



Village of Moravia Levee Flood Hazard Identification

Local Levee Partnership Team (LLPT) Meeting 2

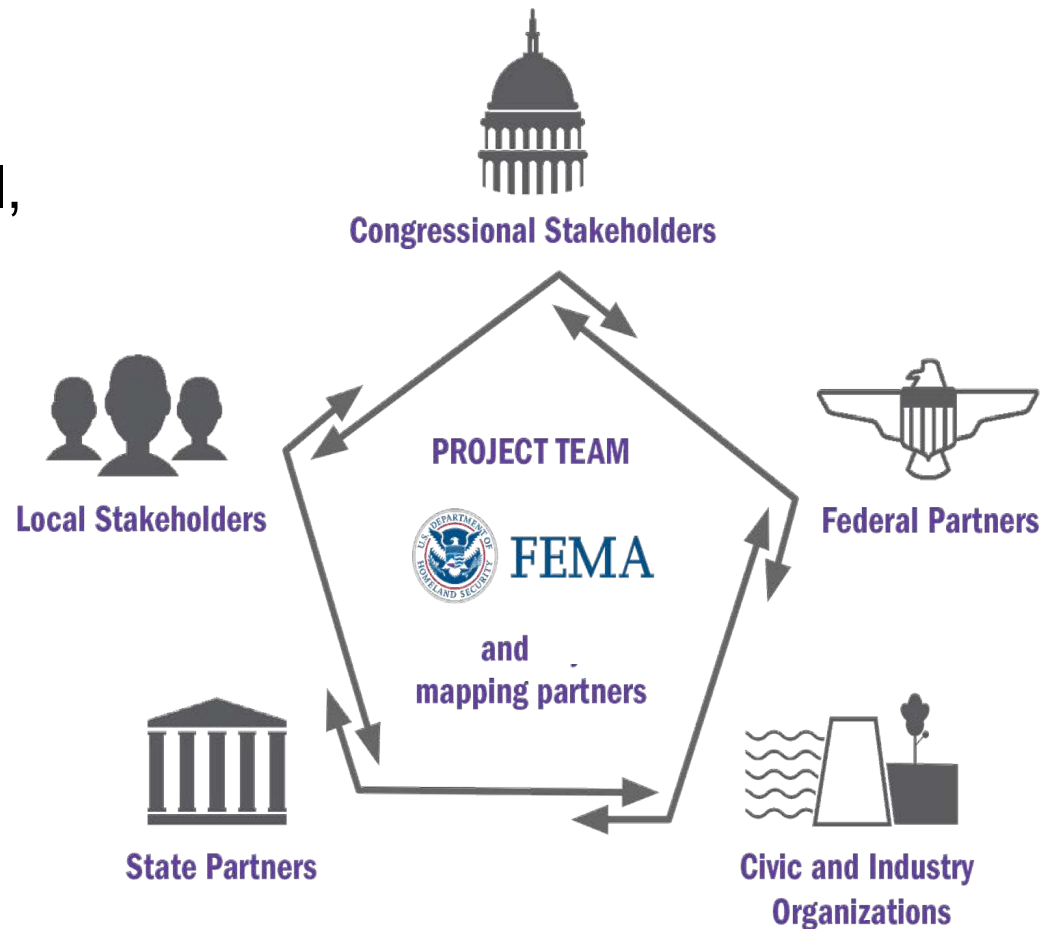
December 14, 2017







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The Focus is on Flood Risk

- The Federal Emergency Management Agency (FEMA) works with federal, state and local stakeholders to assess and communicate flood risks in non-accredited levee impact areas
- The **levee analysis and mapping procedures** approach breaks levee systems into segments for analysis



Today's Goal

1	2	3	4
Review Levee Flood Hazard	Review Results of Initial Data Analysis	Application of Reach Study Procedures	Discuss Next Steps in the Process
			



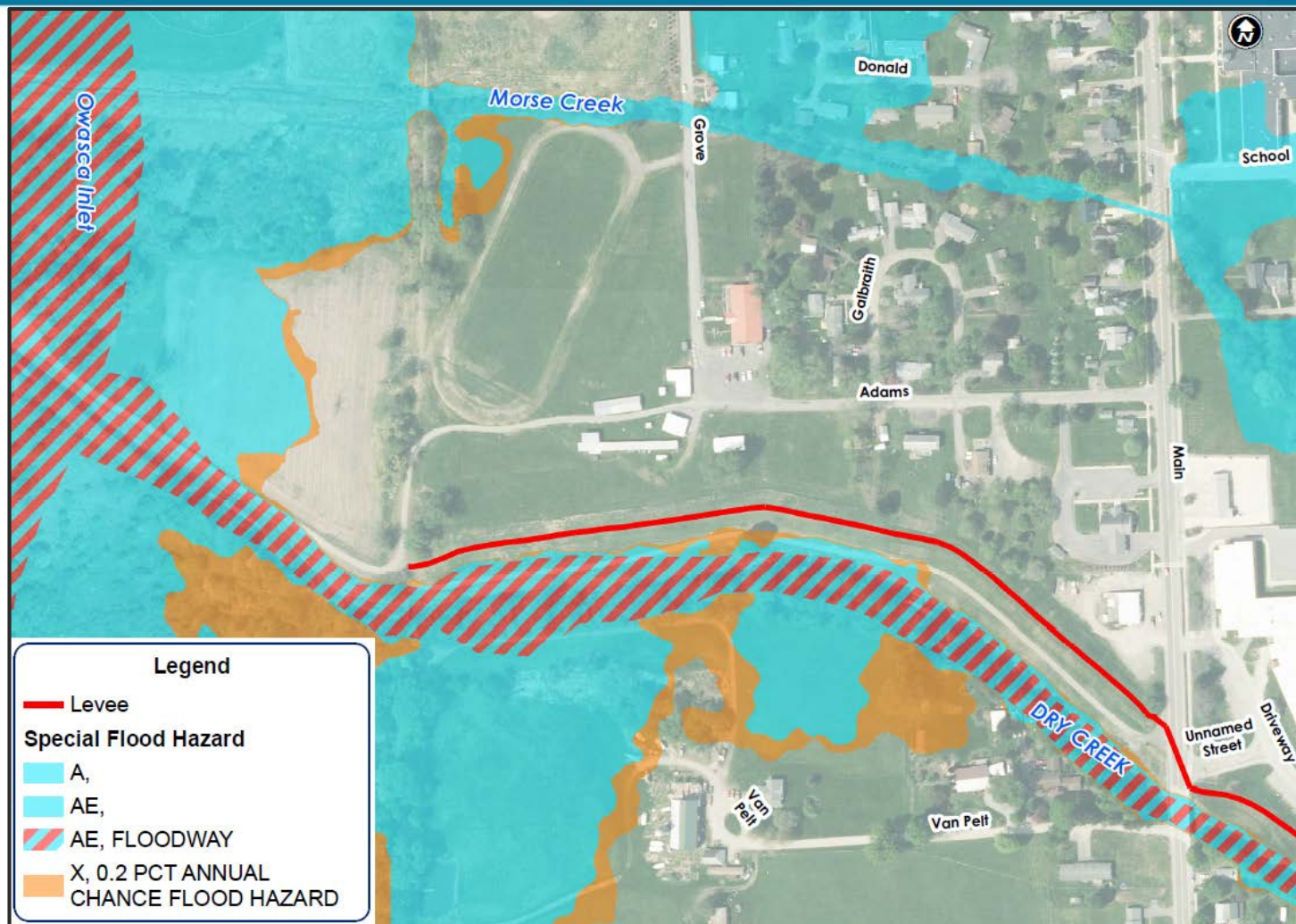
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Review Levee Flood Hazard



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Dry Creek Right Bank Levee System



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First Meeting and Status Update

- ▶ **Initial Stakeholder Engagement Meeting – September 18, 2017**
 - Recap of community issues/questions
- ▶ **Cayuga County Future Mapping**
- ▶ **Reach Procedures**
 - Natural Valley
 - Structural-Based Inundation
 - Freeboard Deficient
 - Overtopping
 - Sound Reach
- ▶ **Any updates from community?**

Results of Initial Data Analysis



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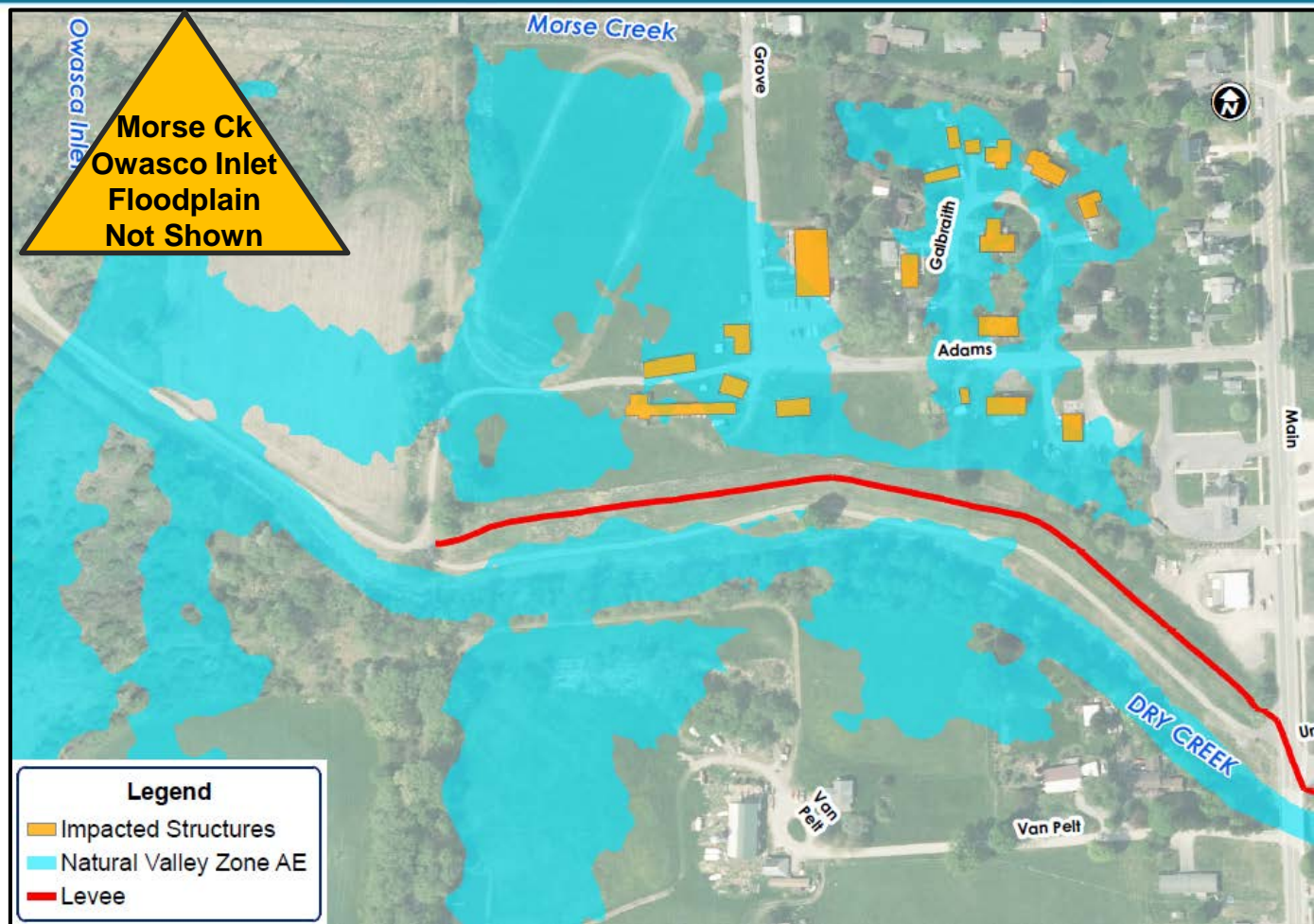
Natural Valley Procedure

Hydrology

- Effective flowrate

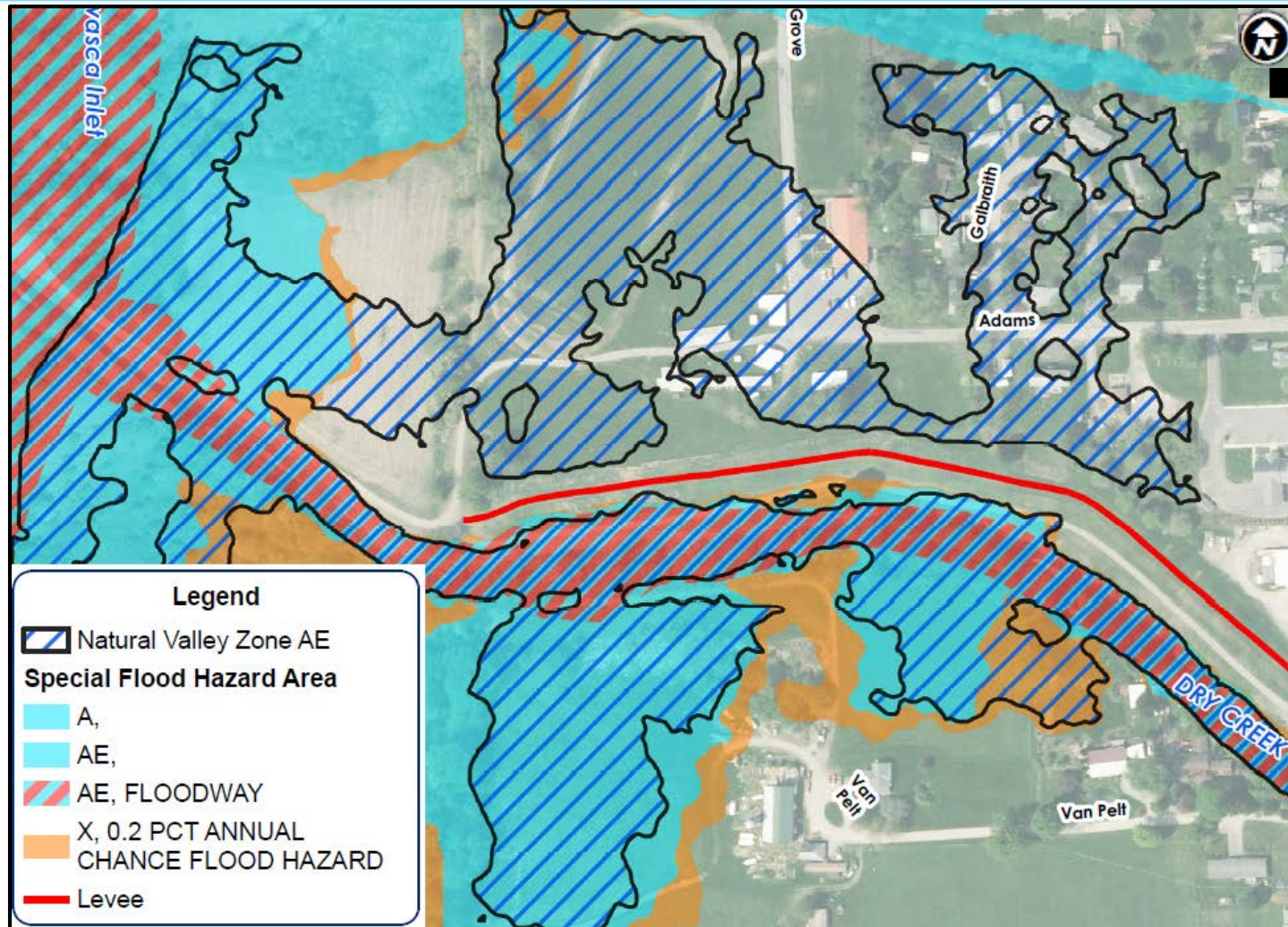
Hydraulics

- HEC-RAS 2D Unsteady Model
- ~ 18 Structures impacted



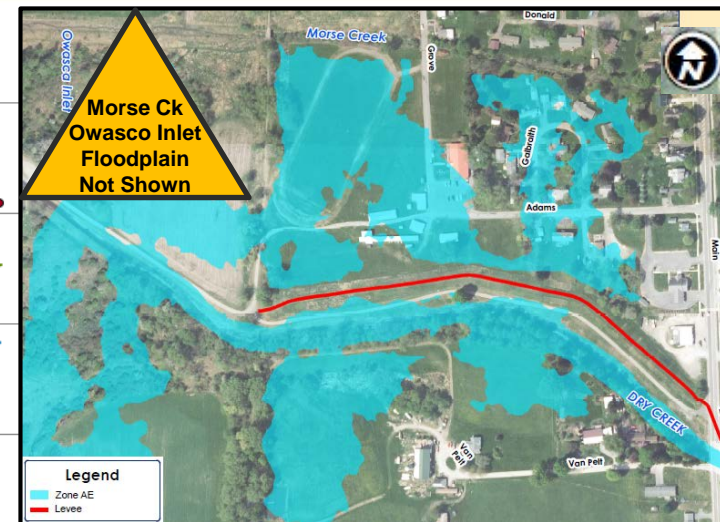
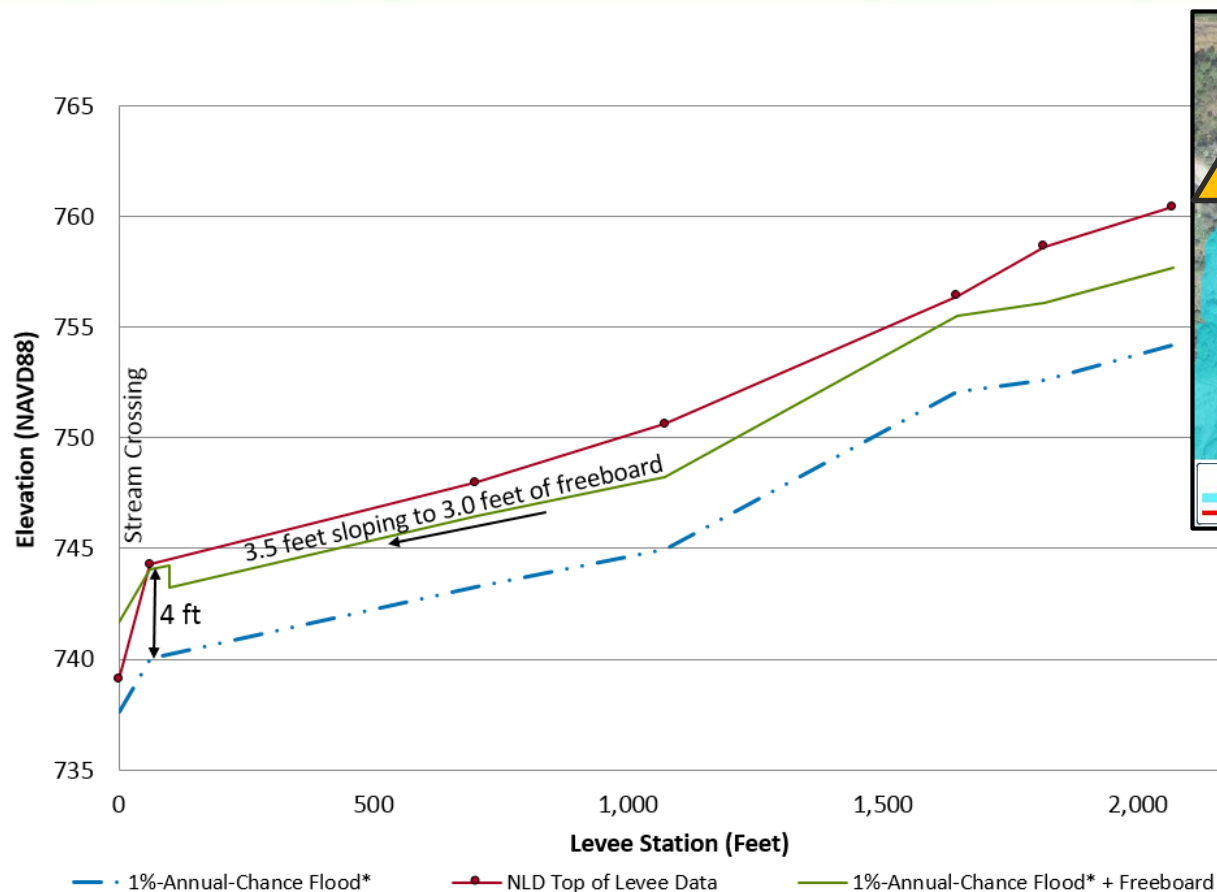
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Natural Valley VS Flood Insurance Rate Map (FIRM)



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Freeboard Analysis

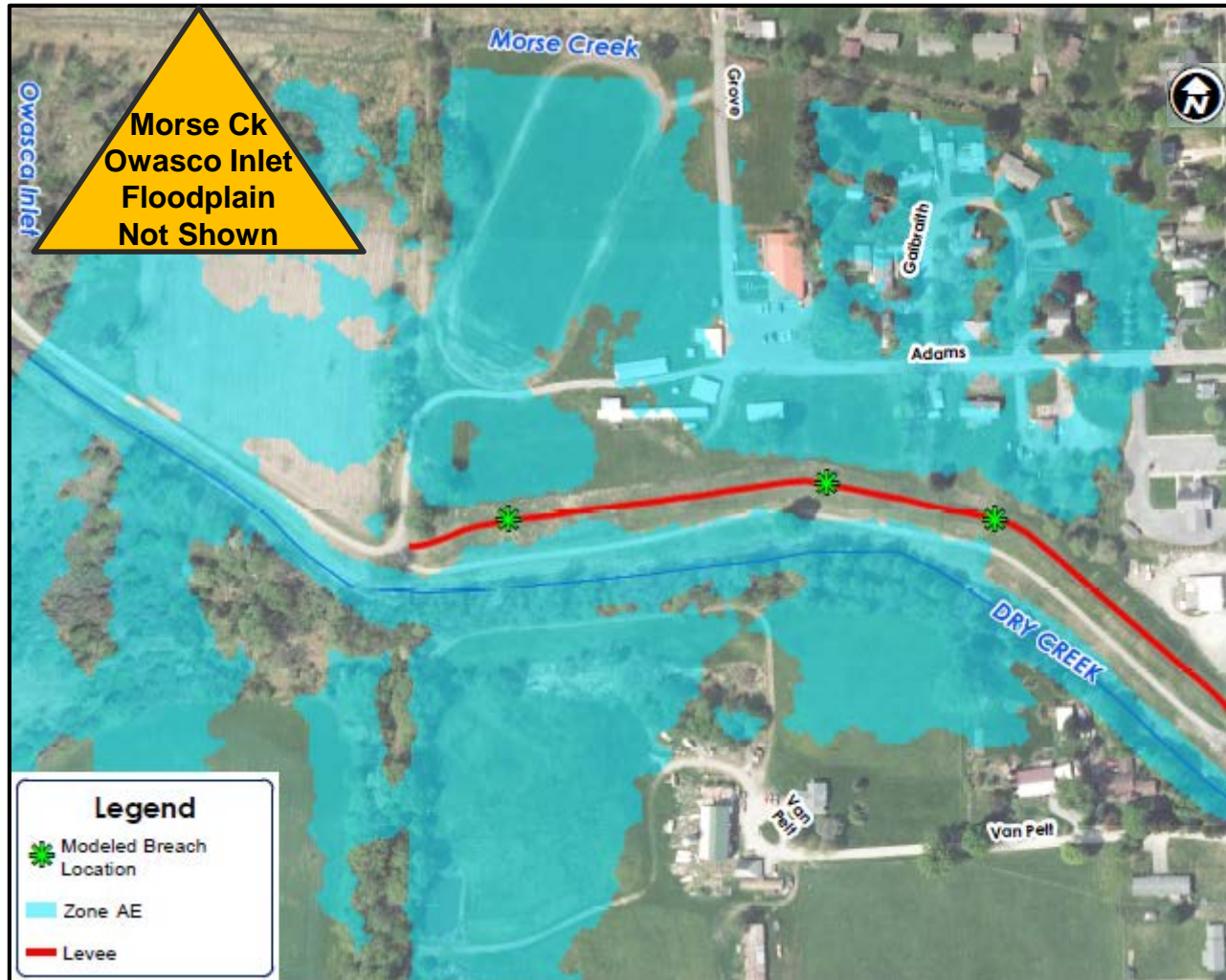


*FEMA Effective Model for Dry Creek



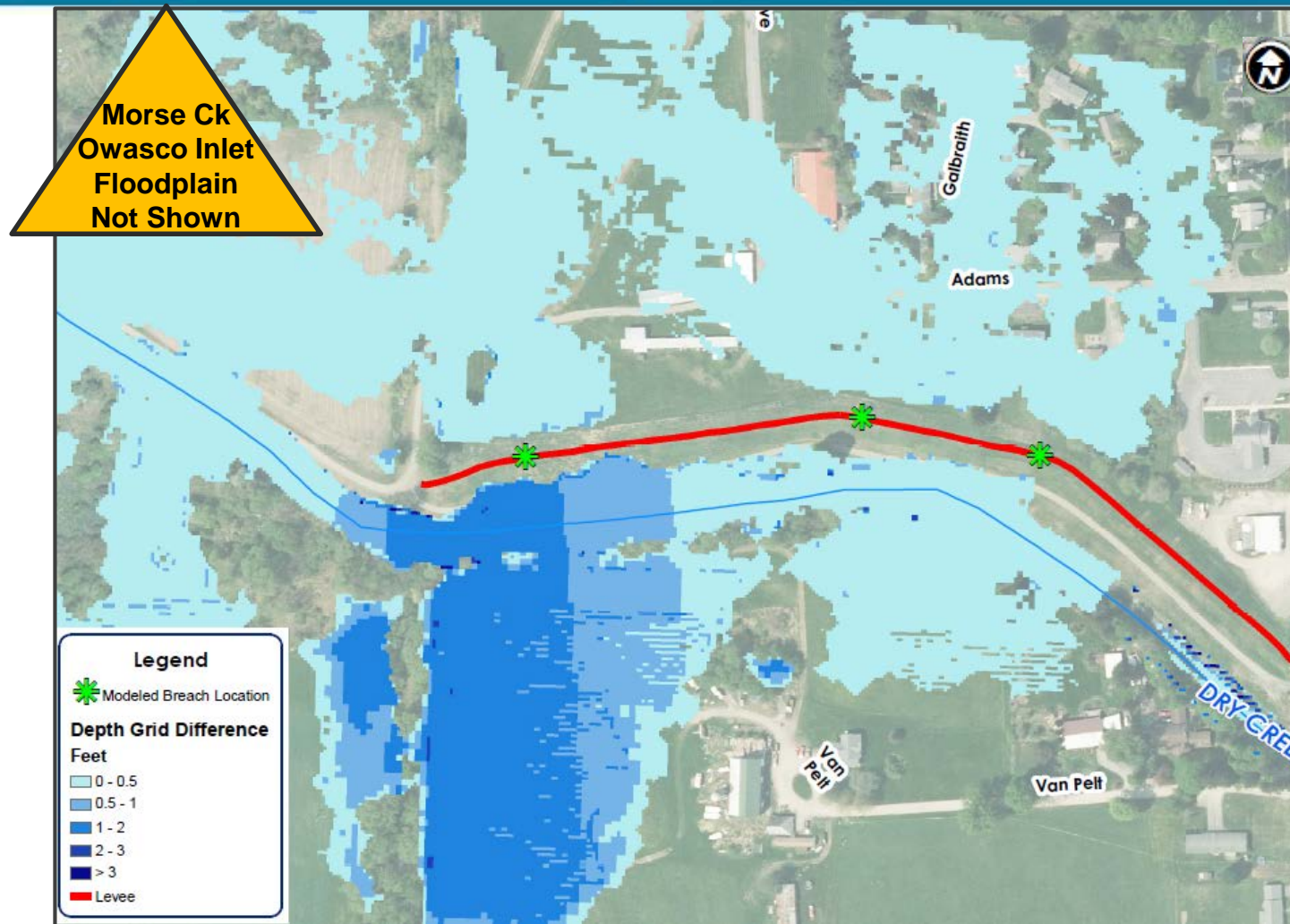
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Structural-Based Inundation (SBI) Procedure



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Increased depth when using SBI Procedure VS Natural Valley



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Application of Reach Study Procedures



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Comparison: Reach Study Procedures

Applicable

- **Natural Valley Procedure**
- **Sound Reach Procedure**
 - 44 CFR 65.10 compliant documentation required

Not Applicable

- **Structural-Based Inundation Procedure**
 - No known vulnerabilities or history of breaching
- **Overtopping Procedure**
 - Levee crest elevated above BFE (also at downstream end)
- **Freeboard Deficient Procedure**
 - 44 CFR 65.10 compliant documentation required, except for freeboard
 - Levee crest must be at or above BFE



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Data Requirements: Reach Study Procedures

	Natural Valley *	Structural-Based Inundation**
Levee Crest Elevation Data	-	Required
Operations and Maintenance Plan	-	Recommended
Structural Design Requirements	-	Recommended
Inspection Reports	-	Recommended
Overtopping Potential Analysis	-	-
BFE below Levee Crest	-	-
BFE + Freeboard Less than Levee Crest	-	-

* - No cost to community

** - Potential additional cost to community



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Data Requirements: Reach Study Procedures

	Overtopping Approach**	Freeboard Deficient**
Levee Crest Elevation Data	Required	Required
Operations and Maintenance Plan	Required	Required
Structural Design Requirements	Required	Required
Inspection Reports	Required	Required
Overtopping Potential Analysis	Required	-
BFE below Levee Crest	-	Required
BFE + Freeboard Less than Levee Crest	-	-

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Data Requirements: Reach Study Procedures

	Natural Valley *	Sound Reach**
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Operations and Maintenance Plan	-	Required
Structural Design Requirements	-	Required
Inspection Reports	-	Required
Overtopping Potential Analysis	-	-
BFE below Levee Crest	-	Required
BFE + Freeboard Less than Levee Crest	-	Required

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Zone D

- ▶ Insurance rates are similar to approximate Zone A
- ▶ Defined as “undetermined, but possible, flood hazards”
- ▶ Because Zone D is not considered an SFHA, SFHA regulations do not apply unless adopted as higher standards
- ▶ Floodplain management requirements are applied *at the discretion of local officials* as long as the community complies with the minimum standards of the NFIP regulations cited at 44CFR § 60.3(a).

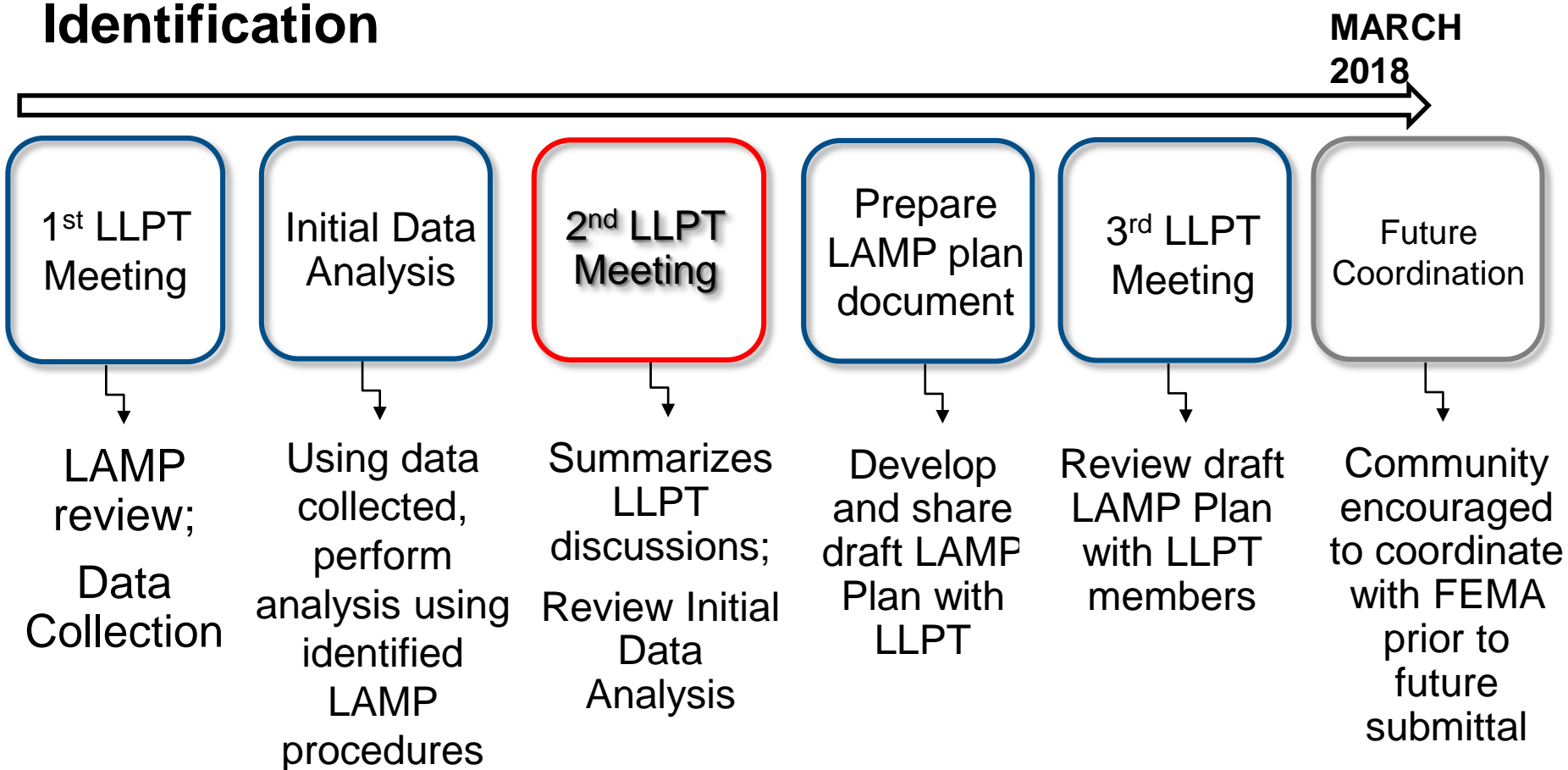
Next Steps in the Process



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Timeline

► Dry Creek Right Bank Levee Flood Hazard Identification



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FEMA's Role

- ▶ FEMA to prepare a Levee Analysis and Mapping plan document that includes:



Summaries
of Data
Collected
and LLPT
Discussions



Results from the
Initial Data
Analysis



Path Forward to
Map Flood Hazard
on Landside of
Levee



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QUESTIONS?

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