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Montgomery, Vermont Flood Hazard Modeling & Project Identification

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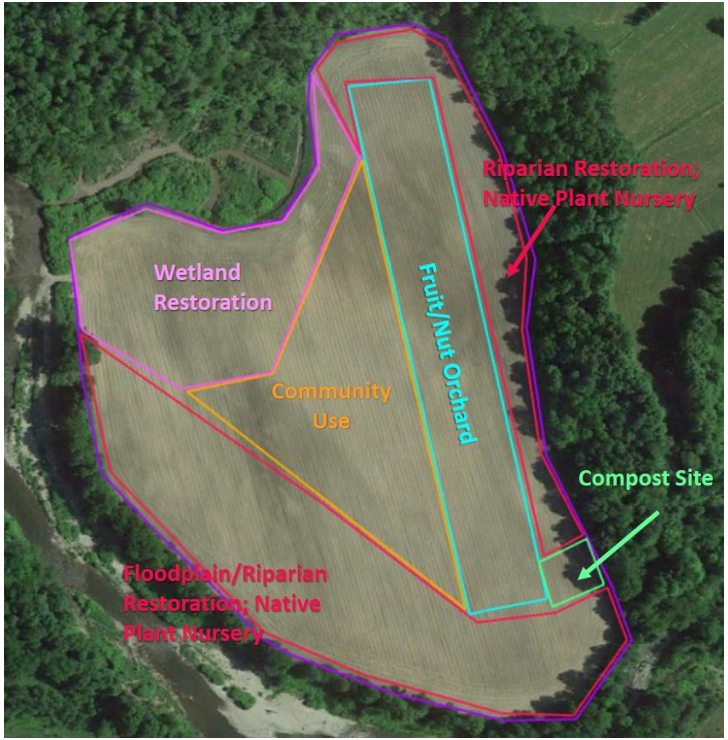
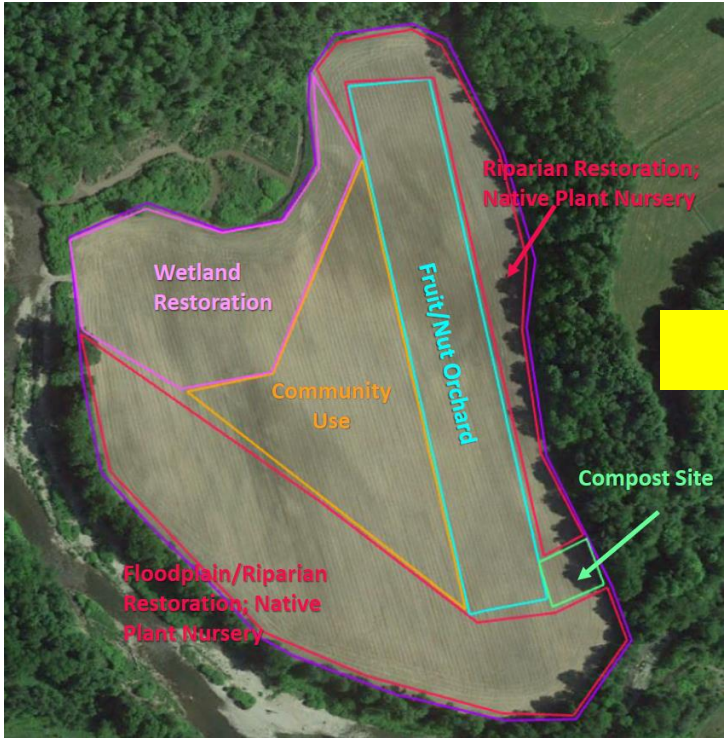
SLR


Riparian Restoration; Native Plant Nursery
Wetland Restoration
Fruit/Nut Orchard
Community Use
Compost Site
Floodplain/Riparian Restoration; Native Plant Nursery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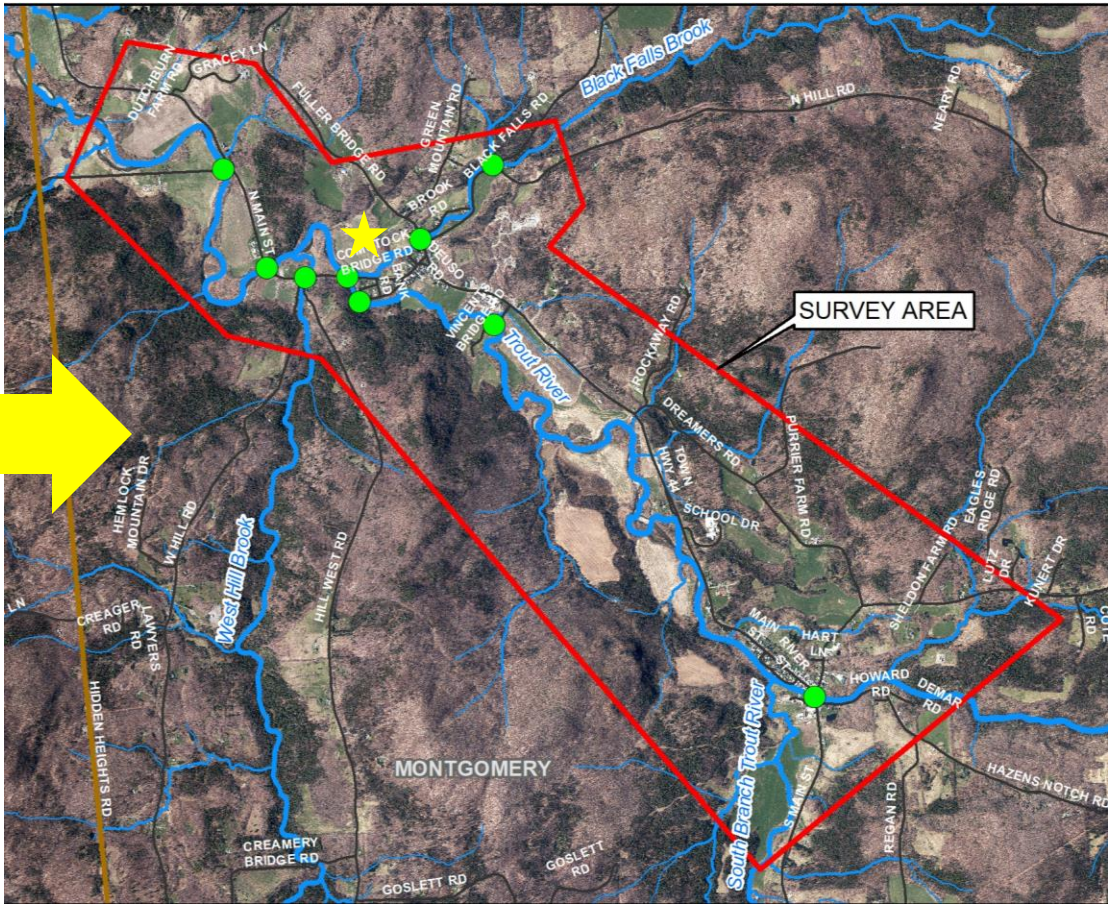

SURVEY AREA
Black Falls Brook
Trout River
West Hill Brook
South Branch Trout River
MONTGOMERY
GRACEY LN
FULLER BRIDGE RD
GREEN MOUNTAIN RD
BLACK FALLS RD
N HILL RD
NEARY RD
N MAIN ST
COMSTOCK BRIDGE RD
BROOK RD
DEUSO RD
VINCENT MILL BRIDGE RD
ROCKAWAY RD
DREAMERS RD
PURRIER FARM RD
TOWN HWY 44
SCHOOL DR
EAGLES RIDGE RD
KUNERT DR
SHELDON FARM RD
HEMLOCK MOUNTAIN DR
W HILL RD
HILL WEST RD
CREAGER RD
LAWYERS RD
HIDDEN HEIGHTS RD
CREAMERY BRIDGE RD
GOSLETT RD
MAIN ST
RIVER ST
HART LN
HOWARD RD
DEMAR RD
REGAN RD
HAZENS NOTCH RD


Mississippi River Basin


VGI, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, VGS, Maxar

Flood Hazard Modeling & Project Identification

Understand Flood Issues and Patterns

- Aerial survey – begins April 21
- Bridge surveys
- Hydraulic models

Identify Possible Mitigation Projects

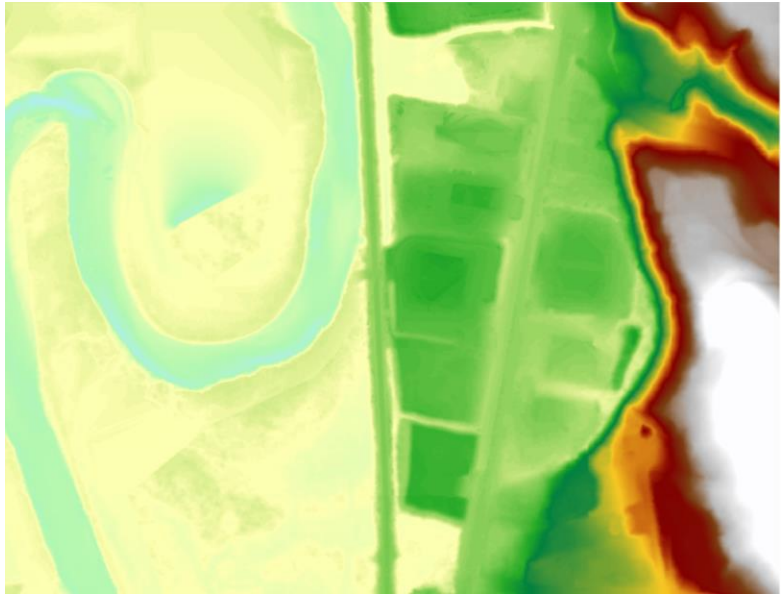
- Visit sites
- Collect ideas from residents

Test Identified Alternatives

- Model possible projects in hydraulic model
- Consider constraints and project goals

Concept Design

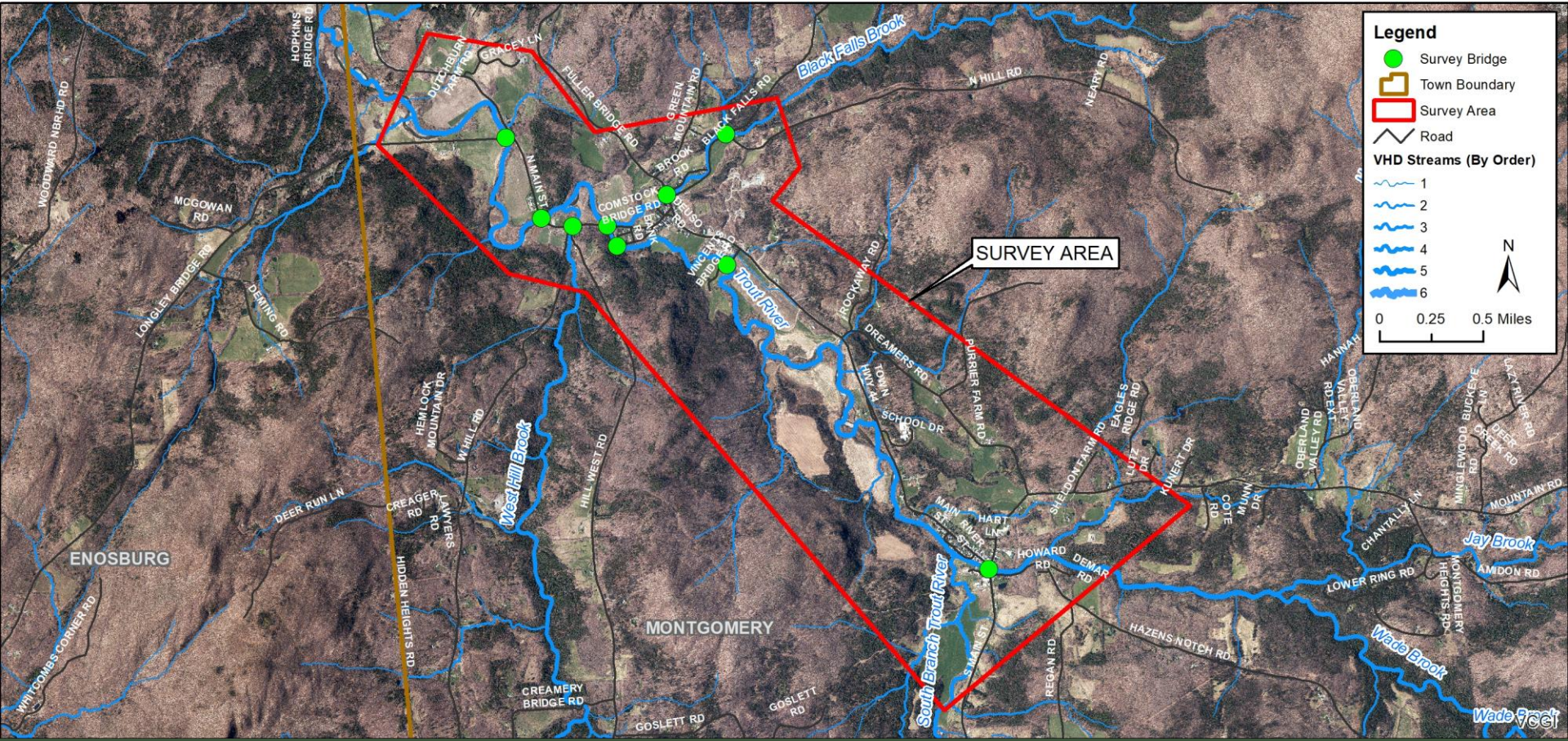
- Develop the top 5 projects to start the design process



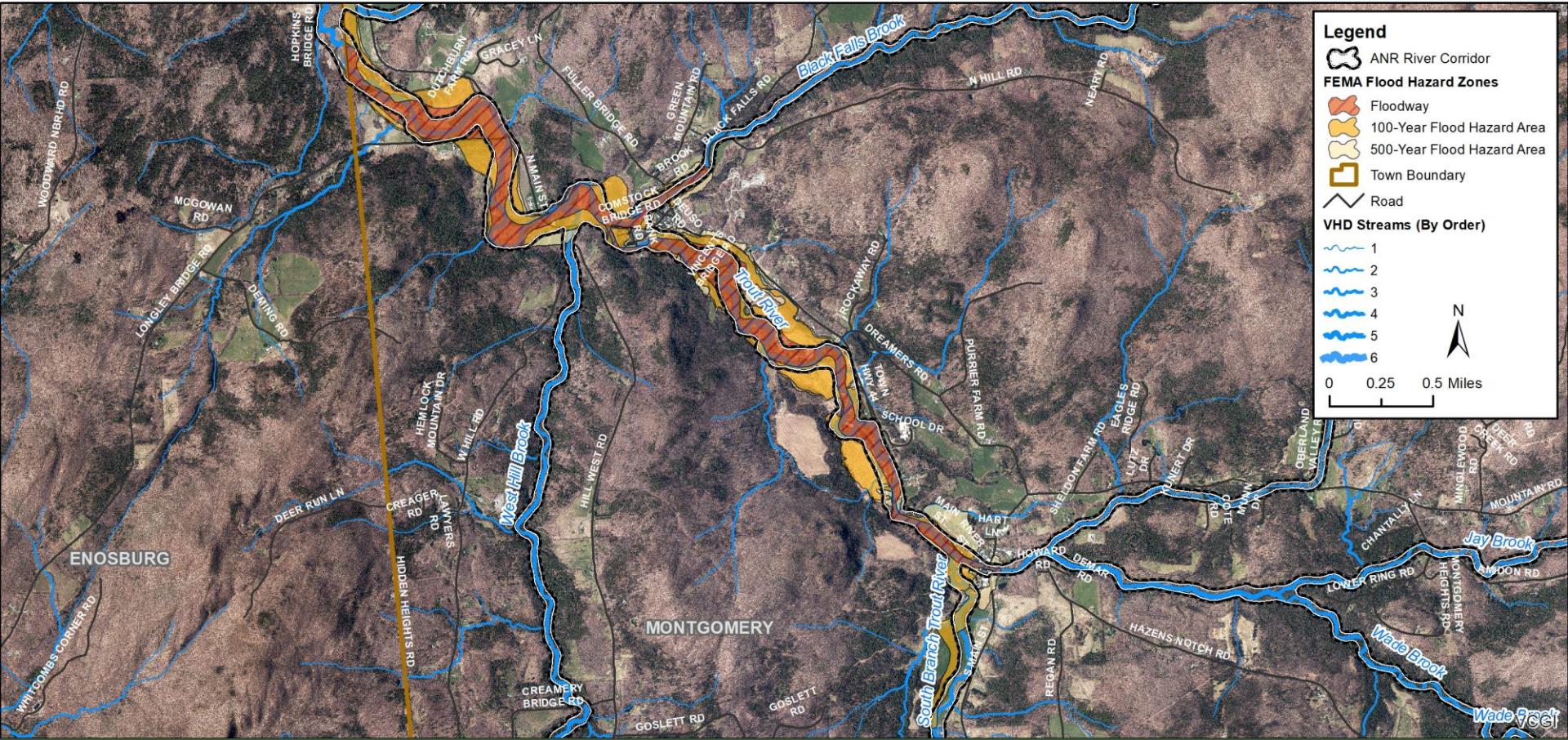
Tasks & Schedule

		2024																					
		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec			
Task 1. – Data Collection & Project Initiation																							
1.1	Project Kickoff Meeting #1																						
1.2	Data Review																						
1.3	GIS basemap																						
1.3	Site Visit, RAPID Geomorphic Assessment																						
1.4	Field Survey																						
Task 2. – Hydraulic Modeling																							
2.1	Hydraulic Model with LIDAR and Survey																						
2.2	Model Validation																						
2.3	Existing Conditions and Hydraulics Memo																						
2.4	Initial list of alternatives																						
2.5	Meeting #2																						
Task 3. – Alternatives Analysis																							
3.1	Explore Restoration and Flood Mitigation Alternatives																						
3.2	Flood Path and Velocity Mapping																						
3.3	Alternatives Matrix to Summarize Results																						
3.4	Meeting #3																						
3.5	Concept Design (30%)																						
Task 4. – Reporting & Presentations																							
4.1	Draft Report																						
4.2	Meeting #4																						
4.3	Final Report																						
4.4	Meeting #5																						

Project Area



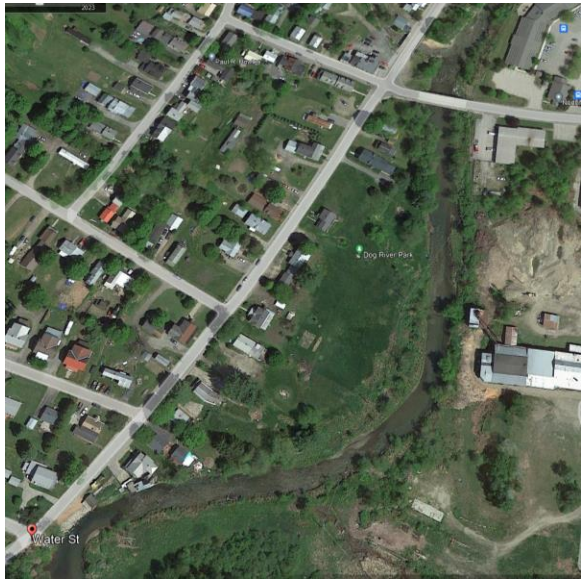
Project Area – Flood Hazard Zones



Dog River Floodplain Restoration – Northfield

Removing buildings & people & infrastructure from most vulnerable locations

- Remove 10 damaged homes
- Remove 9,000 CY fill in floodplain & lower land average 4 feet
- Remove berm
- Plant restored 3-acre floodplain with native vegetation



Greenway Trail Bridge Replacement– Jeffersonville

Removed constriction

- An undersized bridge and unused abutments were removed
- Larger bridge installed
- Opened up floodplain under bridge

Melrose Terrace, Brattleboro – Overflow culvert at bridge

10/28/2020

Pre-construction

6/19/2023

Post-construction

Melrose Terrace, Brattleboro – Floodplain

Removing buildings & people & infrastructure from most vulnerable locations

- Remove 11 buildings
- Relocate road
- Relocate sewer main / utilities

Increase floodplain storage capacity

- Remove 28,000 CY fill in floodplain & lower land average 5 feet
- Plant restored 4.4-acre floodplain with native vegetation

2011 Flooding around Buildings

12-23-2022

Flood Mitigation Analysis / Project Identification

Constrictions

- Bridges, culverts, or other structures that pinch the river
- Natural narrow spots
- Fill or buildings constraining the river

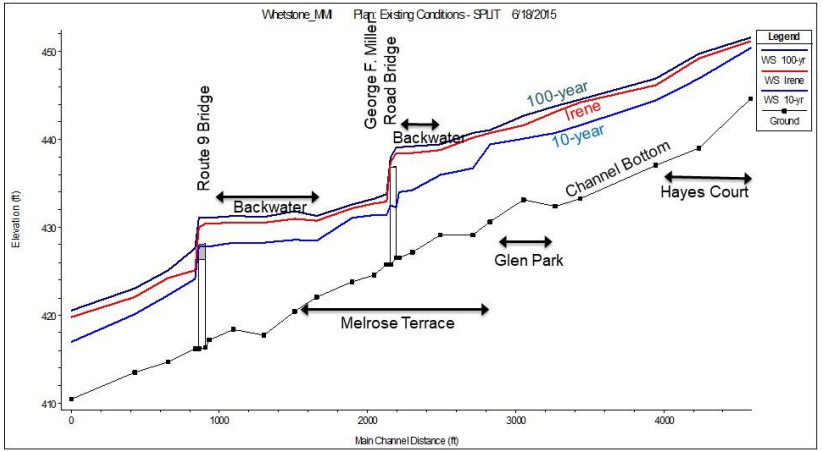
Fill or High Land

- Are there areas where the river could be given more space to hold flood waters

Areas with Prior Damage

- Where has repeated damages occurred?
- Road washouts
- Buildings flooded
- Ongoing erosion damage

Profile: Existing Conditions



We need your input, as you have lived through floods.

We know about some past damage/changes…

- Flooding in July 1997: Damage extended from upstream of Montgomery Center to downstream of Longley Bridge Road
  - NRCS has record of 10 federal contracts covering 26 projects paid out over $501,610 in Montgomery (according to NRCS Emergency Watershed Protection Program Engineer Michel Lapointe). High water mark at 427.9 ft (NGVD29).
    - Several streambank projects along West Hill Brook and on the Trout River
    - Riprapping sections to protect Black Falls Road upstream of the covered bridge and downstream of the covered bridge
    - A project upstream of Vincent's Bridge Road on Trout River
    - A $86,000 gabion project to protect Hill West Road
    - A riprap project on West Hill Brook to protect a residence
    - A round of Vermont Emergency Management Mitigation Buyouts.
- 2019 flooding: the Montgomery Town Clerk reported that Total costs included: $216,017.62 for repairs of which FEMA contributed $193,860.58 and Montgomery provided $22,157.04 in match. Included rebuilding of the Recreation Field.
- Longley Bridge project

But we really want to hear from you!