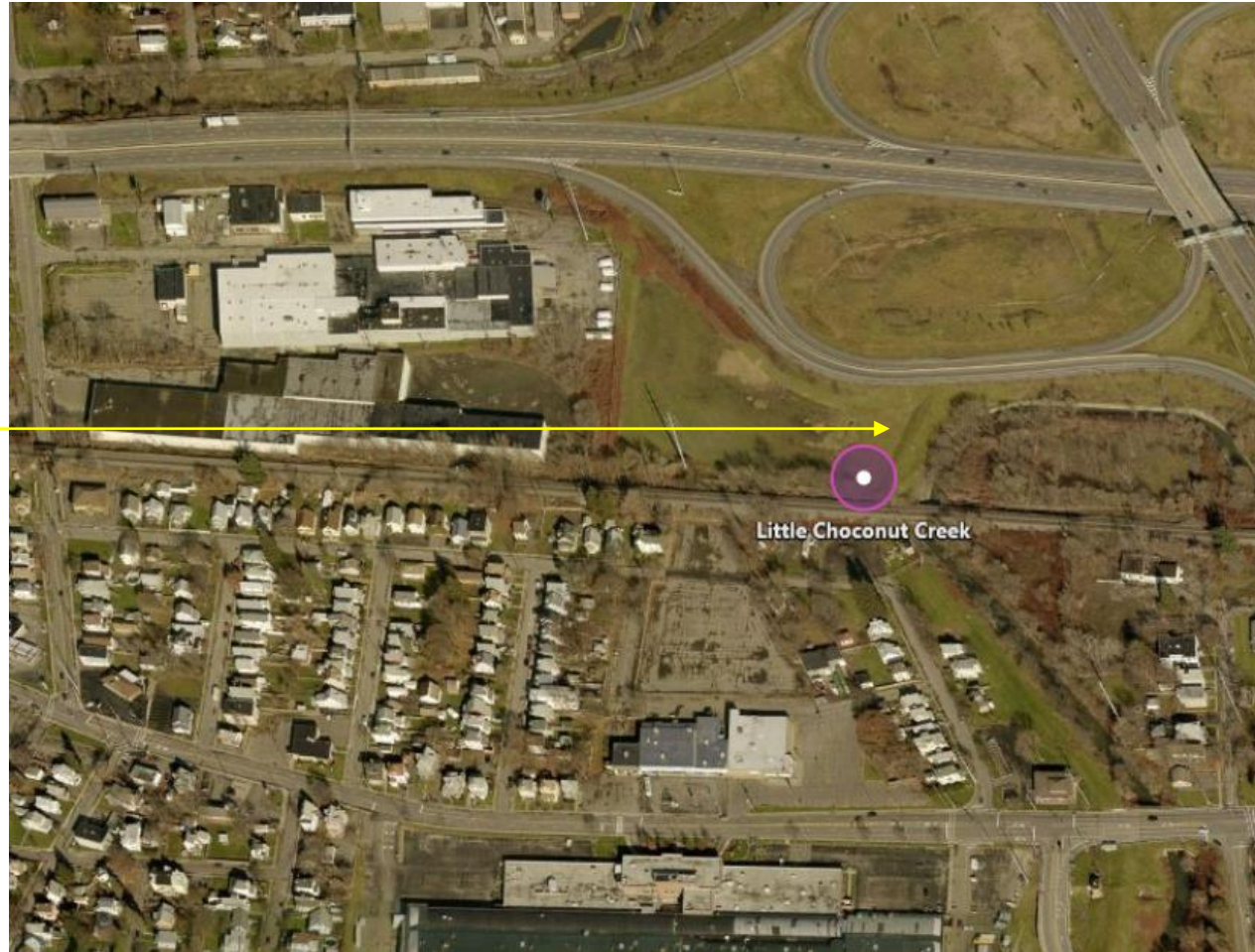
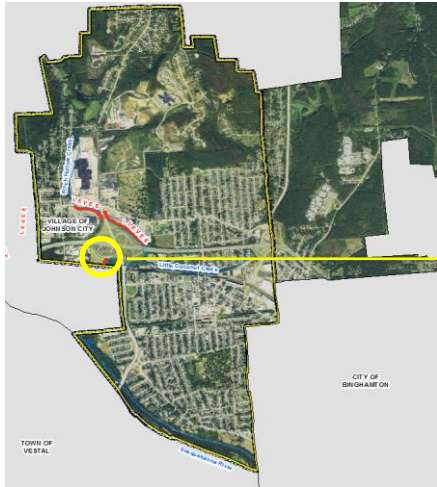
Local Levee System



Local Levee System



Local Levee System



Shared Levee Systems With Union



<http://arcg.is/2ce6laE>

LAMP Path Forward

■ LAMP - Phase 1

1st LLPT Meeting

(We are here)

Apply initial LAMP Procedures and develop First Pass Analyses

2nd LLPT Meeting

Review First Pass Analysis and finalize which Procedure(s) will be applied in future Phase 2 Detailed Analysis (if applicable)

Prepare a LAMP Plan document that summarizes LLPT discussions; First Pass Analyses; and recommended LAMP Procedure to be applied in Phase 2

3rd LLPT Meeting (virtual)

Draft LAMP Plan will be shared with all LLPT members

Finalize LAMP Plan.

Share Final LAMP Plan with all LLPT members

Sep 2016

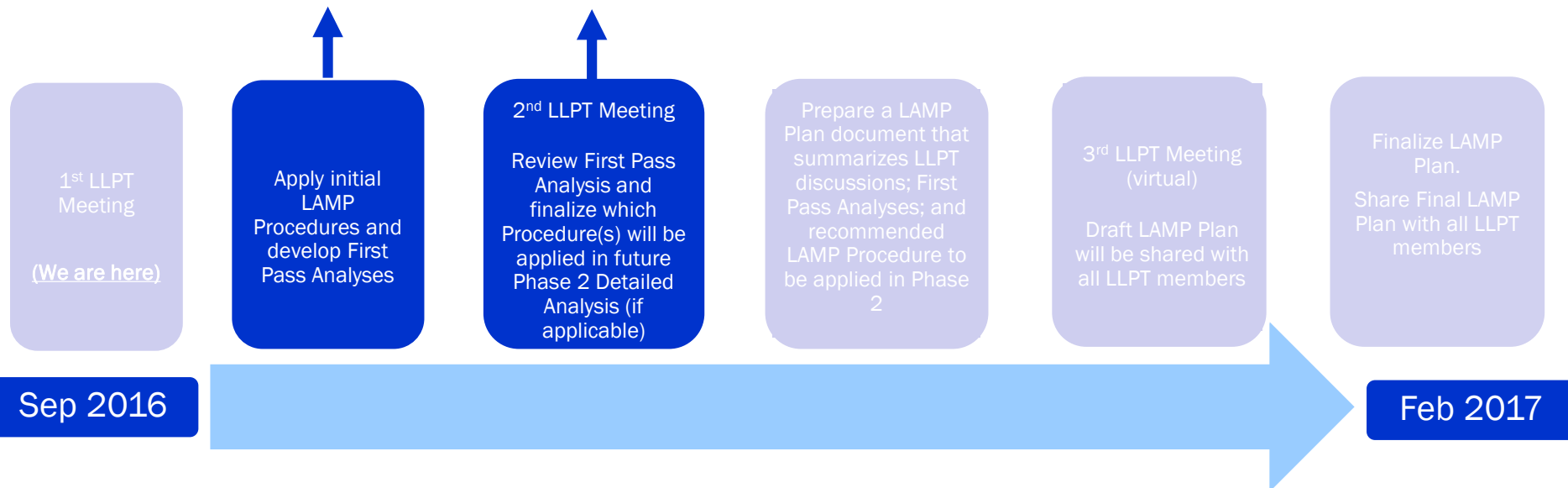
Feb 2017

LAMP: Next Step

■ Preparing for Phase 2

Collect Data, Develop Models for First Pass Analysis

Schedule LLPT2 Meeting, Review First Pass Analysis, Finalize Procedures





FEMA

Know, plan for, mitigate against and communicate about the risks in your community.