



# Landslide Natural Resource Planning

Linking people to their landscape

October 15, 2020

## East Middlebury Flood Resiliency Project Update

### Background

The Middlebury River in the Village of East Middlebury is located on an alluvial fan at the base of Middlebury gorge, a location that is inherently geomorphically unstable due to excessive sediment deposition during floods. The channel has been historically altered and managed by gravel removal, straightening, and armoring as the channel moves around deposited sediment. The river channel setting is dynamic and creates flood and erosion risks.

In 2011 during Tropical Storm Irene, several feet of sediment were deposited upstream of the Grist Mill Road Bridge, and over six feet of scour took place along the retaining wall just downstream of the bridge. Emergency repairs were conducted that included sediment removal from the channel and concrete grouting under the exposed base of the wall.

The most recent flooding occurred July 1, 2017 where a nearly 10-year flood deposited excessive sediment on the alluvial fan channel blocking flow paths and leading to excessive erosion. Recent field assessment and accounts of the flood indicate that up to 50 feet of bank erosion took place during the flood. Accounts of building and releasing jams of sediment and large wood were recorded following the flood. The channel on the alluvial fan remains filled with sediment.

The goal of this project is to create a sustainable management strategy that reduces risks and environmental impacts over the long term in this dynamic river reach in a developed village setting. The project includes four primary components. Design plans have been prepared for the preferred alternative with illustrated details for each design element.

1. Remove large sediment deposits from chute entrances and the top of large bars.
2. Armor select sections of the Ossie Road Berm and upstream berms.
3. Repair the existing flood wall.
4. Extend flood wall 150 feet downstream.

### Project Status

The project has been funded by a FEMA Hazard Mitigation Grant Program which was divided into two with Phase 1 covering design and permitting and Phase 2 covering construction. HMGP grants require a 25% match from the applicant. The total project cost is estimated at just over \$2M, and in March the Middlebury voters approved a bond for up to \$500,000. The Town applied for and received a Clean Water State Revolving Fund (CWSRF) that will cover \$200,000 of this amount, leaving the taxpayers liable for the remaining \$300,000.

Federal and State permitting for the project is complete with the only outstanding permit being the Town zoning permit. The Benefit Cost Analysis was accepted by FEMA in January of this year. The State Stream Alteration permit was received August 14<sup>th</sup>. A Federal Environmental Assessment was completed September 17<sup>th</sup>. The US Army Corps of Engineers permit was received on October 5<sup>th</sup>. The Town zoning permit was submitted on October 1<sup>st</sup>.

It is our intention to put the project out to bid in January and complete the clearing of the trees by the Time of Year restriction for bats of March 31<sup>st</sup>, 2021 as required by the Army Corps permit. Most of the project construction will happen outside of the wetted channel and is not subject to time of year restrictions in the State Stream Alteration permit for in channel work. The work at the Grist Mill Bridge must happen between July 1 and October 1.

### **Contractual Services**

As part of the phasing of the HMGP grant, project management services including permitting and a portion of the bid process were allocated to the Phase 1 grant. The remainder was budgeted for the Phase 2 grant and is outlined in the proposal from Milone and MacBroom dated October 2, 2020.

Project Manager: approximately \$12,000 remains on the Phase 1  
Construction management shared by MMI and Landslide \$70,000 (see MMI proposal).