



Village of Johnson City LLPT 2 Meeting

2.23.17

Attendees

- Village of Johnson City
- Broome County
- New York State Department of Environmental Conservation
 - Kerrie O'Keeffe
 - Brad Wenskoski
 - Kevin Delaney
- United States Army Corps of Engineers
 - Raymond Tracey
- Federal Emergency Management Agency (FEMA) Region II
 - Alan Springett
 - Seth Lawler
 - Aneela Mousam
 - CERC
 - Amber Greene
 - Thomas Song
 - Paige Mandy
 - Cara Spidle

Meeting Notes

Presentation

- **The Natural Valley Procedure** is applicable and will be applied to all the structures. This method has no additional cost to the community
- **Structural-Based Inundation Procedure** is potentially applicable, but, if the community chooses this procedure, a significant amount of community outreach will be necessary due to sensitivities concerning perceptions some community members may have toward the levee system failing. This would have a potential cost to the community
- Even with base flood elevations (BFEs) above the top of the levee / floodwall, **Overtopping Procedure** is potentially applicable because the water flow can be managed and it can be proven that the structure has some form of armoring against erosion so that the risk is not increased. This would have a potential cost to the community
- **Freeboard Deficient Procedure** is potentially applicable. Information that proves the levee meets all requirements in title 44CFR65.10, except for having sufficient freeboard, is required. Freeboard is a challenge throughout Broome County, and it would require a new map analysis and modeling for all streams in the area to identify the true flood risk. This would have a potential cost to the community
- **Sound Reach Procedure** is not applicable here and would require documentation that the levee meets all requirements in title 44CFR65.10. If pursuing this procedure, it would benefit the Village to go through the levee accreditation process. This would have a potential cost to the community

First Pass Results: Natural Valley Analysis

- To develop this first pass analysis, FEMA updated the hydrology – the amount of water that can come down the pipe – as well as updated the Gage Analysis to include the impact of Tropical Storm Lee. FEMA found a 3.59% increase in the flow of the Susquehanna
- The hydraulics – how that water moves through the system – was modeled using a HEC-RAS 1D Steady State Model. Due to this, approximately 320 structures will be impacted during a 1-percent-chance-flood according to the model. Some communities have been participating in buy-out programs, which have changed the number of affected structures



- This information is important to include if the Village has participated in any buy-out programs, as this will affect the number of structures at risk
- Levee #27 (Susquehanna River)
 - Approx. number of structures impacted: 13 structures
 - The National Department of Transportation has identified that FEMA is not allowed to use road systems as restrictions to flow in mapping for flood inundation, unless that particular section of road was designed as a levee. This will cause issues for future modeling - in this case, the railroad and I-86 network
- Freeboard Analysis #27
 - This structure is showing really close to, or above, the minimum freeboard, which is a good thing. USACE is investigating and reviewing data on how the levees are tied into non-levee embankments, which will assist in better decision-making going forward
- Levee Reach #29
 - Approx. number of structures impacted: 183
 - This levee is not in the National Levee Database (NLD)
 - Q: Have you come up with any additional information as to who might be the owner of this levee?
 - A: It is maintained by the DEC, but not sure if some of it is Village property. Village to do some research on what the intent was when the highway was put in to determine the origin of the levee
 - Because this structure is not part of USACE, the Village may want to look into what options they have for maintenance, specifically since there is a significant amount of vulnerability to this levee. Leon Skinner, USACE, would be a good contact to discuss this further
- Freeboard Analysis #29
 - The Freeboard analysis is based on LIDR data, so there is a range of vulnerability
- Levee Reach #23
 - Approx. number of structures impacted: 124
 - Impact from Susquehanna River and Finch Hollow Creek, as well as I-86 roadway
- Freeboard Analysis #23
 - Freeboard is above the minimum all the way through this reach

Procedures for LAMP

- Natural Valley: We have all the information
 - Suggests a 2-D modeling approach because it provides good information about the direction and velocity of the water in a potential flood. The 2-D approach also develops the basic maximum extent that would be included in a Zone D
- Structural-Based Inundation: This would require good elevation information.
- Overtopping Approach: More requirements for 65.10
 - Need to look into drainage options as well
- Freeboard Deficient: Requires a full 65.10, except for the freeboard aspect
- Sound Reach: This is a very expensive procedure and requires a substantive investment from the community. On one section of Finch Hollow, it would make sense to conduct Sound Reach, but the Village may get more out of going for accreditation instead of performing a Sound Reach procedure

Discussion

Q: What is the 3.59% increase in Susquehanna Flow compared to?



- A: The level impact that the Gage Analysis identified for Tropical Storm Lee. This new methodology that incorporates all of the historic flooding events needs to be applied to the current PFIRMs to ensure this is an area-wide standard

Q: As far as our records show, Levee #27 is still there under the Route 17 interchange. The impermeable core was maintained, but NYSDEC is trying to dig up the best records for the Village.

- A: The real issue is that there is no way to inspect that. Are there any USACE policies for how to maintain levees underneath a road?
- There is no set policy in place, but USACE has been conducting inspections as they can. It's an unanswered issue on how to deal with that
- This is going to be a discussion going forward. National DOT is saying no unless you are operating and maintaining it, which is the issue because it's been covered up by another structure. Need to conduct a geo-technical process, which is an additional cost that the community needs to consider

Q: Would Levee Reach #23 segment be eligible for Sound Reach?

- A: Yes, but the real key is how much of this flooding comes from here versus coming back up from the Susquehanna because there is overlapping inundation
- A lot of the flooding here is coming from the Town of Union. Provided, if the issue with the levee under Route 17 can be resolved, we'll still have to deal with those levees in the Town of Union
- Absolutely, which is one of the reasons that all of the communities need to talk. It's a lot easier to get together and leverage common risk and split some of the costs instead of handling the cost individually. Broome County planning has set up a flood group as a resource for the communities
- It is important to understand the intent of why this levee is built – to provide protection from Finch Hollow or Susquehanna? This would be useful to know
 - The odds are that Finch Hollow is the primary reason this was built
- The whole system was constructed as a continuous line of protection, so it's not necessarily beneficial to look at them in sections
- Because of current policy, we cannot look at the railroad or Route 17 as the line of protection

Next steps

- Prepare a LAMP plan that summarizes LLPT discussion's, first pass analyses, and recommended LAMP Procedure to be applied in Phase 2
- Please share any additional data to Seth Lawler (slawler@Dewberry.com) and Sri Koka (skoka@Dewberry.com)