

Understanding Flood Risks: Projections and Adaptation Measures

Hatfield Comprehensive Plan Committee – Working Meeting #4
Hatfield Climate-Smart Comprehensive Plan
March 22, 2023

Presenters:
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Overview



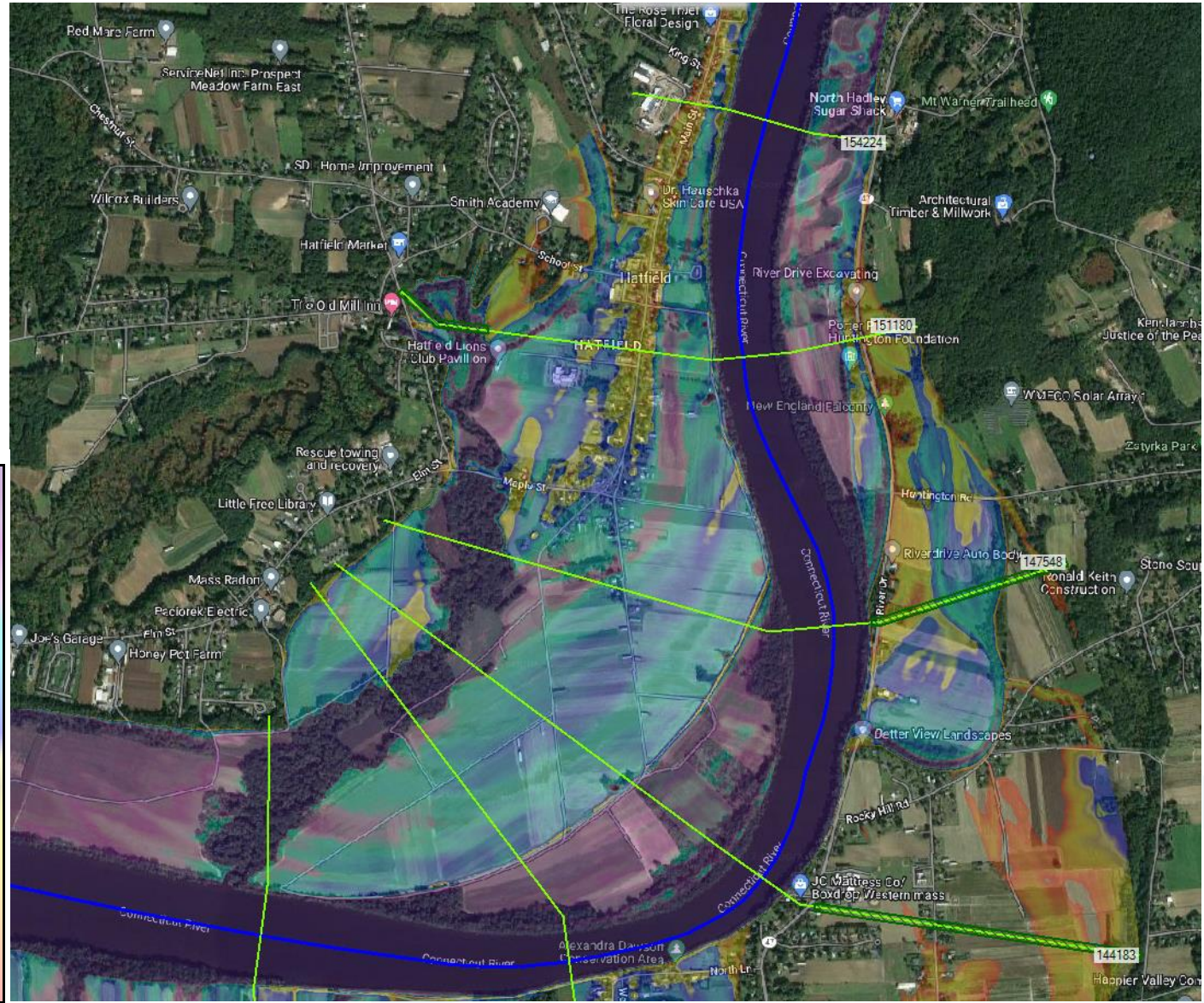
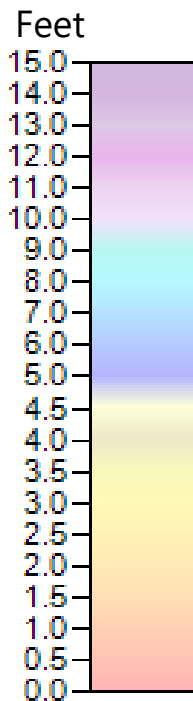
- ▶ CPC Review of Project Work
 - Review of flood scenarios
 - Cross-sections to illustrate flood scenarios
 - Images and illustrations
 - Discussion of mitigation and adaption strategies
- ▶ Next Steps
 - Report narrative
 - Final deliverables



Review of Flood Scenarios

► Future flow consideration

- 182,000 cfs = FEMA updated base flood flow
- 15% increase in flows – using % change from **2019 UMass/MassDOT study**
 - Looks at climate projections through 2100
- 209,300 cfs = future flow scenario





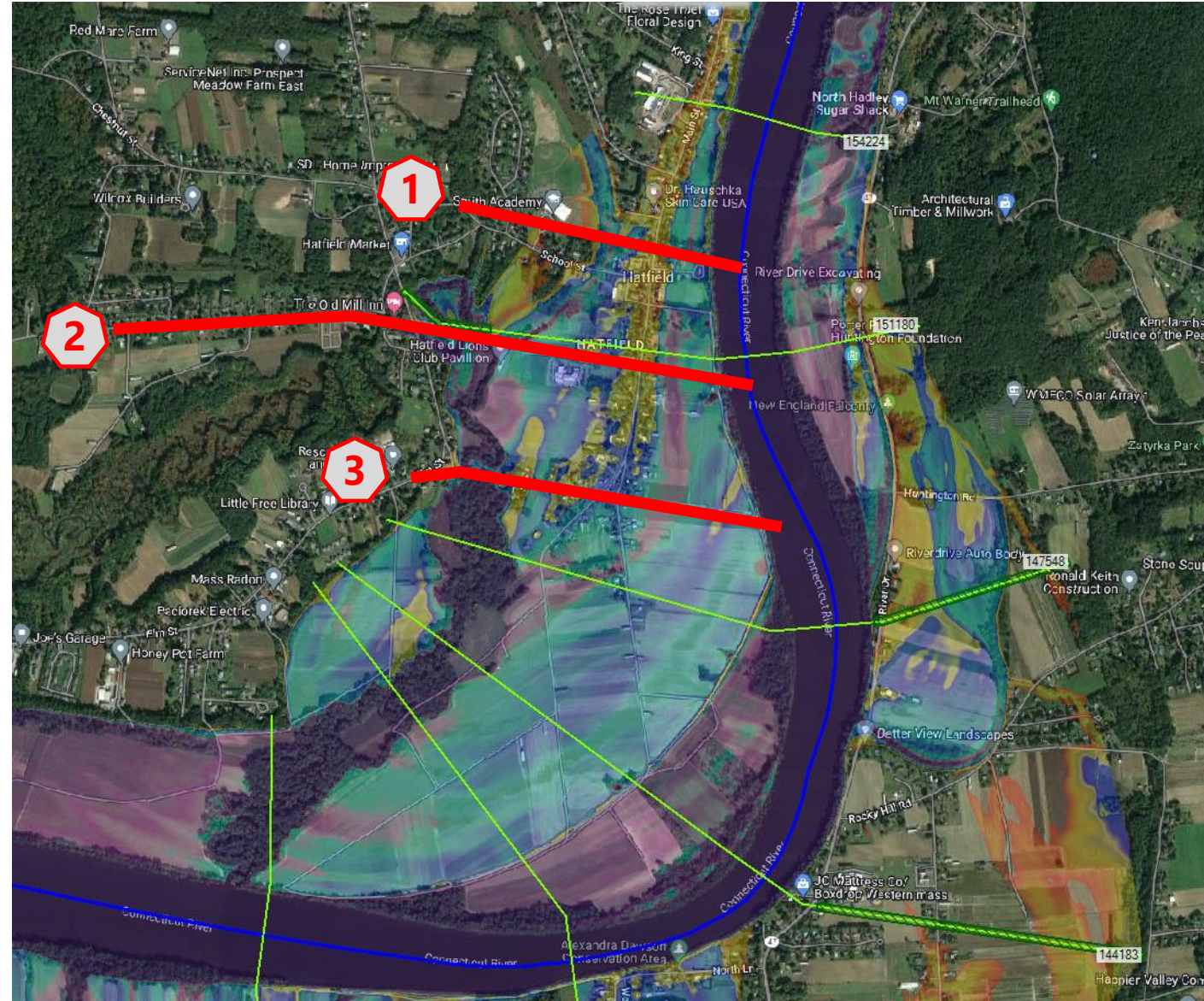
Review of Cross-sections



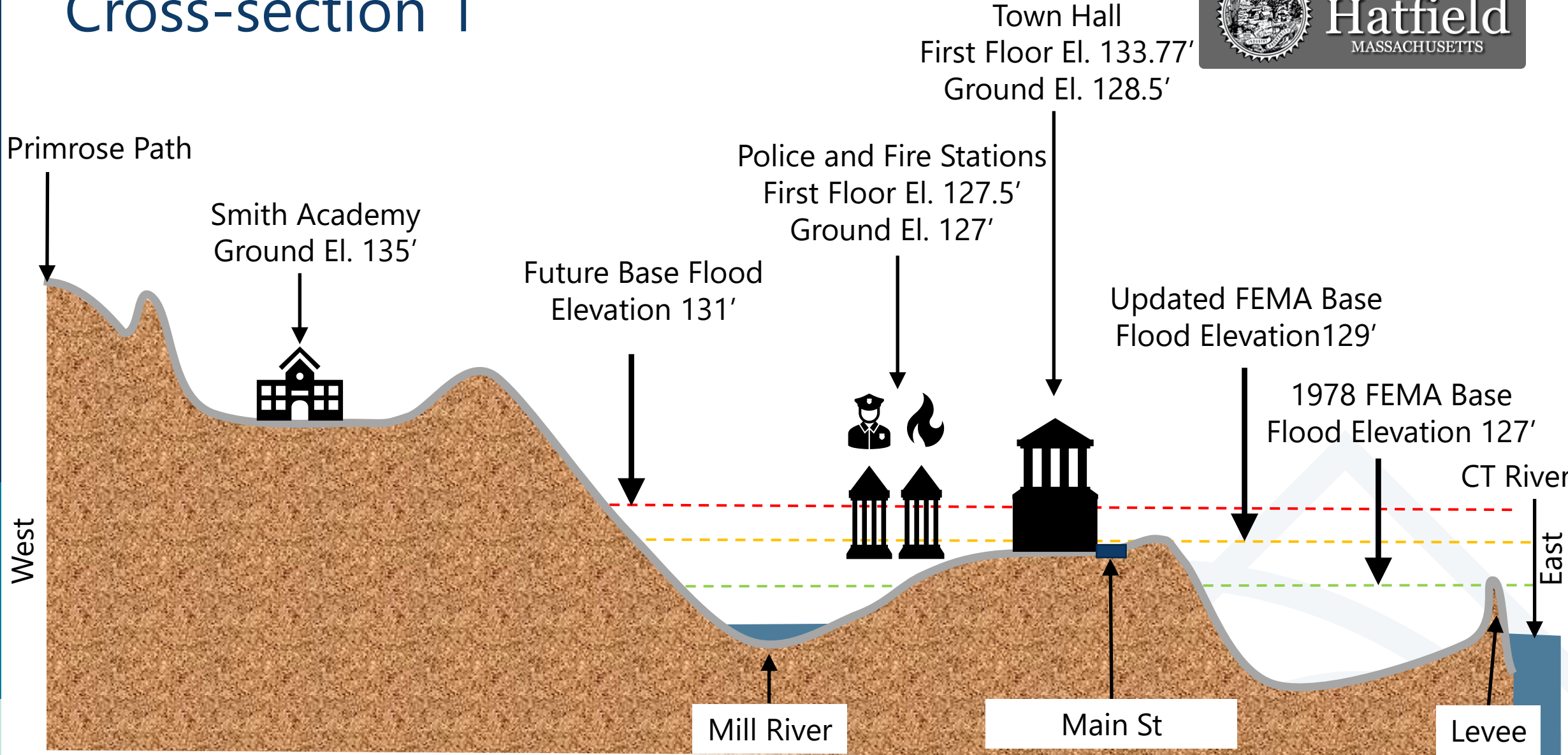
CPC Review of Project Work



- ▶ Cross-sections for critical areas based on prior CPC input:
 1. Chestnut St to School St to Town Hall/Main St to Levee to CT River
 2. Bridge St to Elementary School to Main St to Levee to CT River
 3. Elm St to Maple St to Levee to CT River



Cross-section 1



Town Hall



- First Floor = EL 133.8
- Projected Climate Change EL 131
- Updated FEMA BFE = EL 129
- 1978 FEMA BFE = EL 127

Real First Floor = EL 122 (Est)
Offices in basement

Fire Department



- Projected Climate Change EL 131
- Updated FEMA BFE = EL 129
- First Floor = EL 127.5
- 1978 FEMA BFE = EL 127

Smith Academy



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High & Dry

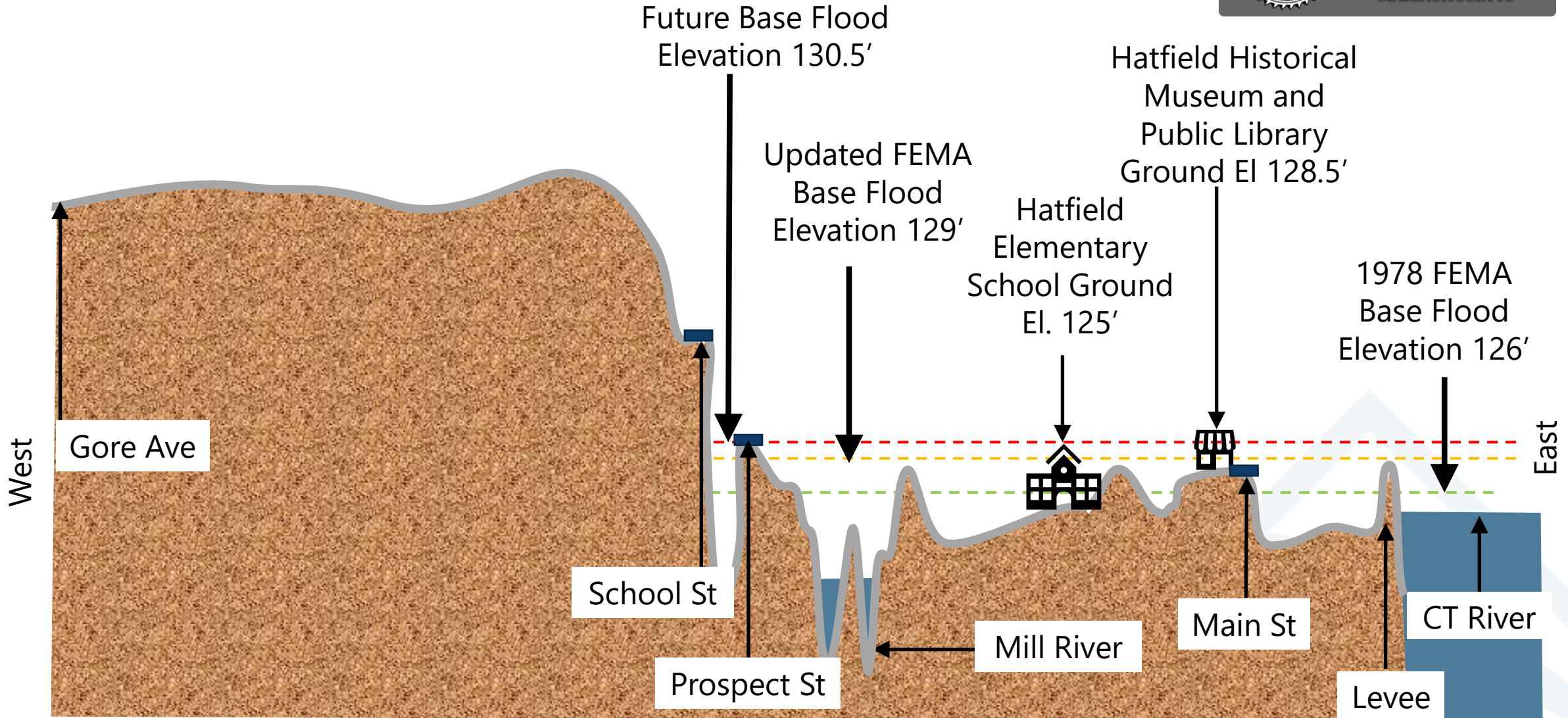
First Floor = EL 135

Projected Climate Change EL 131

Updated FEMA BFE = EL 129

1978 FEMA BFE = EL 127

Cross-section 2

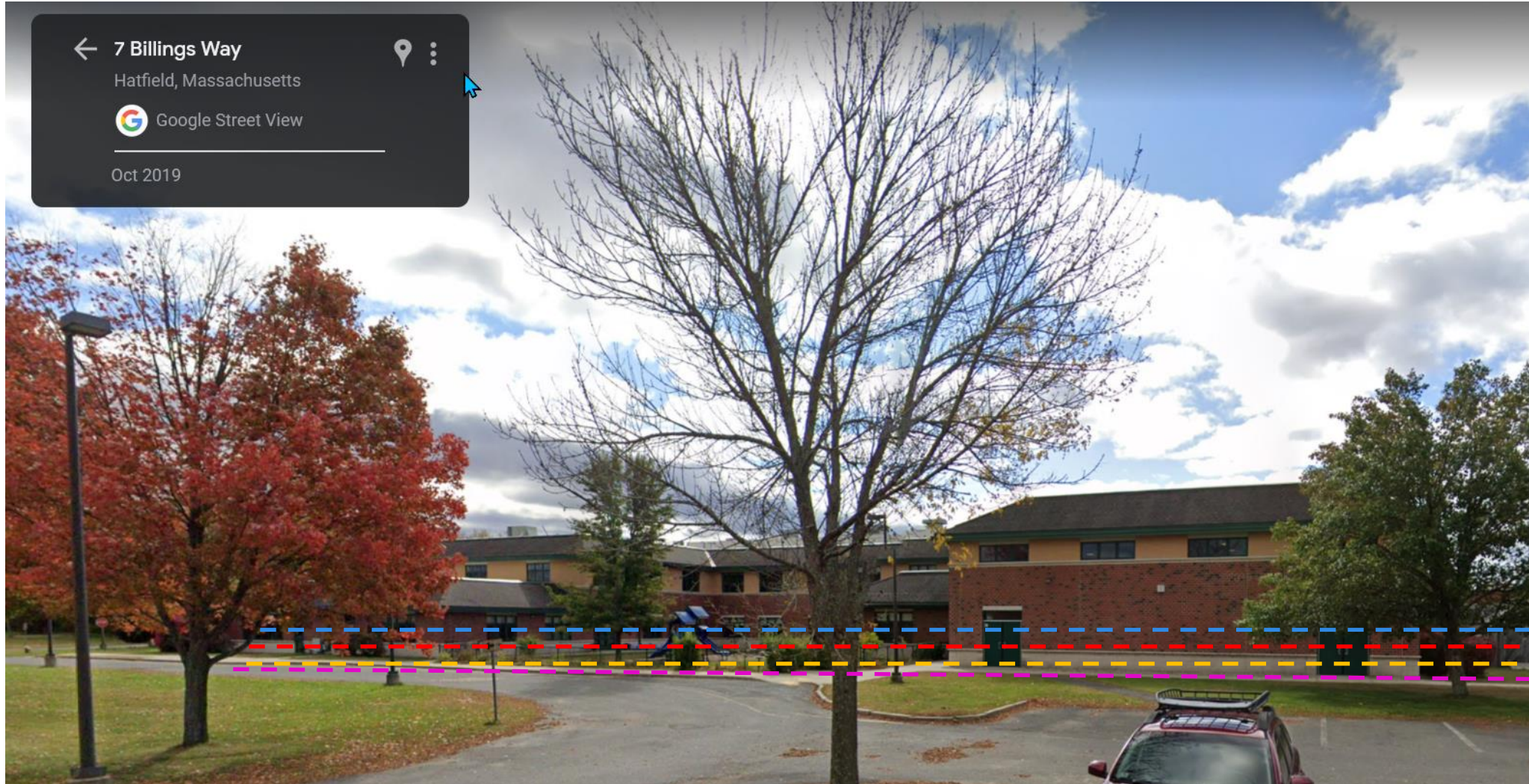


Historical Museum and Library



Projected Climate Change, EL 130.5
Updated FEMA BFE, EL 129
First Floor EL 128.5
1978 FEMA BFE = EL 126

Hatfield Elementary



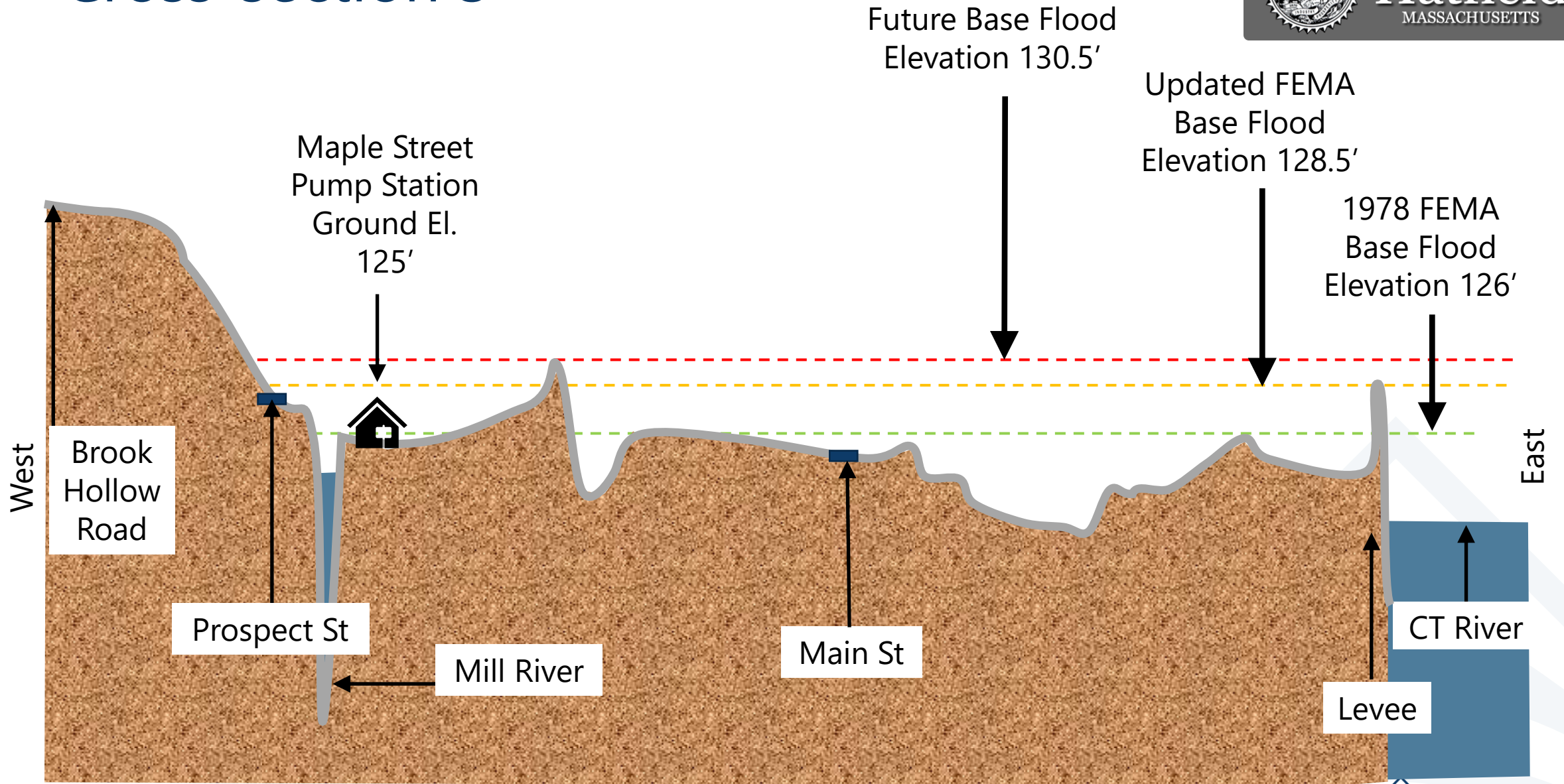
Projected Climate Change, EL 130.5

Updated FEMA BFE, EL 129

1978 FEMA BFE = EL 126

First Floor / Ground, EL 125

Cross-section 3



Maple Street Pump Station



- Projected Climate Change EL 130.5
- Updated FEMA BFE, EL 128.5
- 1978 FEMA BFE = EL 126
- First Floor / Ground, EL 125



Mitigation and Adaptation Strategies



Maintain the Protection You Have



Protect & Maintain your levee.

It may not protect you from the 1% event, but it will have some protection form the lessor more frequent ones.

Flood Proof Strategies





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Elevation Strategies



Elevate Structures

**“Dr. Hauschka Skin Care”
Main St.**

Dry Proof Strategies

► Protect with.....

1. Barriers



Redirect water from entering the Facility

2. Wetproofing



Allow water to flow through the Facility

3. Dryproofing



Block water from entering buildings

4. Elevation Changes



Raising the elevation of the Facility higher than flood depths

5. Relocation

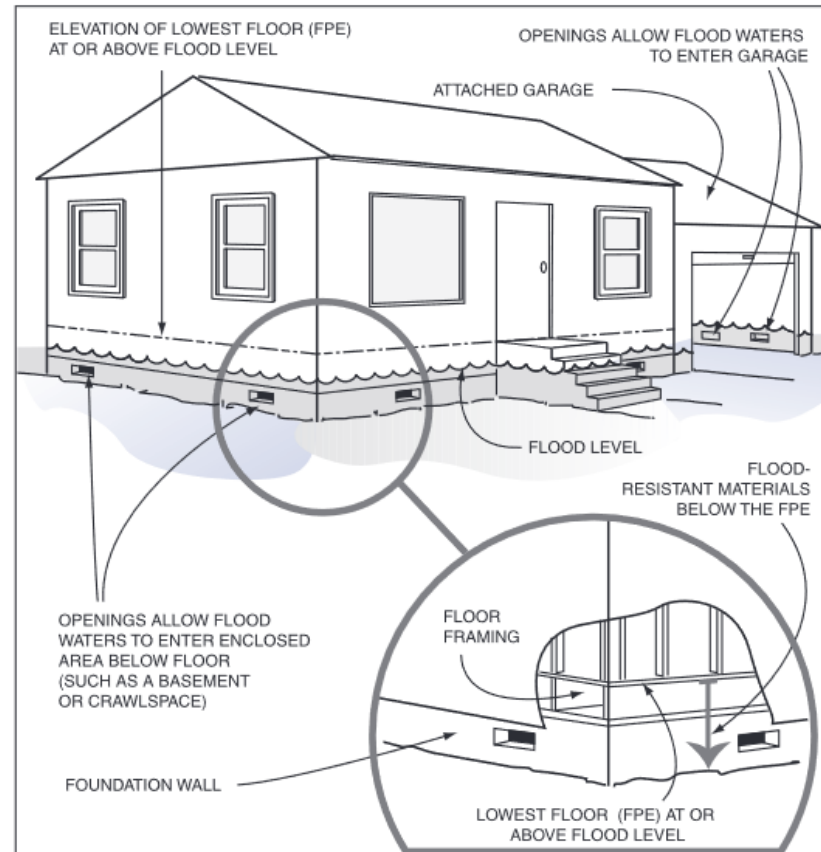
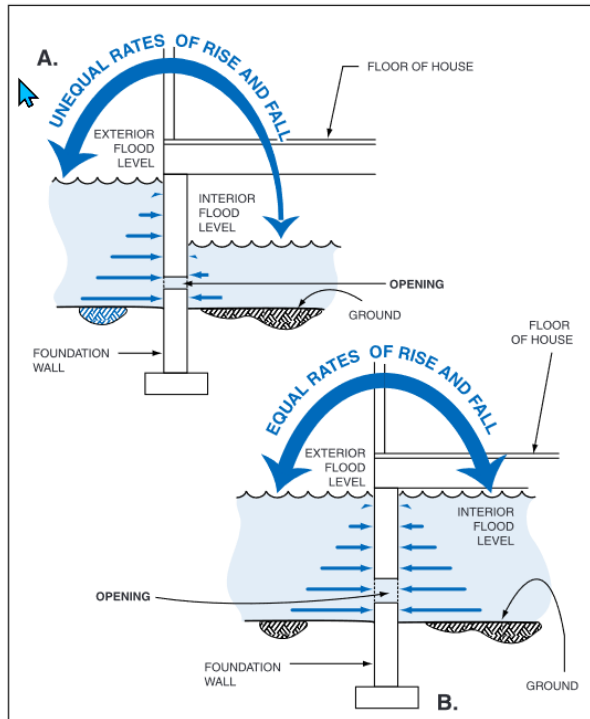
Relocate the DPW Facility outside of the floodplain

Wet Flood Protection Strategies

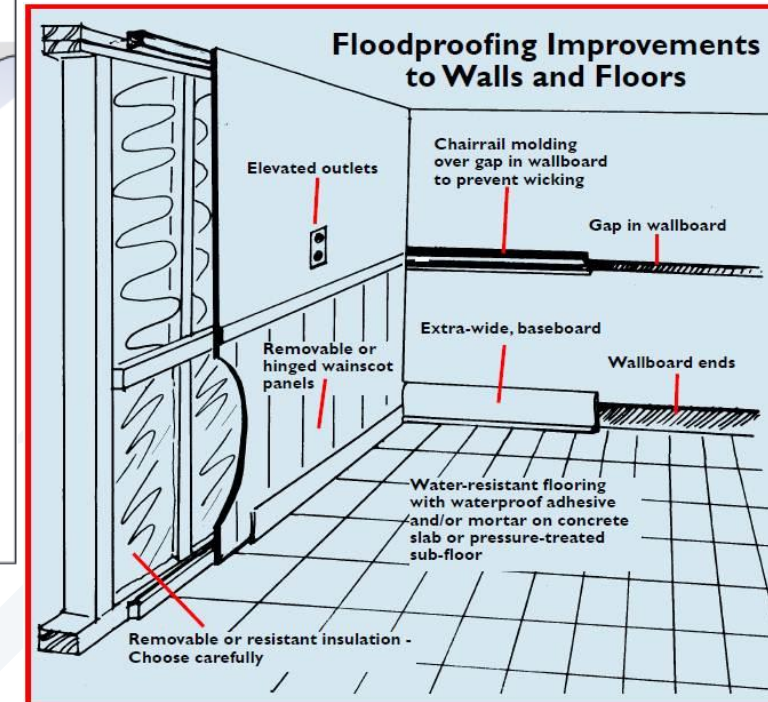
2. Build with flooding in mind

► Protect with.....

1. Vents allow water to flow



Build with Flood resistant material's
Elevate electrical



Reduce Damage to Facility



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Relocate



Next Steps

- ▶ Updated technical results:
 - Additional floodplain projections
 - Flood inundation depth updates
 - Incorporation of additional building floor elevations, if available
 - Cross-sections for critical areas
- ▶ Further discussion of mitigation and adaptation strategies:
 - Initial thoughts on strategies (pros/cons, feasibility)
 - Risk tolerance and level of investment
 - Recommended strategies



Project Team

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