

For more information:

City of Cambridge
Department of Public Works
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www.cambridgema.gov/theworks/tenyearplan



City of Cambridge
Department of Public Works

Ten Year **Sewer and Drain.** Infrastructure Plan

April 2019

INFRASTRUCTURE | PLANNING & OPERATIONS

Set up annual meeting with the Planning Board to review infrastructure planning and operations. Goal is to have a citywide discussion that supports and provides context for reviewing individual developments.

- Eversource Electric and Gas.
- City Utilities – Sewer, Drainage and Water.



INFRASTRUCTURE | PRIORITIES

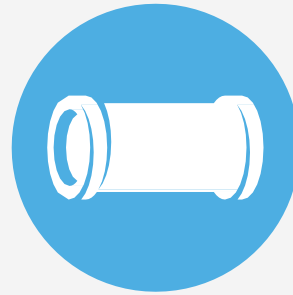
Our approach requires the effort of both the public and private sectors to achieve the regulatory, infrastructure, and water quality improvements to make Cambridge a **clean** and **healthy community**.

REGULATORY



Reduce CSOs and SSOs, Pollutants of Concern, and Total Suspended Solids (TSS) to surface waters

INFRASTRUCTURE



Address at risk or high risk infrastructure in high priority areas through rehabilitation or replacement

WATER QUALITY



Use green infrastructure solutions where possible

PUBLIC

PRIVATE



Comply with Stormwater Regulations to reduce erosion, nonpoint source pollution, and flooding



Design and build to the 2070 10-year and recover to the 2070 100-year storm climate projection



Implement Best Management Practices (BMPs)

PROGRAMS | REGULATIONS & REQUIREMENTS

The City must ensure that the Infrastructure Plan meets or exceeds federal and state regulations, including:



Infrastructure Improvements and Maintenance:

- MassDEP (inflow and infiltration)
- EPA



Untreated discharges regulated through the NPDES Program:

- Municipal Separate Storm Sewer System (MS4)
- Combined Sewer Overflow (CSO)
- Total Maximum Daily Load (TMDL)



Activities related to floodplain areas:

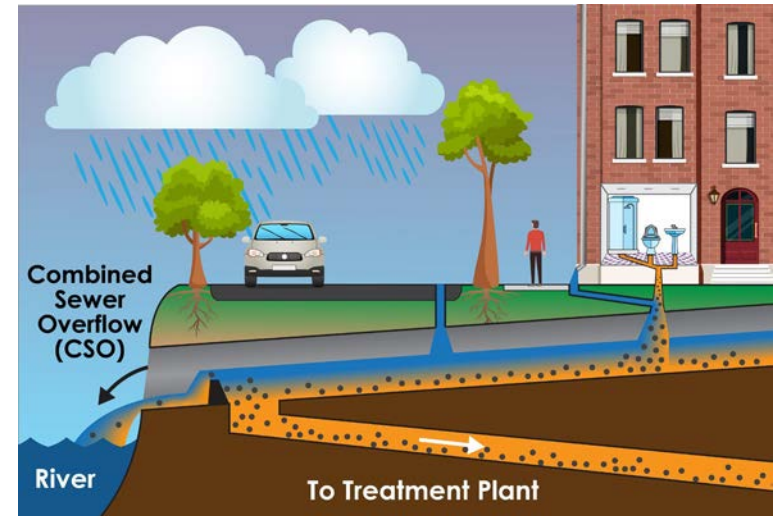
- Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP)
- Wetlands Protection Act
- Zoning Flood Plane Overlay

SEWERS | COMBINED VS SEPARATED

Cambridge's sewer system is approximately 55% separated, where sewage goes to the MWRA for treatment and the stormwater discharges directly to Alewife Brook or the Charles River.

The remaining system is combined sewer, where the sewer and stormwater share a common pipe and can be directed to the MWRA for treatment during dry and wet weather, and to the Alewife Brook or the Charles River during wet weather CSOs.

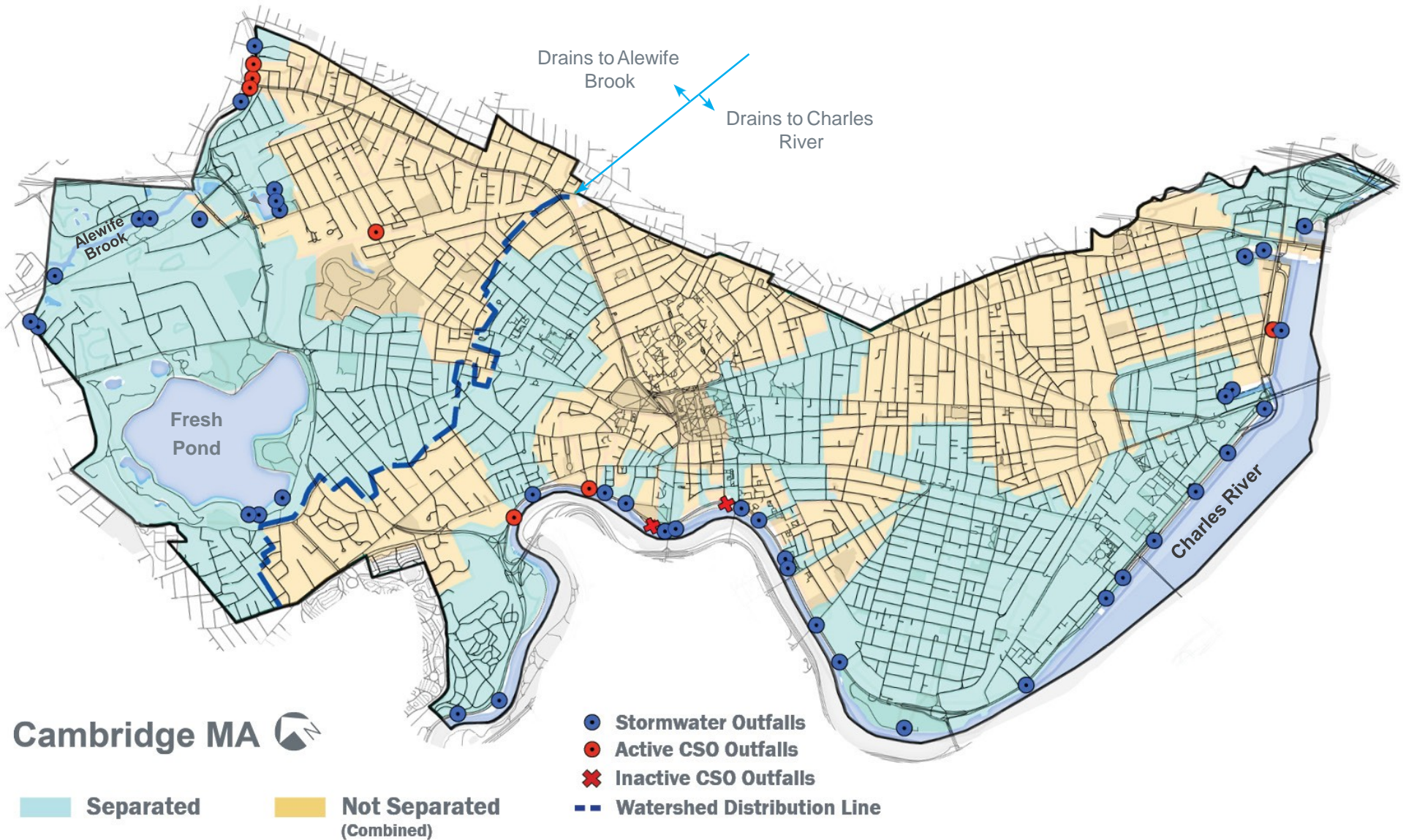
Combined



Separated

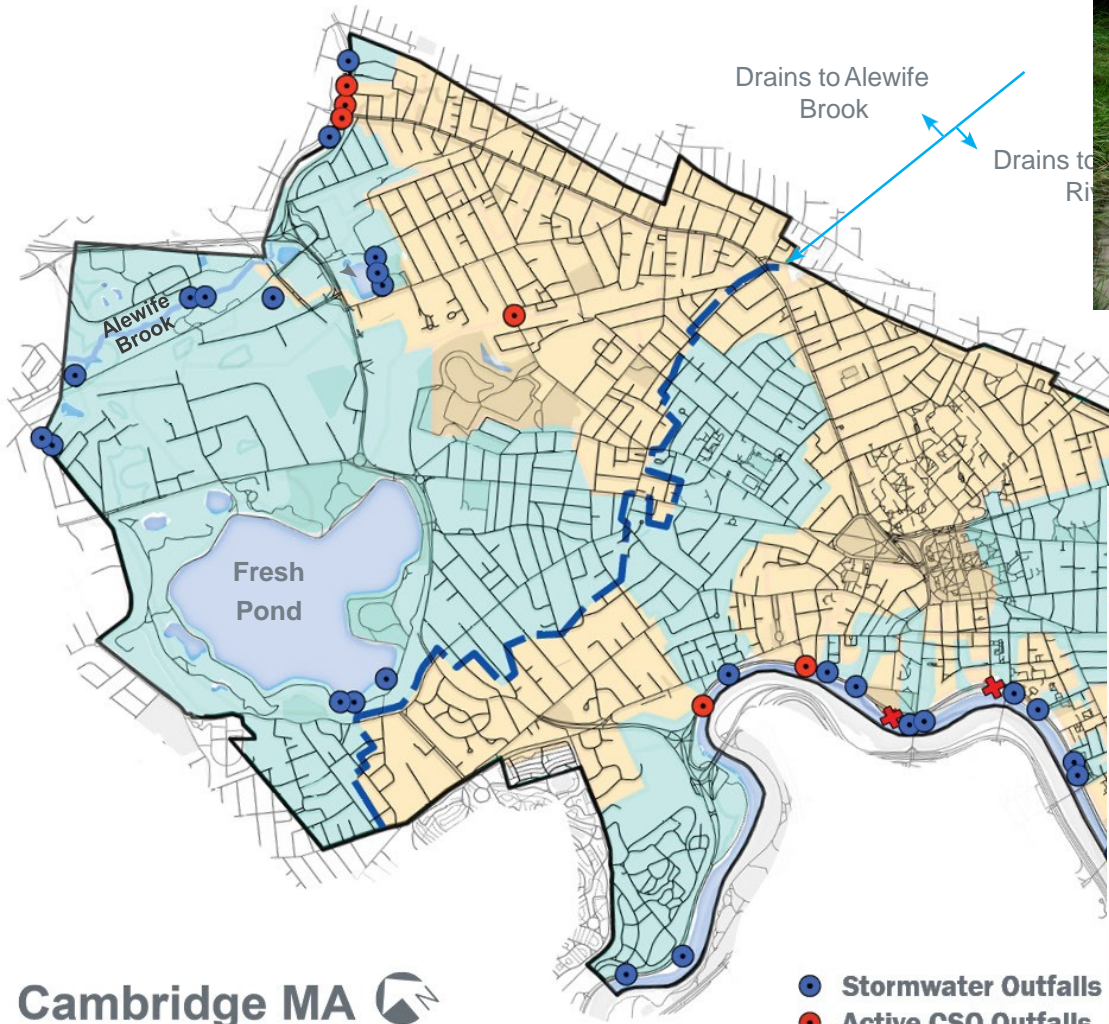


SEWERS | COMBINED VS SEPARATED



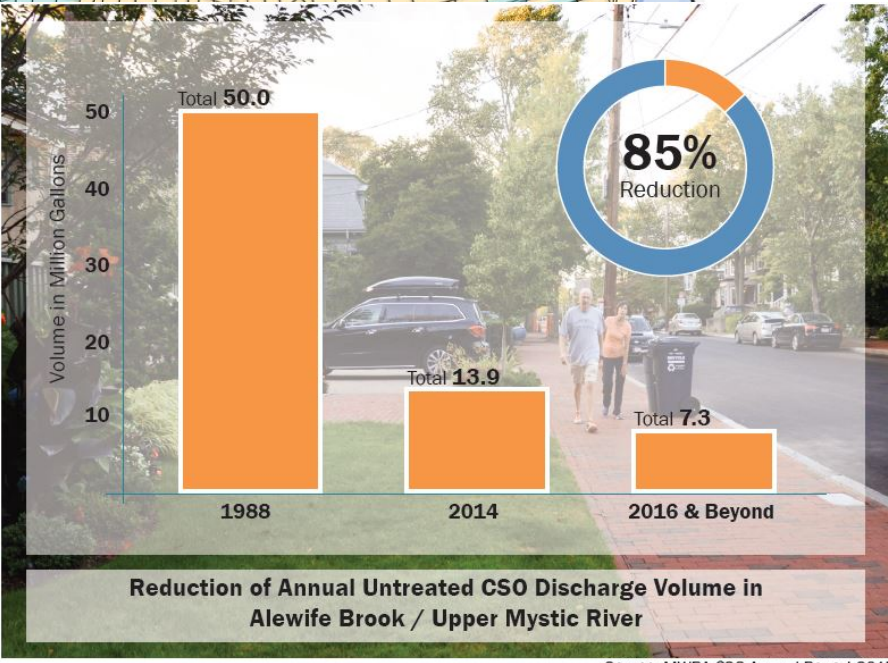
This map shows the areas of Cambridge's sewer system that are separated and are not separated and the active city-owned outfall locations. The City is 55% separated and 45% not yet separated.

SEWERS | ALEWIFE



Cambridge MA 

-  Separated
-  Not Separated (Combined)
-  Stormwater Outfalls
-  Active CSO Outfalls
-  Inactive CSO Outfalls
-  Watershed Distribution

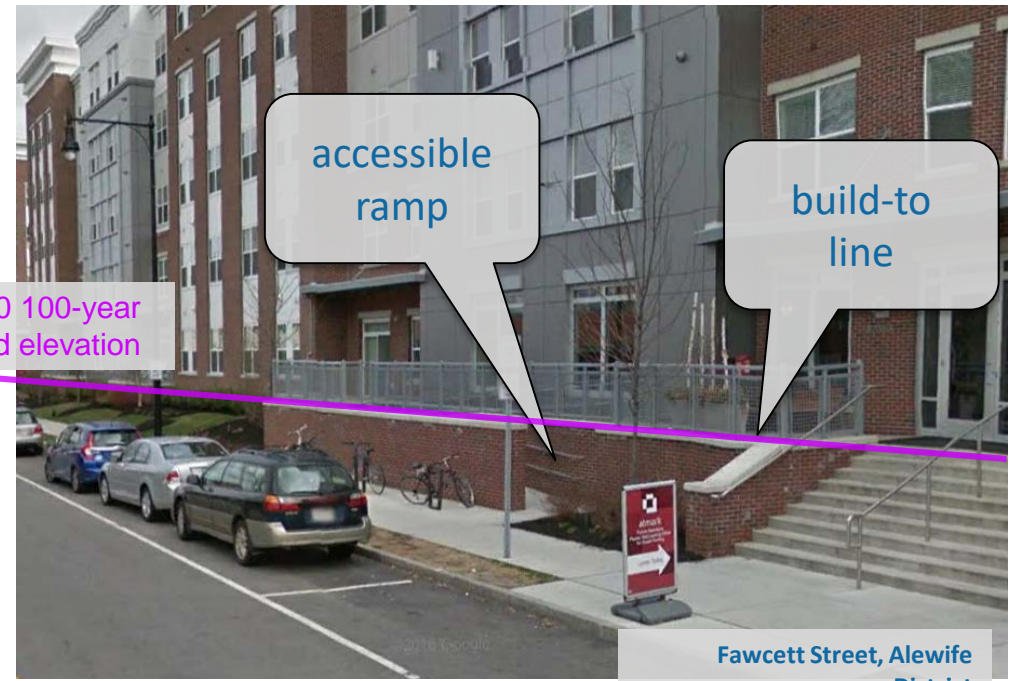
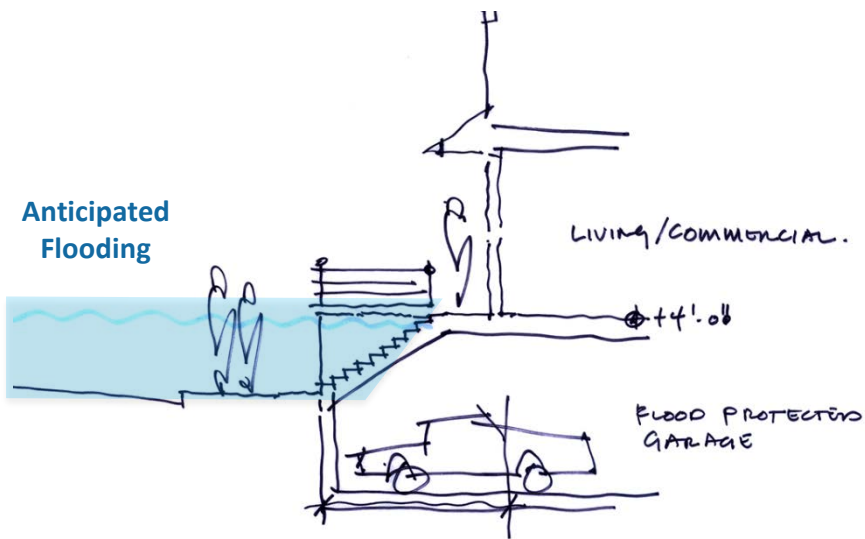


Reduction of Annual Untreated CSO Discharge Volume in Alewife Brook / Upper Mystic River

Source: MWRA CSO Annual Report 2015

Alewife – Quad Area – Separated.
Industrial Sewer Permits.

FLOODING | BUILD TO / GARAGES



Cambridge Community
Development Department



PRIORITIES | WATER SUPPLY



Cambridge FloodViewer v2.1

City of Cambridge, Massachusetts

[About CCPR](#)

[CDD Homepage](#)

[Cambridge DPW](#)

Water_Bodies

HYDRO_WaterBodies



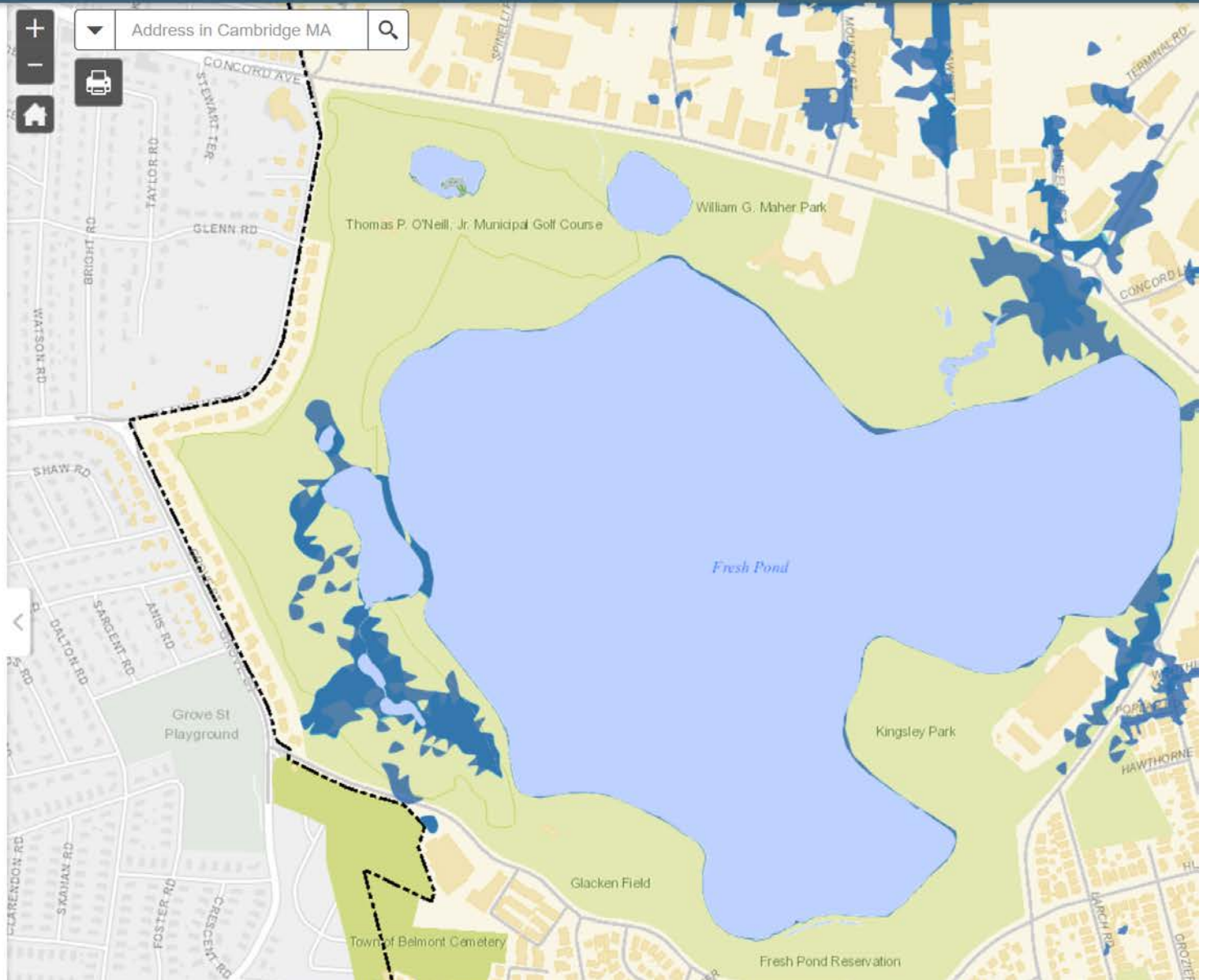
Precipitation Flooding - 2030 - 100-Year Storm

2030 - 100 Year - Extent of Flooding



Precipitation Flooding - 2030 - 10-Year Storm

2030 - 10 Year - Extent of Flooding



PRIORITIES | WATER SUPPLY



ALEWIFE PREPAREDNESS HANDBOOK

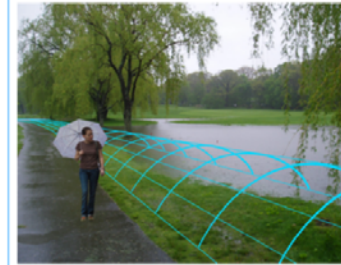
City of Cambridge
11.15.2017

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C1: PROTECT FRESH POND RESERVOIR

Protect Fresh Pond Reservoir, the terminal reservoir for the City's drinking water supply, from future flooding impacts



Option for flood wall along the perimeter of Fresh Pond

TOOLBOX / ACTIONS:

1. Evaluate building a vegetated berm at elevation 23.15 feet-CCB³ along the Fresh Pond Golf Course
2. Evaluate building a flood wall at elevation 23.15 feet-CCB³ along the perimeter of Fresh Pond
3. Evaluate building a flood wall at elevation 23.15 feet-CCB³ in elevation south of the railroad track along the Alewife Quadrangle

QUALITY OF RESILIENCE:

Impact	Cost	Equitable	Wellness	Feasible	Integrated	CC Mitigation

WHY RELEVANT TO ALEWIFE?

Fresh Pond is an "Outstanding Resource Water" because it is part of the drinking water supply system for the City of Cambridge. Discharges to Fresh Pond are therefore regulated by water-quality standards. By 2070, during a 5-year storm (a storm that can occur once in 5 years, or has a 20% probability of occurring in any given year) or more intense storm surge scenarios, significant untreated discharges could occur once the Pond's elevation exceeds the point at which it is isolated from surrounding areas. The area that the Pond could effectively be connected to includes railway and areas zoned for industrial uses, which may contain hazardous materials.

³ CCB stands for Cambridge City-base datum, which is vertical reference datum that the City uses. The CCB datum is 11.35 feet below the mean sea level in Boston, MA

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