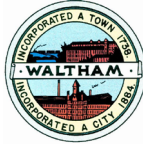


CITY OF WALTHAM
Engineering Department



Robert S. Winn, PE
City Engineer

FLOOD MITIGATION EFFORTS/PLANNING

MVP Program

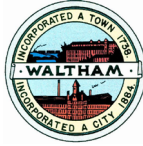
1. Awarded MVP (Municipal Vulnerability Preparedness) Grant FY20/21 to study and identify potential projects to reduce flooding in Waltham. This project was completed in June 2021. This project included the following items.
 - a. Assessment and inventory of streams and crossings such as culverts and bridges
 - b. Development of a hydraulic model of major watersheds and brooks in Waltham.
 - c. Development of preliminary option to help alleviate flooding in Waltham.
2. Based on information gained from the FY20/21 MVP study, an additional MVP Grant was obtained to review flooding and issues at the lower end of Beaver Brook and Chesterbrook at Linden St. This project is ongoing and the final design of improvements is scheduled for June 2023. Currently, the preliminary design improvements associated with this project includes a bypass channel, stream improvements, sediment removal, and stabilization to help mitigate flooding and help with flow efficiency.
3. Fall 2022 Waltham received an additional MVP Grant to review options and develop a concept design to hold back flow along Chesterbrook. This work will be completed by June 2023. The concept is to hold back flow at the YMCA wetland area and the Clark's Pond wetland area. This study will model and identify what changes are required at the YMCA and Clark Pond wetland dams to effectively holding back flow and allow the peak flow of West Chester brook to first pass through the lower part of Chester Brook, alleviating downstream Chester Brook flooding at the Square Pond Wetland area.

The overall Flood mitigation concept is to look for opportunities to hold back and slow flow upstream and to decrease bottlenecks to flow downstream. Below is a listing of current efforts.

1. For Beaver Brook and its Watershed, this includes holding back flow as part of the Fernald Daylight project and the Trapelo Rd Culvert flood wall. There are additional opportunities to hold back flow in the upper part of Beaver Brook, but these will require coordination with DCR and will take some time to develop.
 - a. Hold Back Flow- The Fernald stream daylight project has recently been completed 9/22. This project is expected to help hold back flow to Beaver Brook.

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- b. Hold Back Flow- The flood wall as part of the Trapelo Rd Culvert project will help hold back flow and alleviate Trapelo Rd flooding and downstream along Beaver Brook. Construction is expected to be completed during the Summer of 2023.
 - c. Decrease Bottlenecks- The MVP design will remove sediment and add a bypass overflow channel at Beaver Brook, helping with Linden St flooding.
 - d. Decrease Bottlenecks- MVP design for stream stabilization at the convergence of Beaver and Chester Brook will improve flow movement, helping to alleviate Chester and Beaver Brook flooding.
2. For Chesterbrook and its watershed, holding back flow at the YMCA wetland and Clark Pond wetland dams is being investigated. The dams will need to be rebuilt and modulating gates added to facilitate raising and lowering the dams.
- a. Holding Back Flow- Working on MVP plan to develop a concept design and permitting requirements to replace dams structures to hold back flow.
 - b. Holding Back Flow- The dam structure at Hardy Pond can also be modified to hold back flow. To help prevent flooding of residences surrounding the pond, we can only raise the dam by 1-foot temporarily, however, this is a large pond and even this small increase will have impact downstream.
 - c. Decrease Bottlenecks- We have removed a large amount of woody debris that was partially blocking brook flow, this work includes the square pond wetland area and continues to the intersection of Chester Brook and Beaver Brook, at Lyman St.
 - d. Decreased Bottlenecks- We have cleared and removed debris at several dams along Chester Brook, including the Lyman Pond dam and small concrete dam upstream of Lyman Pond.
 - e. Decrease Bottlenecks- The concrete dam upstream of Lyman Pond can be modified to help reduce flow restrictions. This will involve cutting in removeable weir boards. This will not change the height of the structure, but will allow the boards to be removed prior to large rain events to help with brook flow, reducing flooding. This will require Con Com permitting and permission from Lyman Estate because the dam is located on their property.

In addition to the above items, the Engineering and CPW Departments have identified flood prone areas in the City. For each area, we are investigating the cause of flooding and developing option to help mitigate flooding. Attached is a map showing the identified flooding areas in the City.