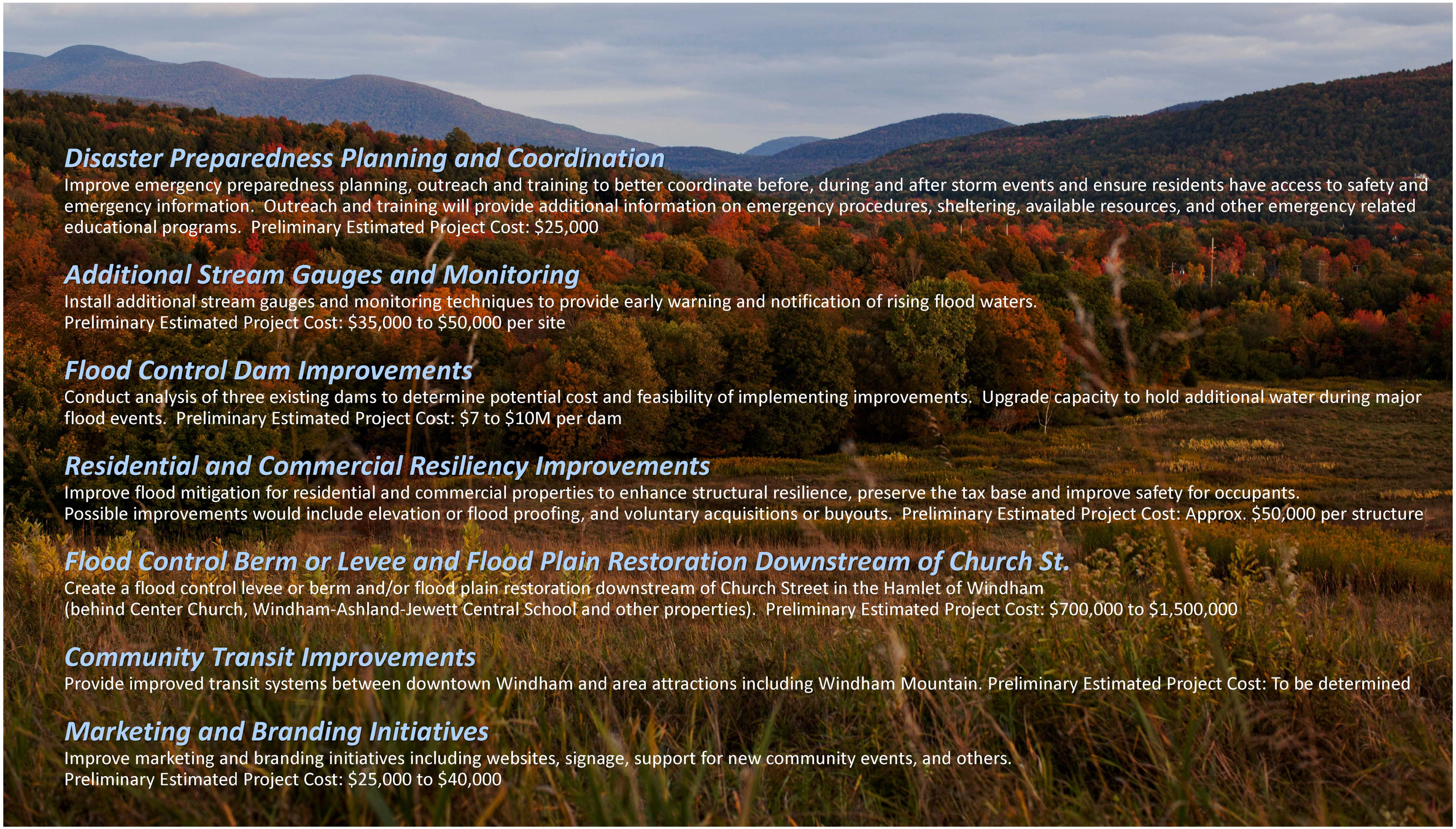
NYRCR Town of Windham

Additional Resiliency Recommendations



Disaster Preparedness Planning and Coordination

Improve emergency preparedness planning, outreach and training to better coordinate before, during and after storm events and ensure residents have access to safety and emergency information. Outreach and training will provide additional information on emergency procedures, sheltering, available resources, and other emergency related educational programs. Preliminary Estimated Project Cost: $25,000

Additional Stream Gauges and Monitoring

Install additional stream gauges and monitoring techniques to provide early warning and notification of rising flood waters.
Preliminary Estimated Project Cost: $35,000 to $50,000 per site

Flood Control Dam Improvements

Conduct analysis of three existing dams to determine potential cost and feasibility of implementing improvements. Upgrade capacity to hold additional water during major flood events. Preliminary Estimated Project Cost: $7 to $10M per dam

Residential and Commercial Resiliency Improvements

Improve flood mitigation for residential and commercial properties to enhance structural resilience, preserve the tax base and improve safety for occupants.
Possible improvements would include elevation or flood proofing, and voluntary acquisitions or buyouts. Preliminary Estimated Project Cost: Approx. $50,000 per structure

Flood Control Berm or Levee and Flood Plain Restoration Downstream of Church St.

Create a flood control levee or berm and/or flood plain restoration downstream of Church Street in the Hamlet of Windham
(behind Center Church, Windham-Ashland-Jewett Central School and other properties). Preliminary Estimated Project Cost: $700,000 to $1,500,000

Community Transit Improvements

Provide improved transit systems between downtown Windham and area attractions including Windham Mountain. Preliminary Estimated Project Cost: To be determined

Marketing and Branding Initiatives

Improve marketing and branding initiatives including websites, signage, support for new community events, and others.
Preliminary Estimated Project Cost: $25,000 to $40,000

Communication Improvements

Description

This project would support cellular phone and broadband service extension throughout the Town of Windham, bringing much-needed improvements to the communication services. The extension being proposed would address the critical lack of communication infrastructure for specific areas in Town, including the Hamlet of Maplecrest and the Big Hollow area. Specific project work would include the purchase and installation of a new communication tower and/or improvements to existing towers and installation of related tele-communication infrastructure.

During Hurricane Irene residents of Windham were physically cut off by high water and displaced roads and bridges. First responders had extremely limited information concerning the status of some residents given the lack of cell phone service and the damage to the existing ground-based phone network. Enhancements to the telecommunication system are critically needed to support greater public safety and emergency response capabilities during disasters while also encouraging economic growth and improved quality of life.

Project benefits include:

- Improves emergency service capability and communications
- Supports the ability for residents and visitors to access help and contact family members
- Encourages business growth and prosperity
- Improves daily quality of life for residents and visitors

Project Type: Emergency services; Economic Development

Project Locations: Town-wide

Strategies Addressed: Improved communications and emergency response; reduce risk for residents and visitors; economic growth

Recovery Support Function: Infrastructure; Health and Social Services; Economic Development

Total Estimated Project Cost: $500,000 - $1,000,000

NYRCR Town of Windham

Back-up Generators For Critical Facilities

Description

This project includes purchasing and installing fixed backup generators for four local facilities to ensure service and emergency capability during and after disaster events. The Committee proposes installing one generator at each of the two Windham well water pump stations, one at the Town of Windham Town Hall, and one at the Town Highway Garage.

Prolonged power outage during Hurricane Irene greatly limited the ability of the NYRCR Town of Windham Community (Community) to function and respond to the disaster. The facilities addressed by this project serve vital roles during emergencies and disasters and are severely limited in their capacity when power is interrupted. This project will help to ensure that Town of Windham critical facilities can operate during emergencies and disasters. Installation of the generators at Town water supply wells will assist in ensuring the uninterrupted supply of clean drinking water to residents. The Windham Town Hall is critical to the Town's coordination of disaster operations, and an emergency power source will greatly enhance the ability of Town officials and outside responding agencies to conduct emergency operations.

Project benefits include:

- Improved safety and continuity of emergency services
- Ensures the uninterrupted supply of clean drinking water to residents
- Supports critical Town functions during a disaster

Project Type: Emergency services; Health and Safety

Project Locations: Windham well water pump stations, Windham Town Hall, Town Highway Garage

Strategies Addressed: Improved emergency response; reduce risk for residents and visitors

Recovery Support Function: Health and Social Services

Total Estimated Project Cost: $200,000

NYRCR Town of Windham

Mad Brook Retaining Wall Improvements

Description

This project proposes the repair and improvement of Mad Brook retaining wall and drainage system to increase structural stabilization and ensure continued functionality and flood protection. The existing 625 foot Mad Brook Retaining Wall has provided flood protection along Main Street and for adjacent properties up to 100-year flood events however as a result of Hurricane Irene and Tropical Storm Lee the wall has begun to fall into disrepair. If compromised, soil along the right bank would be eroded which would undermine the foundations of the structures along the creek.

It is anticipated that rehabilitating the retaining wall will include the entire length and potentially adding another approximately 150 feet of newly constructed wall. The new section of wall would extend further upstream to help mitigate floodwaters from getting behind the wall. In addition, gravel harvesting should be considered to increase the cross-sectional area of the channel to improve channel capacity

Project benefits include:

- Maintains and improves protection for properties
- Increases flood safety for vehicular traffic entering and exiting the Hamlet
- Improves emergency response access to one of the Town's main thoroughfares
- Protects the Hamlet of Windham's commercial core

Project Type: Flood mitigation and safety

Project Location: Main Street and Mill Street intersection (Hamlet of Windham)

Strategies Addressed: Increase infrastructure resilience; reduce risk for residents and visitors; enhance the local economy and promote economic growth

Recovery Support Function: Infrastructure

Total Estimated Project Cost: $250,000

NYRCR Town of Windham

Mad Brook Feasibility Study

Description

This project would conduct a detailed hydrologic, hydraulic, and sediment transport analysis of Mad Brook. This additional hydraulic modeling will comprehensively evaluate all opportunities to establish a long-term strategy for both flood mitigation and Community livelihood. This project would complement and build-on the short-term Mad Brook Retaining Wall Improvement project which addresses immediate needs to ensure the continued flood protection of the structure. This project will seek to identify additional long-term solutions to improve flood protection in the Mad Brook watershed.

The hydrologic analysis will study the entire watershed, and the hydraulic analysis will include the section from Mountain View Road to the confluence with the Batavia Kill. The study will require a detailed stream survey, and verification of the dam flood pool, primary and emergency spillways, sediment characterization, and calibration data based on historic floods.

The study will be used to better define the flooding and channel stability risks of the current channel configuration and evaluate options to restore channel capacity, improve flood conveyance, and reduce sediment transport while improving water quality and habitat conditions.

Project benefits include:

- Identify opportunities to improve flood safety for residents, properties, vehicular traffic and infrastructure systems
- Identify opportunities to further protect and enhance the Hamlet of Windham's commercial core

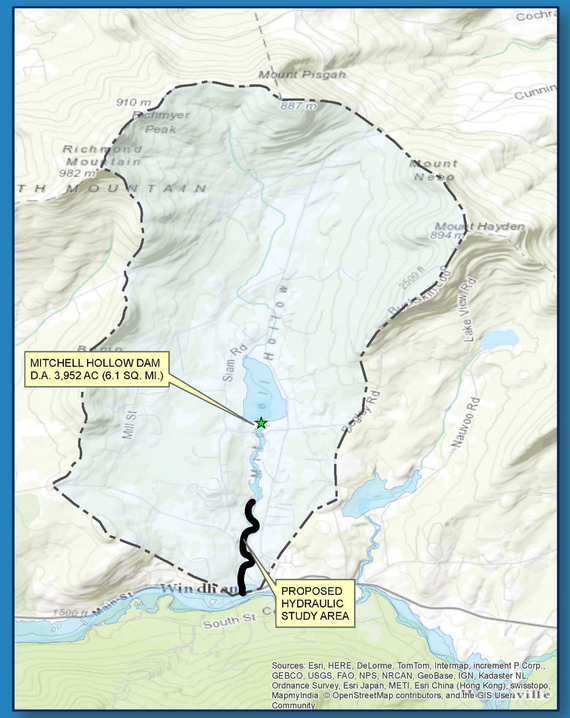
Project Type: Flood mitigation and safety

Project Location: Mad Brook (Hamlet of Windham)

Strategies Addressed: Increase infrastructure resilience; reduce risk for residents and visitors; enhance the local economy and promote economic growth

Recovery Support Function: Infrastructure; Natural and Cultural Resources

Total Estimated Project Cost: $80,000



NYRCR Town of Windham

Route 56 Culvert Upgrade

Description

This project proposes to upgrade and improve an undersized 4-foot corrugated metal pipe (CMP) culvert on Route 56 with a larger 6-foot-by-6-foot box culvert to expand capacity, improve mobility, ensure access to a nearby flood control structure, and reduce localized flood impacts.

The results of hydraulic analysis indicate that the existing culvert, a 4-foot diameter CMP, cannot pass the 100-year flow without overtopping the road and debris jams were reported to be a major cause of culvert failure at this location. The proposed improvement will allow the structure to convey, at a minimum, the 100-year recurrence interval flow, which would also help pass any large woody debris that could block a smaller culvert. When complete, the improved crossing structure will help to ensure access to the Hamlet of Maplecrest and a critically important flood control dam during flood events. This project will result in longer windows to support evacuations and enhance the ability of first responders to conduct emergency operations by having better access to areas of the Town that have traditionally been cut off during flood events.

Project benefits include:

- Prevents road washouts and overtopping for a greater number of flood events
- Improved access to Maplecrest for evacuations and emergency services
- Preserves access to one of the Town's flood control dams during flood events to allow for monitoring and operational control

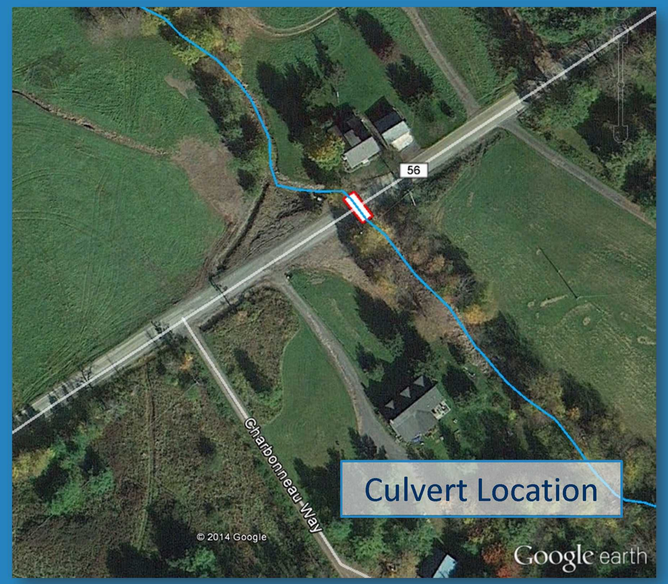
Project Type: Infrastructure improvement; Health and Safety

Project Location: Route 56 - 200 feet northeast of intersection with Charbonneau Way

Strategies Addressed: increased infrastructure resilience, improved emergency response; reduce risk for residents and visitors

Recovery Support Function: Infrastructure

Total Estimated Project Cost: $225,000



Culvert Location

Existing Culvert

Examples of Proposed Upgrade

NYRCR Town of Windham

Silver Lake Project

Description

The proposed project would create access to new passive and active recreation opportunities, an emergency shelter and multi-purpose community facility at Silver Lake and Camp Oh-Neh-Tah. The new facility will leverage the significance of this unique asset to serve multiple functions including creating dedicated space for an emergency shelter while also providing access to resources and flexible space for local organizations, groups and events. This project will add significant opportunities for passive and active recreation through access to Silver Lake and the surrounding natural landscapes that will directly address recreational losses from Hurricane Irene and Tropical Storm Lee. The facility will also serve as an informational and community support hub by providing diverse educational and economic benefits through the creation of resources for non-profit organizations, historical and cultural exhibits, and information on local businesses and attractions.

This project would capitalize on the numerous assets of the existing Camp including an industrial kitchen, storage space, on-site power generation, large supply of drinking water, sewage treatment plant among other features to create a safe and comfortable emergency shelter. This project would also include the retrofit of several existing camp buildings to provide space and resources for community-based groups, events and educational programming. When complete, Silver Lake's historic and cultural legacy and recreation potential will be preserved for future generations while simultaneously creating opportunities for growth in local arts, historical and cultural initiatives. In addition, investments in this important site will help to ensure the continuation of the Camp's critical work with vulnerable and at-risk children through educational programming.

Project benefits include:

- Creates additional passive and active recreation options and a new regional attraction
- Improves emergency sheltering capabilities and public safety
- Supports local groups and organizations that are critical for community health and vibrancy
- Promotes economic growth and a four-season economy
- Connects residents and visitors with local attractions and activities
- Encourages cultural and historic educational opportunities

Project Type: Health and Safety; Economic Development

Project Location: Silver Lake

Strategies Addressed: Improved Emergency Response; Reduce Risk for Residents and Visitors; Economic Growth

Recovery Support Function: Capacity Building; Health and Social Services; Economic Development

Total Estimated Project Cost: $2,000,000

NYRCR Town of Windham

South Street Stormwater Collection System

Description

This project is a proposed culvert improvement, wetland treatment system and passive recreation project along South Street. The project will improve access during flood events by reducing flooding along South Street and improving water quality in the Batavia Kill by capturing and treating sediment laden stormwater in a constructed wetland. Depending on the final design, the project may be configured to provide additional flood storage and stream capacity during large storms on the Batavia Kill while also presenting opportunities for recreation and creation of a unique scenic asset.

The project will upgrade two culverts near the intersection of Clarence D Lane and South Street. An existing eight foot diameter corrugated metal pipe to the east of CD Lane requires an additional eight foot pipe to handle the 100-year storm and collect runoff from parts of Windham Mountain, The Enclave and Windham Mountain Village. A second culvert to the west of CD Lane will be augmented with three box culverts. Additional culverts on the north side of South Street (see exhibit) will convey the runoff east to a 44-acre property owned by the NYCDEP.

A portion of the 44-acre tract will be converted into a stormwater wetland and retaining pond to reduce sediment, nutrients and erosive velocities before discharge into the Batavia Kill. The new wetland and retaining pond provides an opportunity to create a new and unique passive recreation asset and beautiful western gateway into the Hamlet of Windham. This project envisions the wetland and retaining area becoming the center of a natural recreation area with multiple amenities and scenic features including boardwalk style paths, educational materials and other features designed to withstand flooding.

Project Benefits Include:

- Improve safety on South Street
- Reduce Property Damage along South Street
- Improve access to Windham Mountain
- Improve Water Quality in the Batavia Kill
- Provide additional recreation opportunities
- Creates an appealing western gateway

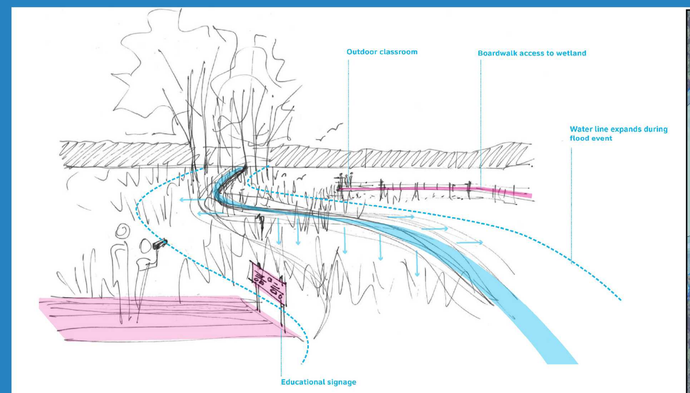
Project Type: Flood mitigation and safety; Recreation; Economic Development

Project Location: South Street (Hamlet of Windham)

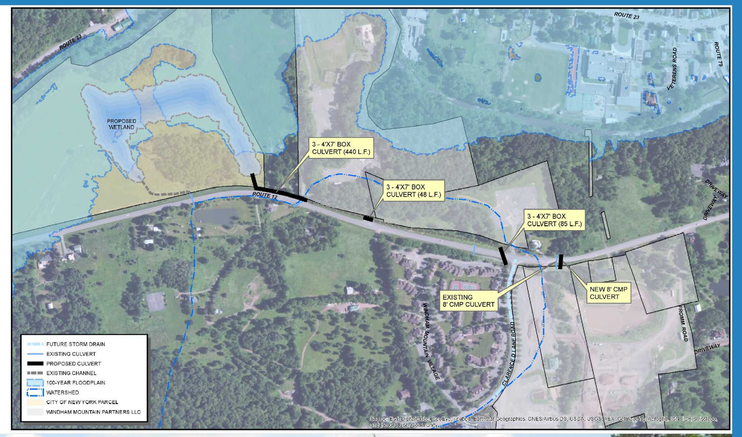
Strategies Addressed: Reduce risk for residents and visitors; increase property protection; enhance the local economy and promote economic growth

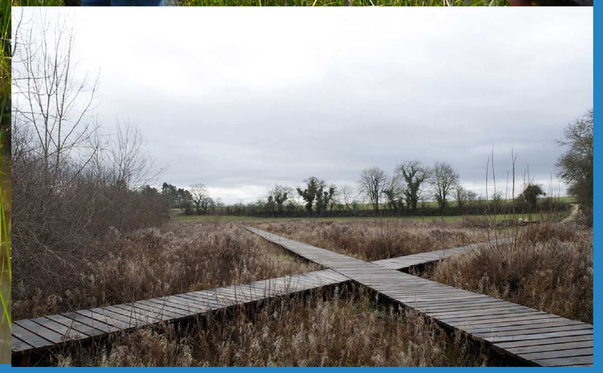
Recovery Support Function: Infrastructure; Natural and Cultural Resources; Economic Development

Total Estimated Project Cost: $2,500,000



ACCESS WETLAND WITH BOARDWALK





NYRCR Town of Windham

New Trails and Connections

Description

The proposed project would support the ongoing Windham Path project by developing new trail sections that will continue to connect hamlet centers and their residents with other local assets and critical facilities.

This project will develop new trails for residents and visitors to safely travel by foot, bicycle, or other means and provide unique access to the Town's beautiful landscapes and natural resources. An expanded trail network will provide new recreation opportunities to increase quality of life, capitalize on eco-tourism potential, grow the local economy, and provide transportation redundancy in emergency situations. Specific project work includes the creation of miles of new trails along with pedestrian bridges, new signage, and other associated trail amenities.

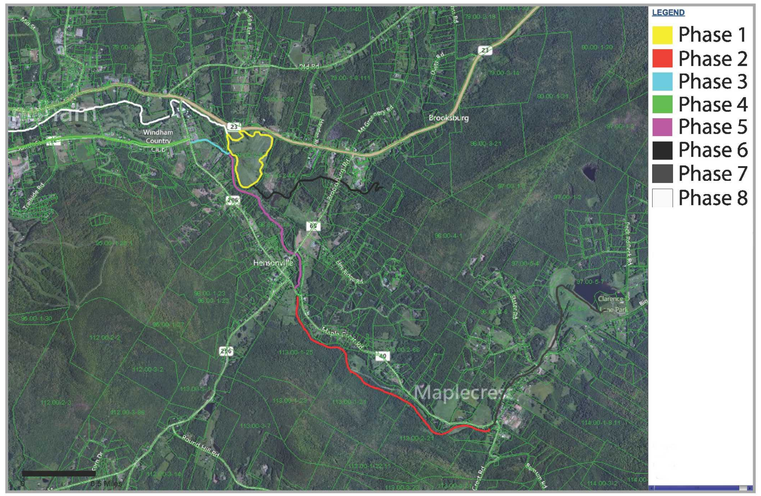
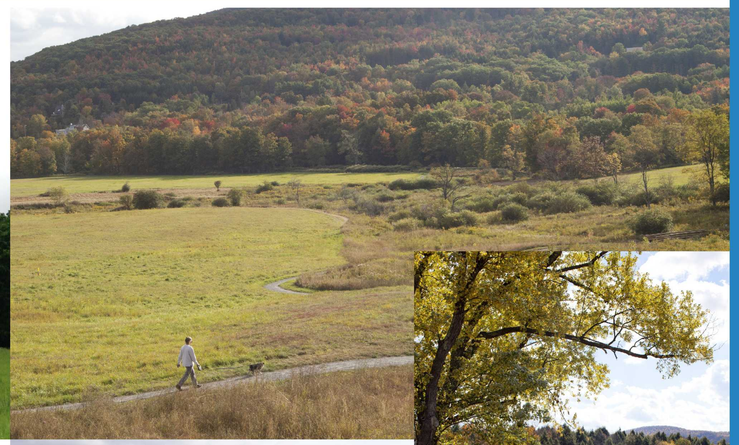
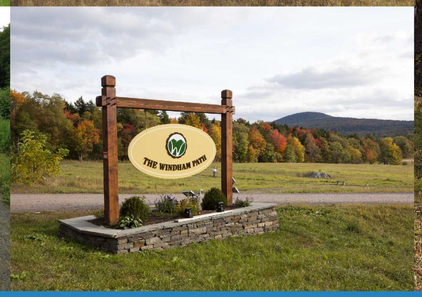
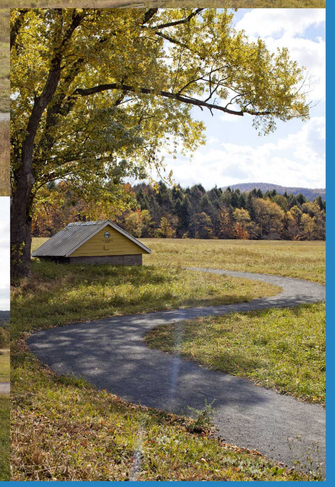
Project benefits include:

- Increases outdoor recreation opportunities
- Ensures mobility during disasters including flood events
- Connects residents and visitors with other commercial centers and critical facilities
- Supports economic prosperity and a four-season economy
- Encourages healthy lifestyles and eco-tourism

Project Type: Economic Development

Strategies Addressed: Improved emergency response; reduce risk for residents and visitors; economic growth

Recovery Support Function: Infrastructure; Health and Social Services; Economic Development

Total Estimated Project Cost: $300,000

Windham Path Concept