



FEMA

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

City of Binghamton

Broome County, NY

July 27, 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

- FEMA Project Monitor

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- Outreach Leads

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- Project Engineers

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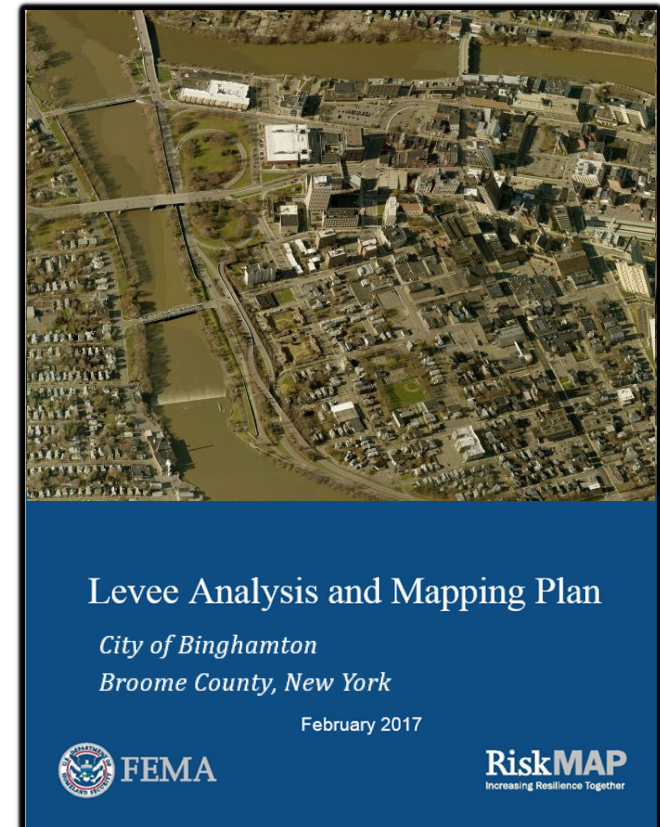
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Levee Analysis and Mapping Process – Phase 1

■ 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



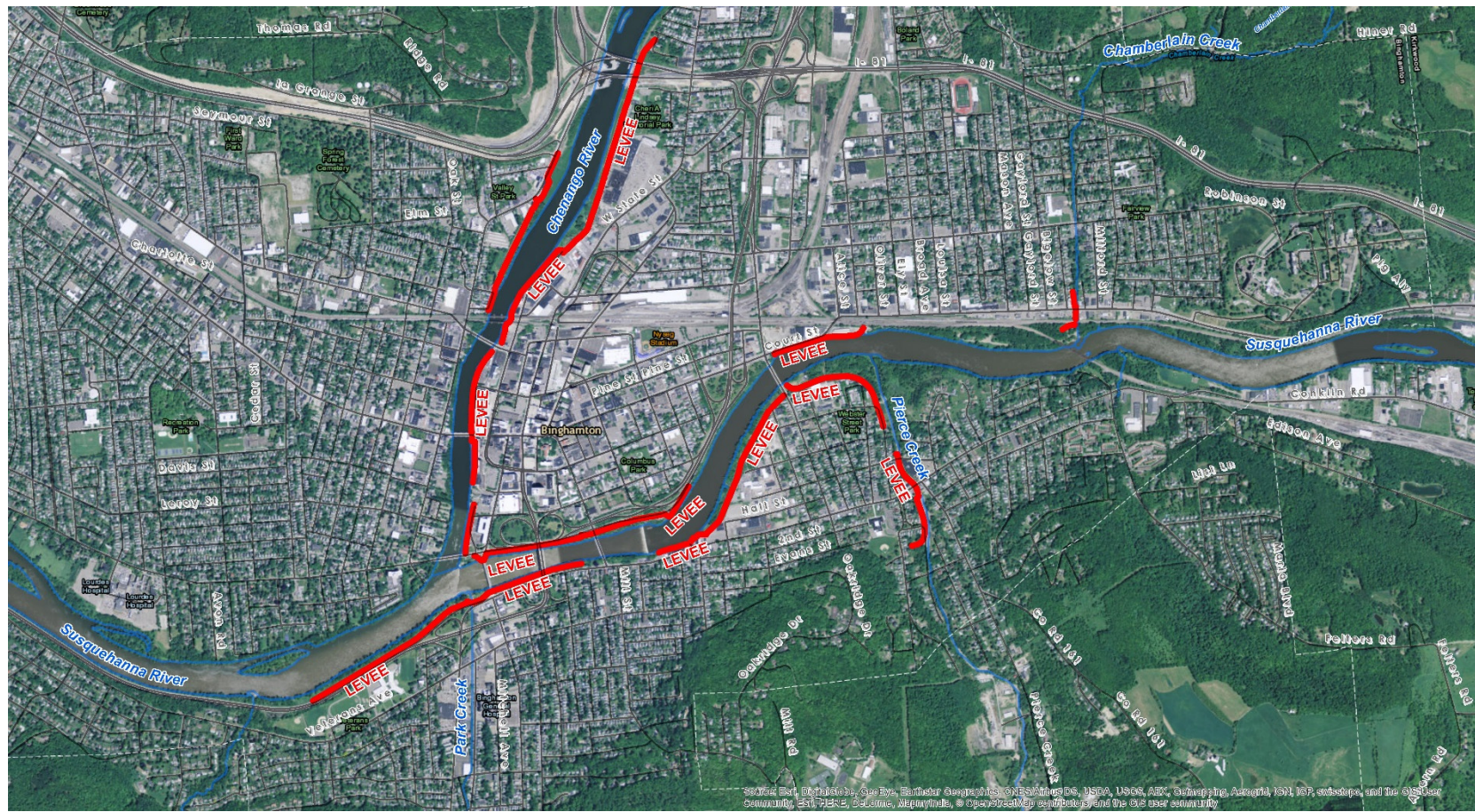
Local Levee Partnership Team (LLPT)

■ 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

- City of Binghamton

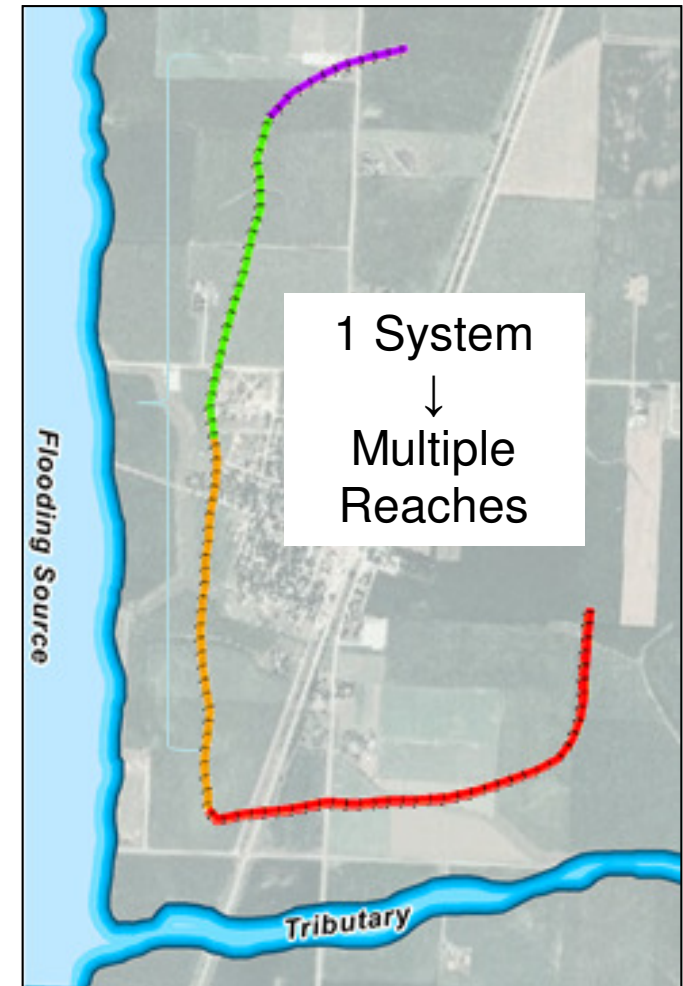


LAMP Analyses & Methodology

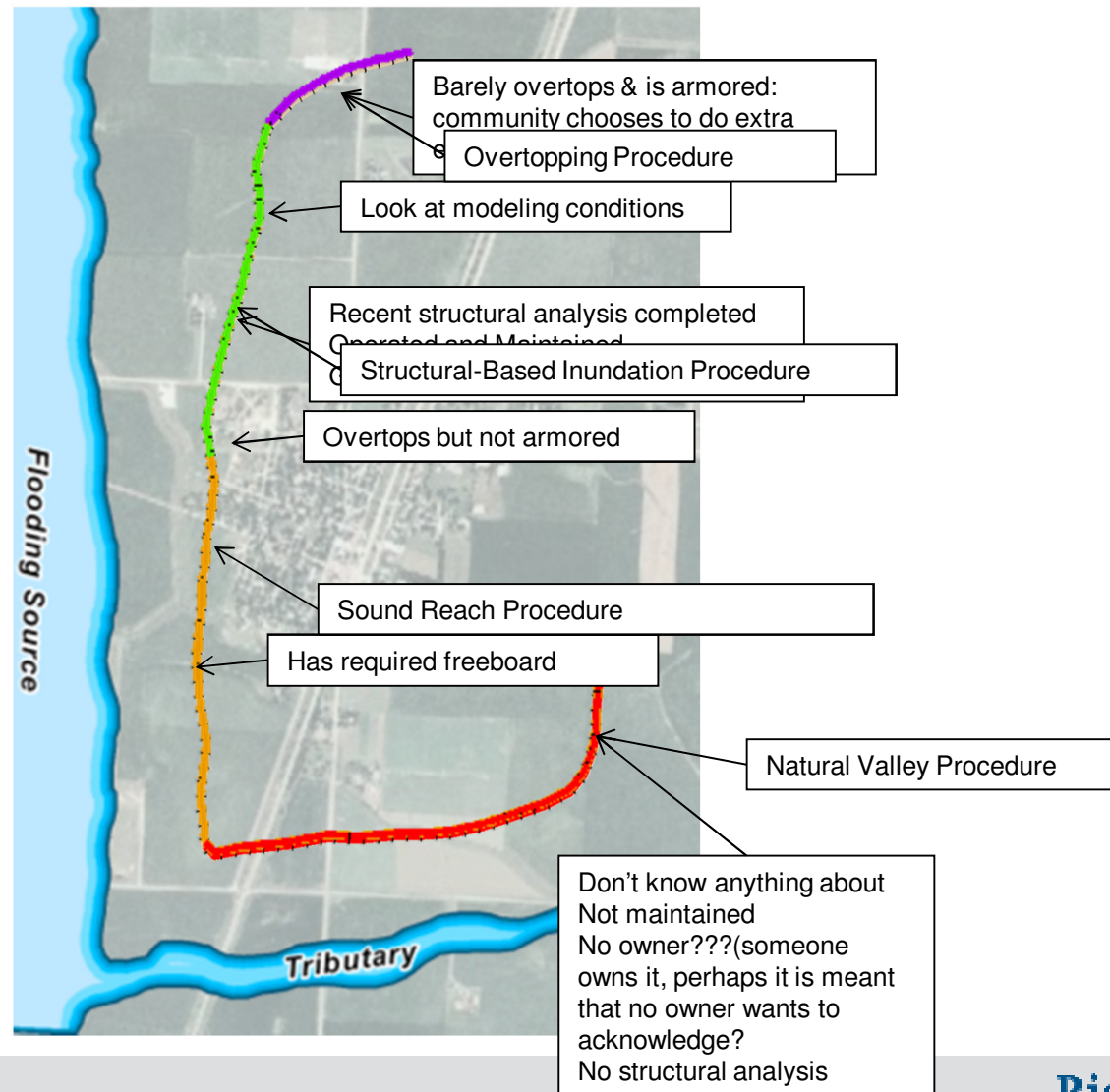
There are five procedures detailed in the LAMP Document.

- **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

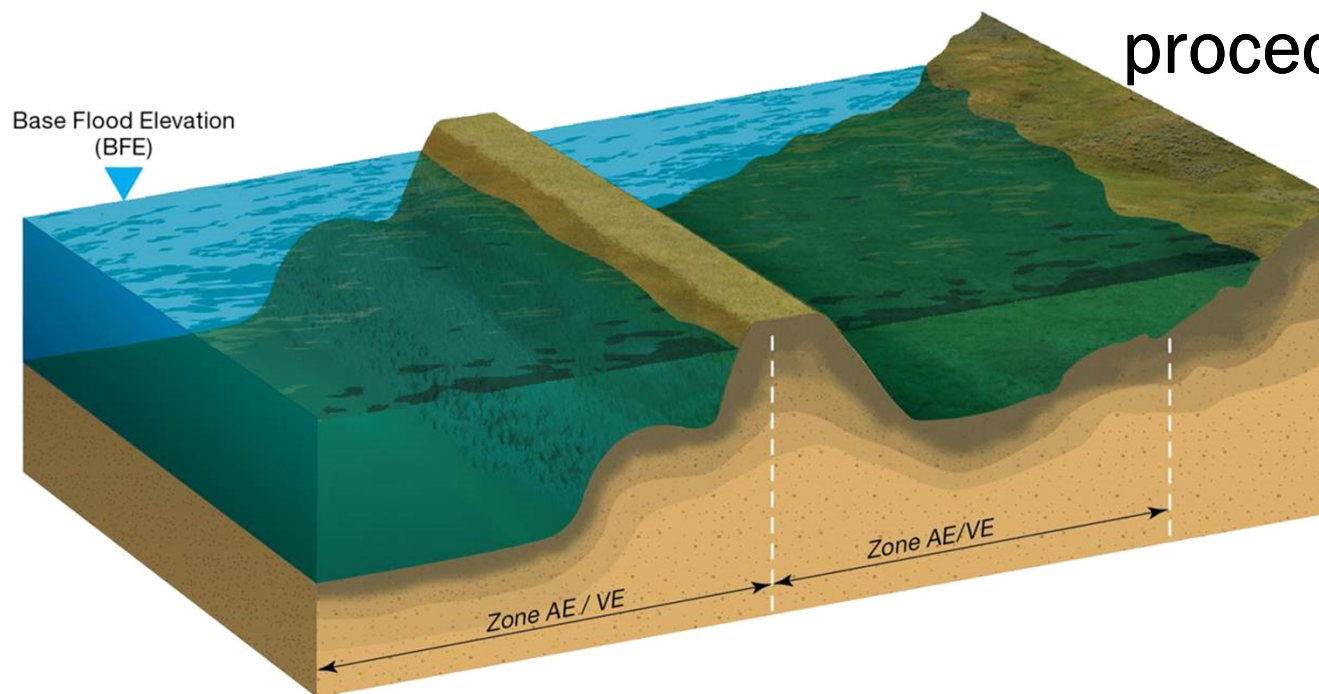
	Natural Valley	Structural-Based Inundation	Overtopping Approach	Freeboard Deficient	Sound Reach
Elevation Information for the Levee Crest	-	Required	Required	Required	Required
Operations and Maintenance Plan	-	Recommended	Required	Required	Required
Structural Design Requirements	-	Recommended	Required	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

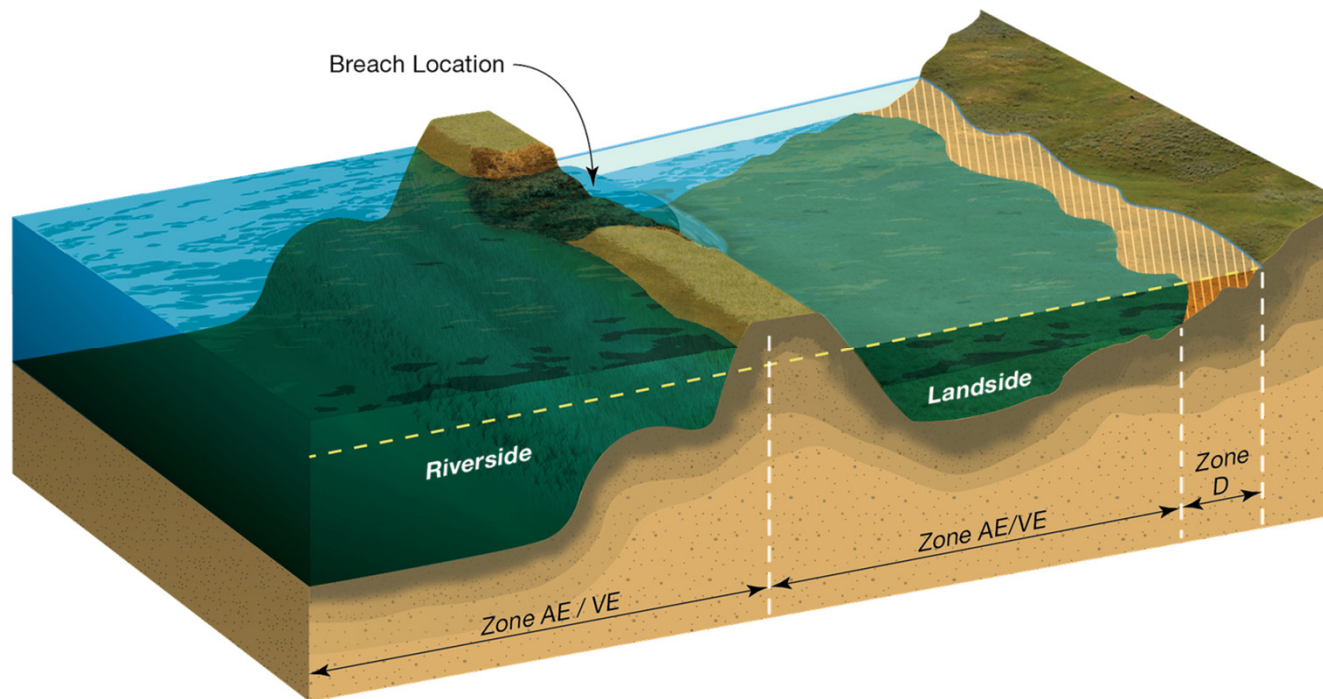
Natural Valley Procedure

- Used to determine Zone D in subsequent procedures

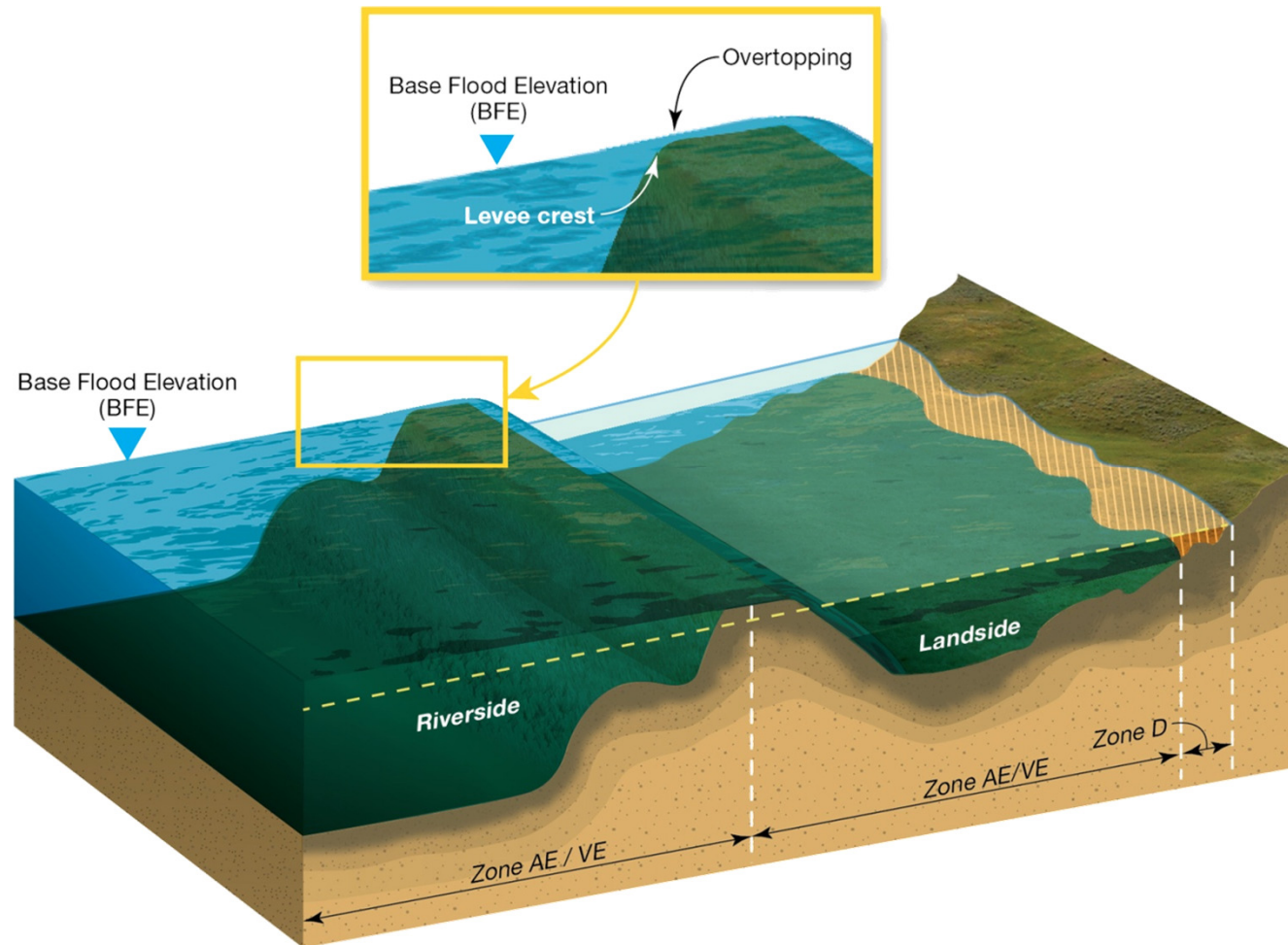


Structural-Based Inundation Procedure

- Levee has history or potential for breaches



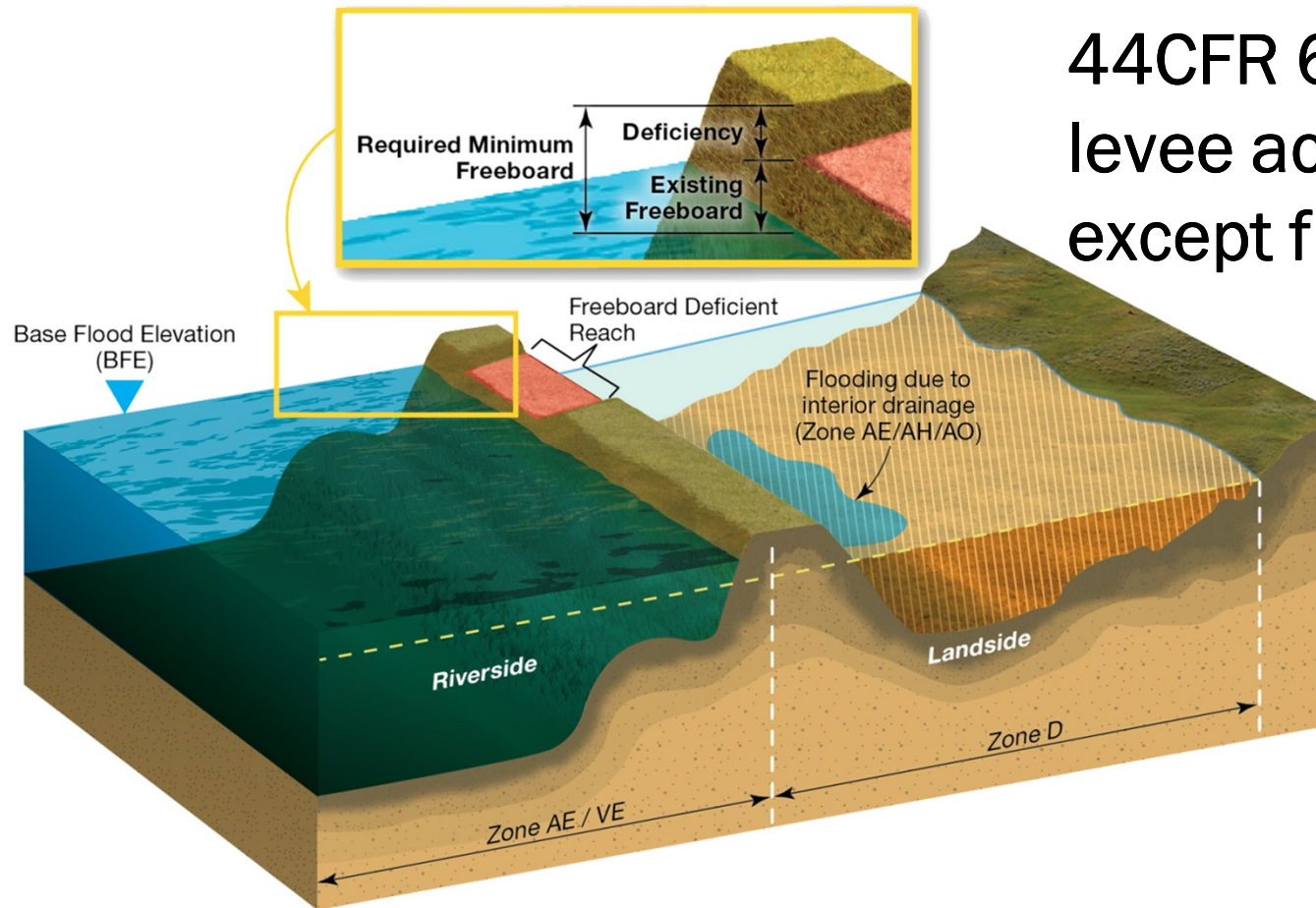
Overtopping Procedure



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

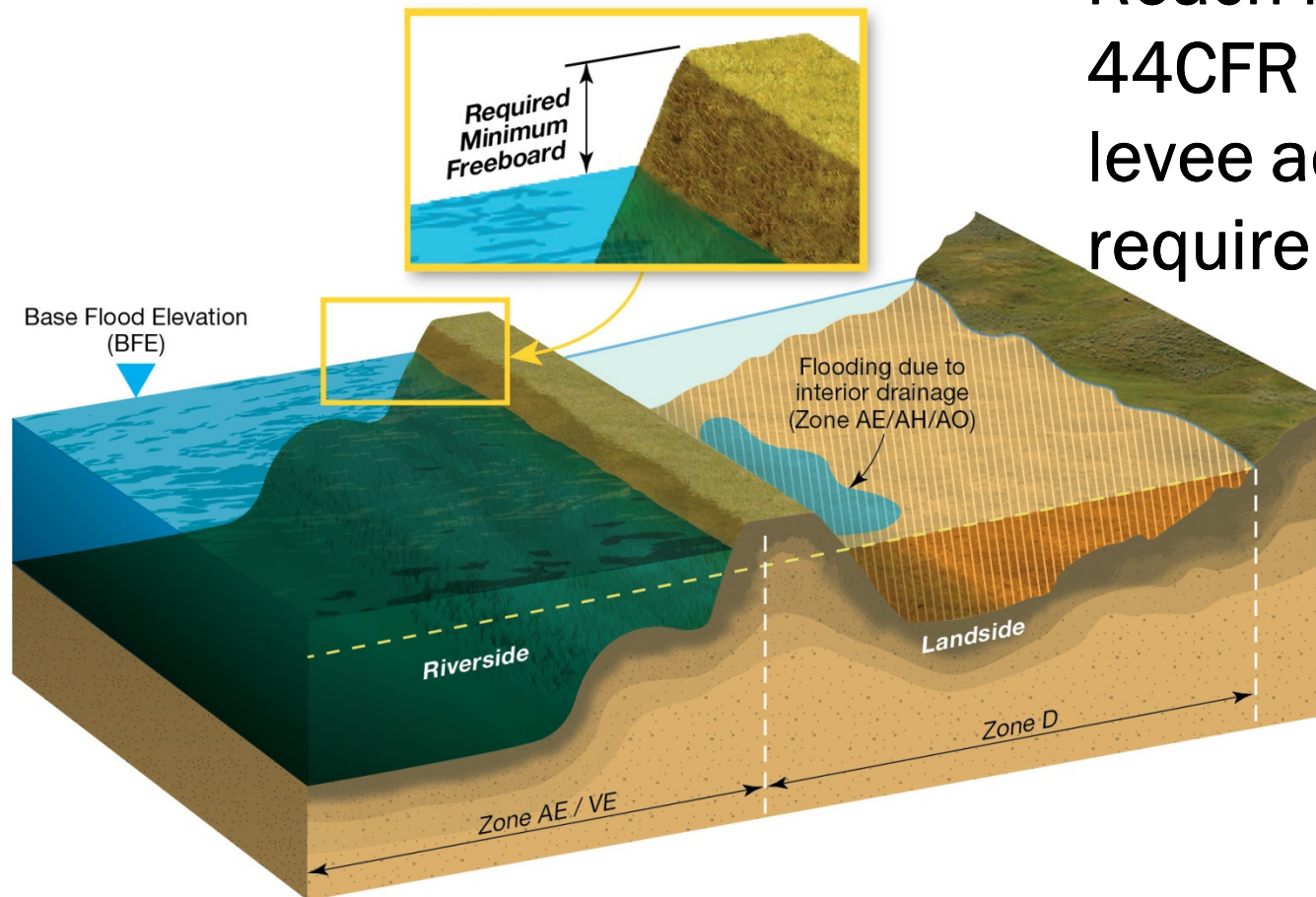
Freeboard Deficient Procedure

- Reach meets 44CFR 65.10 levee accreditation except freeboard



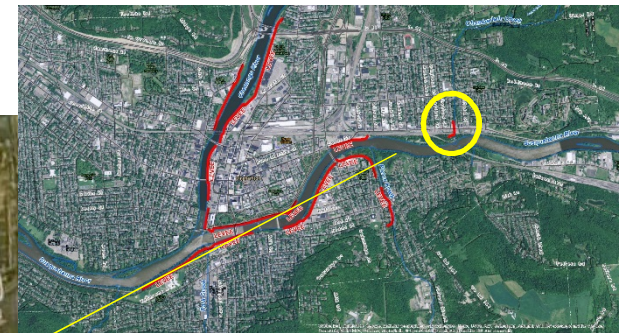
Sound Reach Procedure

- Reach meets 44CFR 65.10 levee accreditation requirements



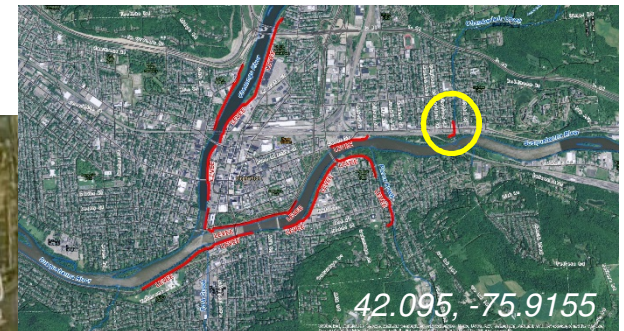
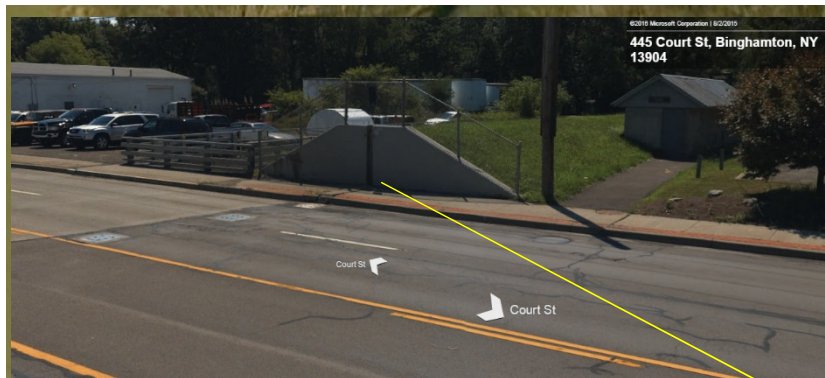
Local Levee System

- Chamberlain Creek at Court Street

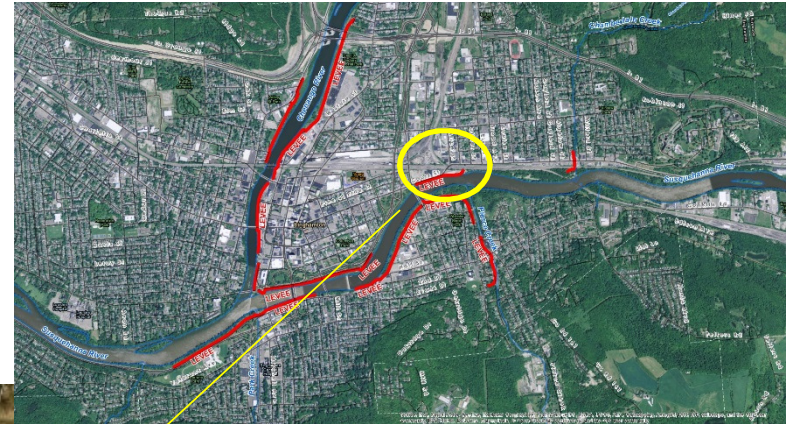


Local Levee System

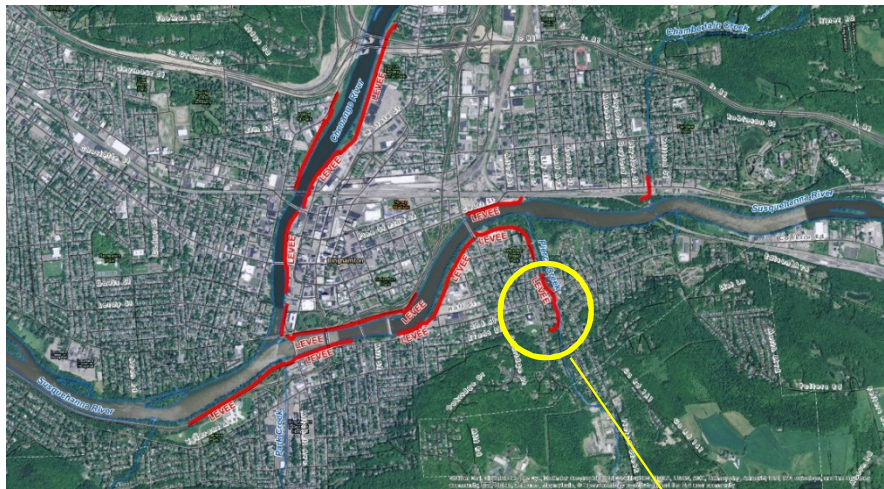
- Stop Logs at Court Street



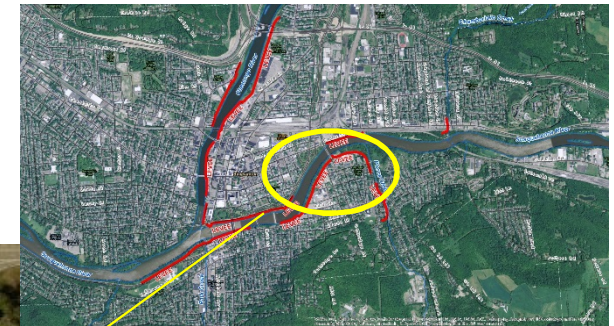
Local Levee System



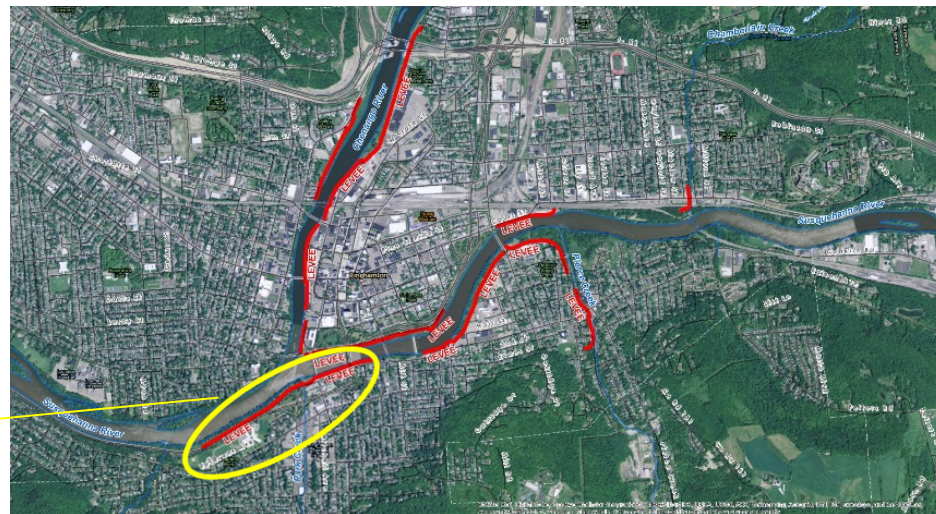
Local Levee System



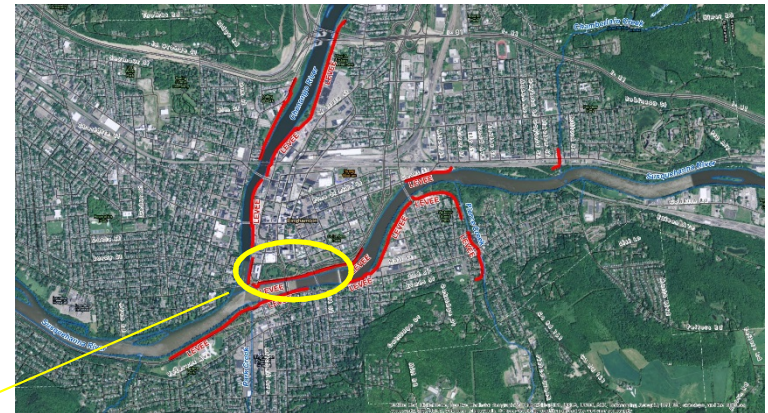
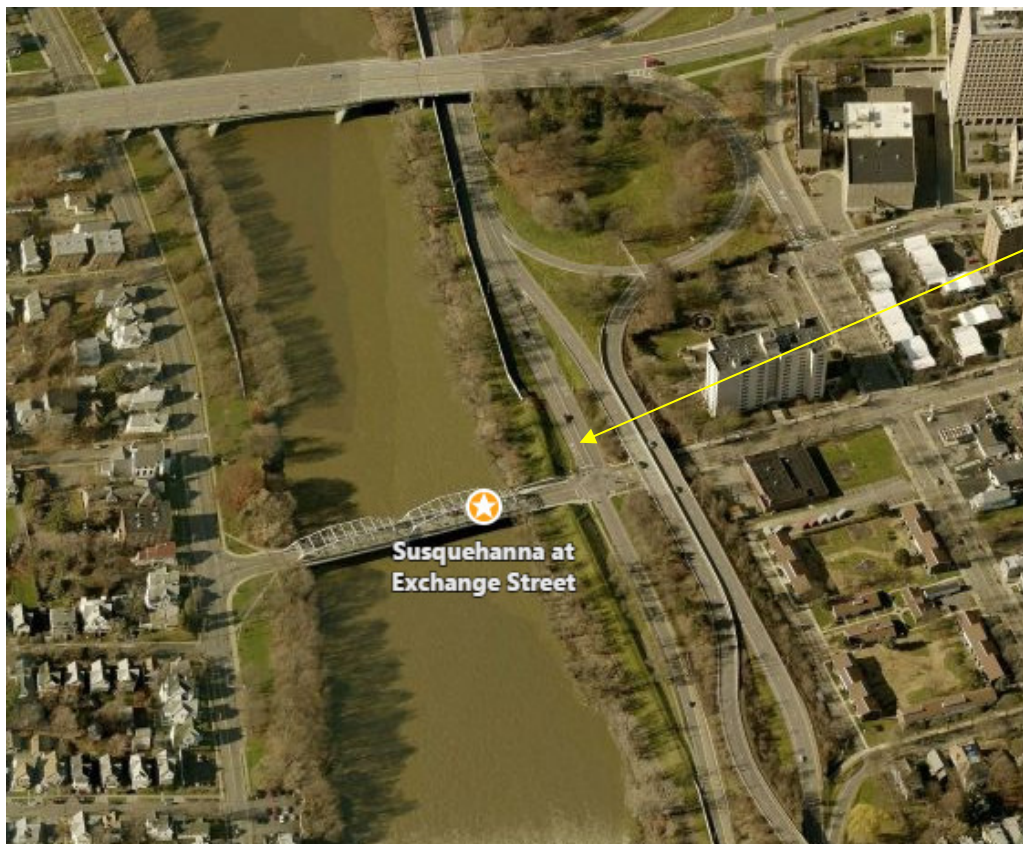
Local Levee System



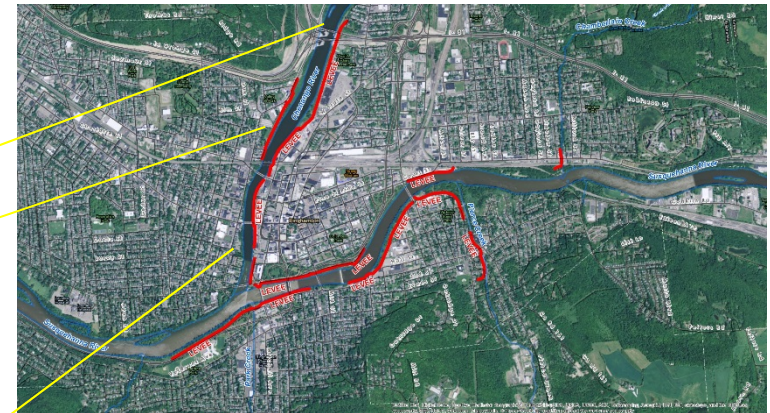
Local Levee System



Local Levee System

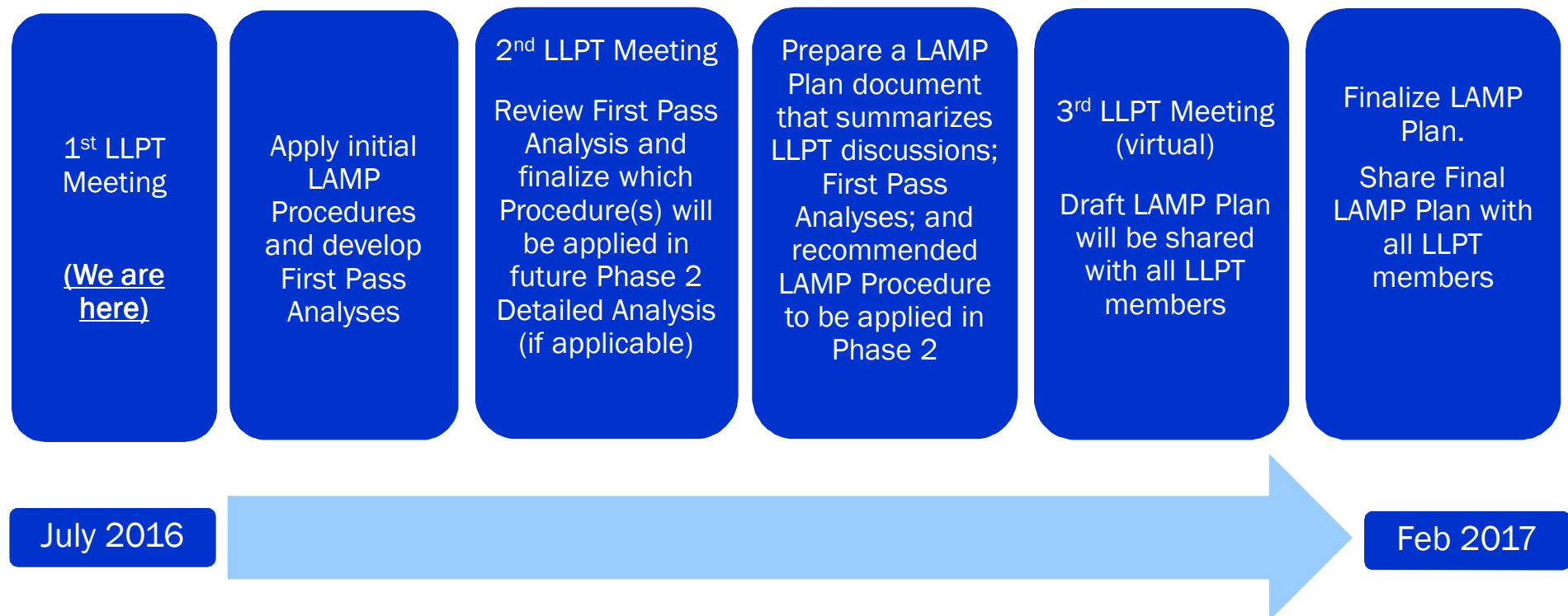


Local Levee System



LAMP Path Forward

■ LAMP - Phase 1

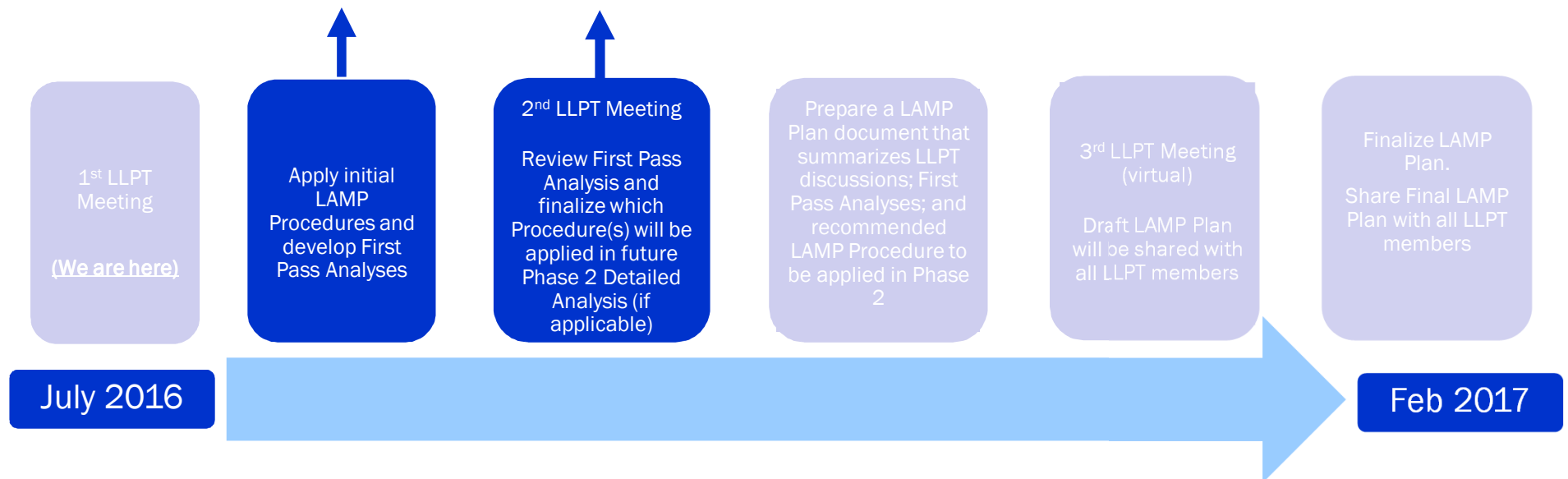


LAMP: Next Step

■ 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.*