

**SAFARI Meeting Minutes**  
**Nov. 12, 2014**  
**Shandaken Town Hall**  
**10:00am-12:00pm**

*In attendance:*

Rob Stanley, Town of Shandaken  
Leslie Zucker, CCE UC  
Brent Gotsch, CCE UC  
Eric Hofmeister, Town of Shandaken  
Aaron Bennett, UC DoE  
Don Brewer, Shandaken Planning Board  
Mark Carabetta, MMI  
Danyelle Davis, NYC DEP  
Mark Loete, Trout Unlimited  
Beth Reichheld, NYC DEP  
Candace Balmer, RCAP Solutions  
Adam Doan, UCSWCD  
Vernon Bevan, MMI

**Miscellaneous Updates**

MMI will have an open house at their LEED Platinum certified office at 231 Main Street in New Paltz. It will be hosted from 4:00 to 7:00pm.

Aaron Bennett has taken a new position within the Ulster County Department of Environment. He is now working as an Environmental Planner focused on flood mitigation and planning activities in the Ashokan Watershed. The position is funded through an agreement with Cornell Cooperative Extension of Ulster County. He will work from the AWSMP Shokan office approximately 3 days a week and from Kingston 2 days a week.

**Previous Meeting Minutes**

There were no issues with the previous meeting minutes.

**Town Supervisor Update (given by Rob Stanley)**

Town of Shandaken has approved and signed the NY Rising sub-recipient agreement, however, there are still concerns. Town attorney has two major concerns with the sub-recipient agreement:

1. **Consultants and associated fees.** Town attorney wanted language in the document to be clearer that it was the State that is ultimately responsible for covering consultant fees.
2. **Timeframe.** There is no place in the document that guarantees a timeframe for payment of Towns submitting contractor invoices.

Lori DuBord (Regional Lead for NY Rising Community Reconstruction Program) has said that the State intends to fund the bridges and culverts identified in Shandaken's NY Rising CR report. Most of the NY Rising projects will be located in areas outside the LFA study areas, so in that regard the programs compliment each another.

Rob S. reported that the first LFA public meetings in Phoenicia and Mt. Tremper went well, although an article in the *Kingston Freeman* misrepresented some of MMI's comments. The *Woodstock Times* ran a more accurate article. Members of the public reported they viewed the public meetings on the Town's cable access channel. Generally, public feedback has been positive.

A Mount Tremper property was successfully bought out by FEMA. The homeowners have been able to resettle to another location in Shandaken outside of the floodplain. Questions remain about who will demolish the structure on the bought-out property.

MMI will need to know which properties are in buy-out programs to complete benefit-cost analysis.

The Town was able to address some concerns with preliminary flood maps. One area of concern was the floodplain around the Catskill Rose in Mount Tremper. Similarly, there were some major discrepancies in the flood map near the Shandaken Firehouse and Ruthenbeck Road.

The Town met with John Lisko of Dewberry (consulting firm hired by FEMA) to reexamine the data. Maps were adjusted, which removed about 25 homes from the floodplain, based on observations made during Irene and other floods. A letter about the amended map will be mailed to affected residents.

## **MMI Report on Local Flood Analysis for Phoenicia and Mt. Tremper**

### *LFA Public Meeting Recap*

Mark Carabetta, MMI Project Manager, reported the need to address a public perception that the outcomes of the analyses are a foregone conclusion.

Candace Balmer expressed support for modeling dredging and sharing the results with the public, which should address the public's concern that all options are being explored.

The need to explore the benefits and costs of dredging was discussed. Mark Carabetta provided rough figures for the cost to dredge the Esopus Creek 3 feet in depth over 2.9 miles to 100 feet in width, covering the downstream end to the upstream end of the Phoenicia project area. He estimates that removal of ½ million cubic yards of gravel would require 28,000 truckloads to move the gravel (an expensive proposition regardless of permitting considerations).

Questions asked at LFA public meetings that could be addressed through educational products:

1. Who is responsible for stream maintenance?
2. Who permits it?
3. Who owns the water, and other legal considerations
4. LWD maintenance (perception that DEP or DEC doesn't allow landowners to remove wood)

Beth Reichheld suggested that a representative from DEC attend future public meetings to help address these questions.

Mark C. asked what type of work is allowed on DEC and DEP property. Work (such as cutting up trees) can be done on DEP property with a land-use permit. DEC property depends on the unit designation and management plan; what is allowed may differ between "forever wild" and other designations.

#### *Canoe Survey*

MMI has established and verified a FEMA-duplicate hydraulic model. They ran the one in 10, 50, 100, and 500 year return frequency storms through the model. They will run Irene flows, the 1:25-year and bankfull flows during investigation of floodplain benches.

Mark C. and Vernon Bevan of MMI canoed the Esopus through the LFA study area on October 21. They took photos and observed the stream conditions. Their observations coupled with survey data, LiDAR data, and FEMA flood map information were used to parameterize preliminary hydraulic models.

#### *Preliminary Model Results*

Mark C. reviewed several potential project areas in Google Earth to help the committee visualize site conditions. He also showed preliminary HEC-RAS output graphs for the sites under reviewed. The canoe trip revealed that the FEMA cross-sections "missed" (were not placed at) significant gravel bars in the Esopus. Additional cross-sections at these features will need to be developed and added to the models.

### Woodland Valley Bridge

The committee discussed how differing flow levels interact with the bridge. The 2002 bridge was designed to pass the 25-year return frequency flow. Design flows were exceeded in April 2005 and the bridge over-topped. Overall, there is less concern about inundation and more about damage to the bridge from debris accumulation. The steel used for bridge construction may rust at a higher rate than normal. Due to bridge newness, the Woodland Valley Bridge is not a high priority for flood mitigation at this time.

### Confluence of Stony Clove Creek and Esopus Creek to Bridge Street Bridge

A flume is located at the confluence with a mid-channel bar. The channel here has widened significantly after removal of the railroad tracks, channel modification, and Irene flows. Now Jay Street and surrounding areas frequently flood. Eric Hofmeister reported there is still rip-rap from the loss of the RR tracks in the stream. Gravel deposition has occurred following channel widening.

MMI modeled removal of the mid-channel bar. Removal of the estimated 2,000 cubic yards of gravel showed a  $\frac{3}{4}$ -foot decrease in flood elevation for the 1:10-year event at the cross-section immediately downstream of the Route 28 bridge (with no flood reductions at bridge). Models showed a  $\frac{1}{2}$ -foot decrease for the 100-year event. There were other less significant improvements at higher return frequencies.

The influence of Stony Clove flooding on the Esopus through this section requires further investigation. MMI will try modeling the Stony Clove and the Esopus Creek as one longitudinal profile.

A project that will be modeled is establishing a floodplain bench along the left bank of Esopus Creek at the confluence, and floodplain creation on the right bank. This section will be modeled as split flows. MMI will also model the combined effect of removing/replacing the Bridge Street Bridge. Eric Hofmeister said some landowners have indicated they may be open to buyout and relocation at this project site.

Danyelle D. voiced concerns that widening the channel at the confluence would result in more deposition of sediment in that area. Adam Doan said that if designed properly with bankfull channel dimensions, the channel might be engineered to move sediment at the confluence effectively.

In the past, whitewater races were held in downtown Phoenicia, and the Town would like to see this objective incorporated into channel work on this section of stream. The Town's Comprehensive Plan allows for recreational use of the project area.

Eric H. commented that once the RR tracks went out, gravel eroded and moved downstream between the Main Street Bridge and the Bridge Street Bridge. Concern was expressed about the Bridge Street Bridge and its backwater effect. On Station Road, properties are in buyout.

MMI modeled removing the Bridge Street Bridge and discovered less flood reduction than expected. Removing the bridge created a 2-foot reduction at the bridge for a 1:100-year flood, but little reduction upstream. Danyelle D. asked if debris jam at the bridge could be modeled. The shape of the bridge tends to collect debris. Eric H. said that 25% to 30% of the bridge's capacity has been restricted by debris jams.

Rob S. suggested that MMI model removal of the gravel bar at Bridge Street Bridge (e.g., a 4-foot reduction in gravel).

Mark C. stated that MMI will create new cross-sections using LiDAR. They can be used to show the effect of mid-channel bar removal on flow levels. The current model does not incorporate the bar.

Rob S. also recommended making the slope more gradual near the toll house. It was reiterated that Bridge Street Bridge is critical to the Town's economy. Access across this bridge contributes significantly to business activity in Phoenicia.

Mark Loete asked for a definition of LiDAR. Planes equipped with lasers are flown over an area to collect densely sampled elevation measurements. The measurements are used to produce grids of land surface elevations. DEP has flown LiDAR to produce 2-meter elevation grids throughout the watershed. LiDAR sensors do not penetrate water (elevation grids aren't produced for underwater areas).

One goal for Phoenicia is to reduce flood elevations to the point that the Town can reopen quickly after a flood.

#### Esopus Creek below the Bridget Street Bridge to end of Phoenicia

There is an historic channel in this area where culverts are continually washed out. Also, Uncle Pete's Campground has received a lot of flood damage. Much of the area is in the floodway. Rob S. suggested creating a wider relief channel.

A lot of sediment moves through this section close to Route 28 near the large bend in Esopus Creek. Danyelle D. reported that helicopter flyovers show the area routinely collects sediment. Committee members recommended modeling removal of the bars and sediment, although little reduction in flood elevation is anticipated.

#### Mount Tremper Study Area

Deposits behind the Emerson are linked to an historic levee upstream that directs flow and sediment across the stream channel. Rob S. said that a series of levees bounce the water back and

forth across the stream. The Mount Tremper levee is not a FEMA certified levee and FEMA has modeled flooding behind the levee. However, the levee appears above the 1:100 year flood waterline on depth grids. The effect of repairing the levee requires further exploration.

Rob S. asked about the feasibility of a dry land relief channel bordering the Esopus downstream of the Emerson. But this solution could potentially isolate houses on an island during flooding.

### Mount Tremper Bridges

In the 1:10-year event there is less than 1-foot flood reduction when the Mount Pleasant Bridge is removed, and it quickly disappears as you move upstream. There is a ½-foot reduction during the 1:100-year event.

At the Route 28 Bridge there is a 5.4-foot reduction during the 1:100-year storm if it is removed, and the benefit extends upstream of the Mount Pleasant Bridge with elevations reduced by at least a foot.

The Route 28 Bridge is contributing significantly to flood elevations through Mt. Tremper.

At the Route 28-Route 212 corner, there are a number of homeowners who've opted for buyout. There may be an opportunity to create a floodplain opening here. Adam D. suggested creating flood relief culverts through the bridge area to provide flow relief.

MMI modeled removing the old County bridge over the Beaver Kill. Models showed a 4.2-foot reduction during the 1:100 year flood, though it diminishes rapidly upstream.

### **Next Public Meetings**

The next set of public meetings will be held in spring 2015 after modeling has advanced.

Rob S. said it's important to communicate that a reduction of flood heights can, depending on the elevation of a structure's first floor, result in a significant reduction in flood insurance rates for home and business owners.

There was discussion of how to present information at future public meetings. Some of the information related to flood heights and water surface elevations may be too abstract and difficult for some residents to understand.

Use of Google Maps during public meetings could be helpful, if it does not lead to being sidetracked with individual property questions. Handouts are less illustrative, but they help to keep things on track.

Leslie Z. requested that if cross-sections are shown they be adequately explained to the public. Illustrations of final solutions with more accurate scales would be helpful. Mark C. said that MMI uses cross-sections selectively, and has produced illustrations in the past.

## **Ulster County Multi-Jurisdictional Hazard Mitigation Plan Update**

Aaron Bennett gave a brief update on plan development. Ulster County began an update in 2013, but with the retirement of Art Snyder development was delayed. Municipalities were invited to workshop on Friday, November 21. The meeting will be held at the Ulster County Government offices in Kingston.

### **Next Meeting**

The next SAFARI meeting is scheduled for Wednesday, December 10 from 10:00am to Noon. It will be held at the new AWSMP offices at 3130 State Route 28, Shokan, NY.