

To: Preservation@howardcountymd.gov

From: Gayle Killen, owner 8572 Main Street Historic Ellicott City MD

HPC December 03, 2020 Virtual Meeting

Regarding Chapter 9 comments on application:

Removal of buildings does not prevent flooding of other buildings – only those removed. Constriction removal above grade on Main Street results in accelerated conveyance above grade on Main Street. Accelerated conveyance increases flood risk. We cannot handle nor can we tolerate accelerated conveyance or velocity. Adding bollards where buildings once prevented flow will only prevent vehicles from being washed into flood waters, but it will not protect bodies.

Constrictions that span the channel above grade function as delays that slow the flow and prevent flow from jumping the channel to Main Street, thus reducing flood risks. Lateral containment such as above grade buildings and the Tiber Bridge also function as safe egress in floods. Additionally, the steps to entryways are elevated above grade and serve as escape.

Per application, “The final design efforts for this project, which will commence upon adoption of the Ellicott City Watershed Master Plan by the County Council, will inform trees and other vegetation on the site.” Understanding the 3 major top down flash floods in 2011, 2016 and 2018; there is no excuse for postponing the reintroduction of trees and vegetation on Main St. We cannot reintroduce trees to Main Street fast enough. Understanding that Main St itself is acting as a stream channel in storm surges, the sinuosity can be modified by bedrock control, roads, channel confinement (lateral containment), and vegetation. By managing the turbulence of the flow in and around Main St we successfully reduce the physical impact to structures and public safety threat level.

Regarding Chapter 12 comments on Demolition:

HoCo has chosen to quote USACE’s DEC2019 report in such a way that it appears to support the proposed projects. In contrast, be advised that per USACE Planning Division via George Bunch on 17NOV2020, “The December 2019 US Army Corps of Engineers (USACE) review of Howard County’s flood risk mitigation alternatives was scoped to be a high-level independent peer review of the flood risk reduction alternatives, strategies, and processes the County was considering to address flood risk in Ellicott City. The 2019 review did not provide approval for specific alternatives, and this review is separate and distinct from the regulatory review process which is currently ongoing for County projects in Ellicott City.”

Further, the below remarks by USACE in the DEC2019 report indicate a lack of confidence in project details and impacts:

- page 5, “No detailed engineering designs of any specific alternatives were available for the team’s review”
- page 27, “The County’s modeling outputs as presented to USACE for this evaluation, typically had multiple combined measures, making the assessment of individual measures somewhat challenging.”
- page 29, “The County could consider modelling each individual measure on its own, such that the relative efficiency of each measure can be assessed”
- page 33, “The team did not review the hydrologic and hydraulic models themselves, but reviewed their graphical outputs. The team assumes that these studies and modeling were sufficiently accurate to properly inform decision making”
- page 33, “The USACE technical team reviewed modeled alternatives which contained combinations of measures. Therefore, the team was limited in its ability to assess the effectiveness of individual measures.”
- page 36, “The USACE approach for modelling storm events often includes the modeling of an array of different storm scenarios, as a diversity of modeled storms would better define the selection of measures.”

And finally, during the 09NOV2020 Section 106 Consulting Parties Meeting, Howard County was unable to answer questions regarding impacts of projects due to not yet having design details. Claims regarding the impacts of these projects are not verified and therefore it is too early in the evaluation process to determine if these buildings must be removed.

Removing buildings can significantly reduce flood risk...but only for the buildings that are removed. A more comprehensive approach considers that flood risks will increase in the immediate area due to increased velocity. This increased risk extends to communities connected by tributaries affected through acceleration of upstream flow. The perfidious use of USACE support is confounding and leads to malformed decisions based on incomplete disclosure, ambiguous support and false confidence in perceived mitigation. To be clear, we must consider that increased conveyance directly increases risks to those historic buildings not removed, adds risks to life safety, and negatively impacts upstream communities in the Historic District as well.

Modeling used to depict reduction in flow with removal of 4 buildings, simulating water depth at a July 2016 Storm Event, are a result of combined calculations that include increased conveyance at critical points such as the 8600 Main Street culvert project. They do not consider alternatives to slow the flow that are available upstream. It is crucial we run calculations that factor the existing alternative of detention at 8600 Main St in order to fairly determine impacts downstream before abandoning this detention opportunity in favor of demolition. By implementing detention upstream, we alleviate the speed and volume of flow downstream. Detention alternatives also benefit the historic buildings throughout Main Street by reducing devastating velocity and volume.

The acquisition of my home, 8572 Main Street, was attempted by Howard County after the 2011 flash flood along with the successful acquisition of 8518 and eventually 8512 Main Street. I declined the acquisition offer and continued flood proofing preparations.

This administration has made preservation a priority as evidenced by allocation of grant funds for private property via flood proofing grants. I personally used this grant funding on my historic main street property to insulate the wood framed walls with 8-14" thick Hemp-Lime. Hemp-Lime is a nonstructural material cast around the building frame. It is 3x more elastic and 7x stronger than traditional concrete. It gains strength over time with exposure to air, lacks the brittleness of concrete and does not require expansion joints. Once cast in place it hardens as petrified rock and is 1/7th the weight of concrete. Hemp-Lime is resistant to fire, flood, pest, insects, mold, fungus, earthquakes and sound absorption qualities have made it an ideal candidate for sound barriers on highways. It provides humidity regulation and thermal energy performance at R2.5-3/inch. Hemp-Lime can be finished with plaster identical to historic plaster in heritage buildings or clad in tile or wood flooring if desired. I also moved all electric and utilities up out of the basement and installed a tankless water heater/mini-boiler under the steps to the second floor. By taking these steps as well as managing earth with riparian buffers around the home I have successfully provided resilience for the historic building.

Yes, we can reinforce structures and wet-proof to prepare for imminent surges of storm intensity. The reinforcement of floors and walls on the 4 proposed demolitions is an alternative that deserves consideration by the county. This alternative may not have been considered due to a previous lack of information or knowledge. But with this knowledge, we are now obligated to consider an alternative that focuses on detention upstream and reinforcement of buildings.

Regarding Howard County Code 16.608 (d)

Neither the Maryland Ave culvert nor the Terraced Floodplain are capable of significant reduction of flash flooding. That can only be achieved by upstream detention. The risks of flash flooding in and around Historic Main Street are related to turbulence and velocity of flow. The Maryland Ave culvert and Terraced Floodplain projects are capable of increasing conveyance, but we must consider the impact of increased conveyance in areas sensitive to high-velocity.

Retention of the structures is no more threat to public safety than any building suffering from high velocity runoff. These 4 buildings are not responsible for a high probability of flood water inside 36 buildings. These 4 buildings are not the source of flooding, and they are not capable of reducing channel capacity just by being located above the channel. The majority of flood risks on Main do not originate from the channel beneath the buildings, and removal of the structures cannot remove flood water on Main. The 4 buildings and Tiber Park Bridge serve as beneficial lateral containment that slow the flow above grade and more importantly provide escape for public safety. The building floors and walls can be significantly reinforced to withstand impact. This combined with upstream mitigation (detention, not acceleration) will result in slower safer flows on and around Main St.

Financial hardship endured is not limited to these 4 structures, and removal of these 4 does not relieve undue financial hardship on almost 100 privately owned buildings on Historic Main St. It only alleviates financial hardship for the 4 owned by the county.

Retention of the 4 structures is in the interest of the majority of the persons in the community. Retention of the structures provides beneficial lateral containment reducing velocity above grade as well as egress for public safety. Retention of the structures does not lead to high probability of flood water inside 36 buildings – the high probability of flood water inside 36 noted buildings (as well as 60+ Historic Main Street residences upstream) is a result of a lack of detention upstream and increased conveyance speeds contributing to devastating downhill runoff.

We do not reduce flooding in the historic community by opening the bottom most opening of the valley, inviting more water faster. We can however benefit from reducing internal channel constrictions like the 1-3' of sediment built up inside the various channels around town. And that dredging should be done prior to demolition being considered. Without detention and channel dredging upstream the probability of flood water inside the immediate 36 buildings will remain high, even with the 4 buildings removed. The probability of flood water being faster and more devastating to the community will increase if the MD Ave culvert and Terrace Floodplain projects allow increased conveyance down New Cut Branch and Tiber-Hudson Branch.

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