

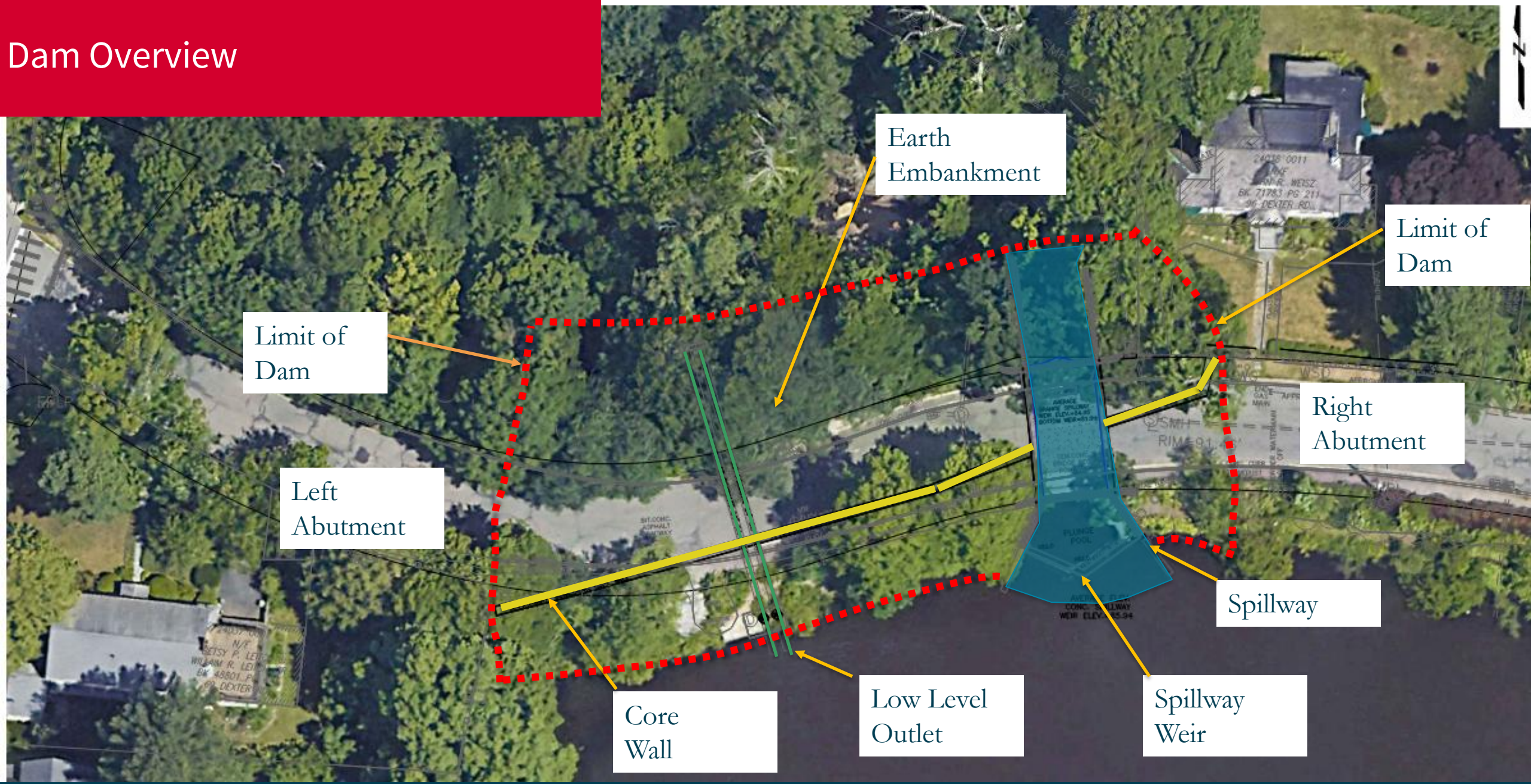
City of Newton
Public Facilities Presentation

**BULLOUGH'S POND DAM
REHABILITATION**

7/23/2025



Dam Overview



Limit of Dam

Left Abutment

Core Wall

Low Level Outlet

Earth Embankment

Spillway Weir

Spillway

Right Abutment

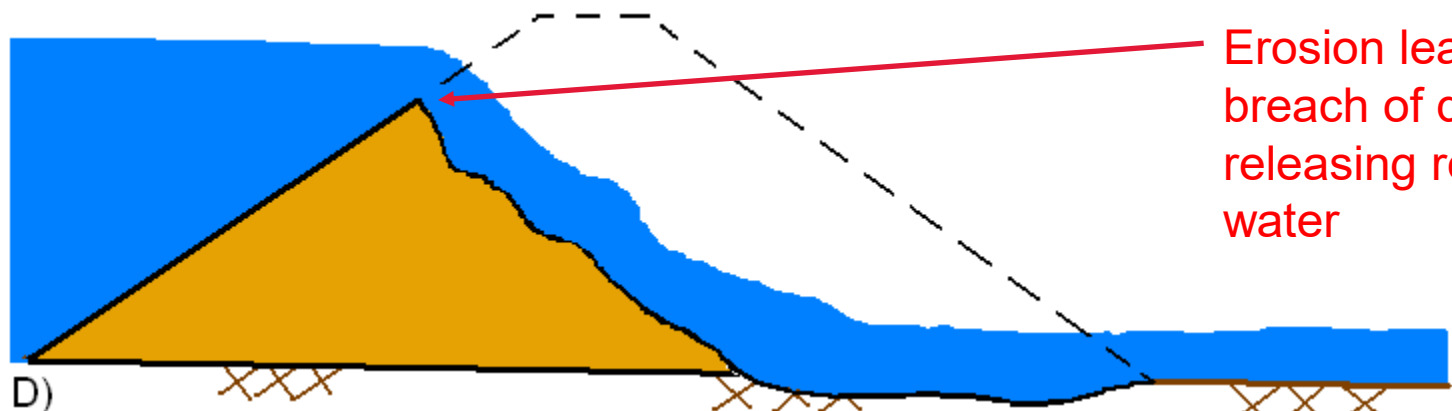
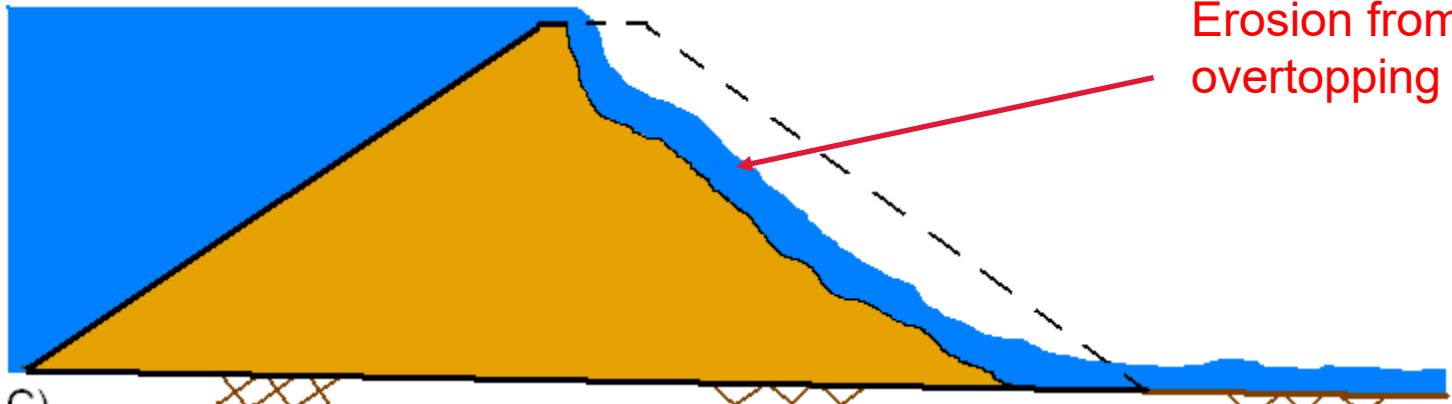
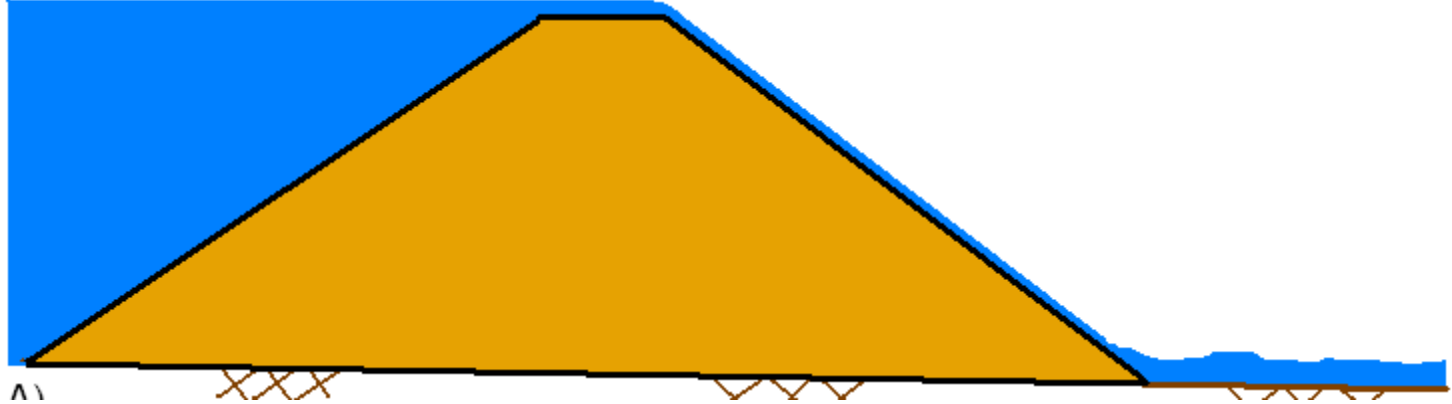
Limit of Dam

Reasons For The Dam Rehabilitation

- The City is under the order of the Office of Dam Safety to address the “significant hazard” potential of the dam, which could lead to significant property damage, and/or loss of life
- Primary spillway is undersized
 - Overtopping likely during design storm.
 - Overtopping would likely lead to dam breach.
- Woody vegetation on the dam is required to be cleared
- Masonry repairs are needed at the spillway and low-level outlet



Overtopping causes erosion leading to Dam Breach



Recommended Alternative

- We strongly recommend the **Downstream Erosion Protection** – Articulated concrete blocks alternative
- Reasons for selection:
 - **Effective for safety** of lives and property
 - Construction has the **least impact** on the neighborhood
 - **Resists erosion and stops scour** before it damages the dam
 - SSP and Core wall options would allow scour and erosion of the dam.
 - This alternative is **expected to be well received by MADCR ODS**

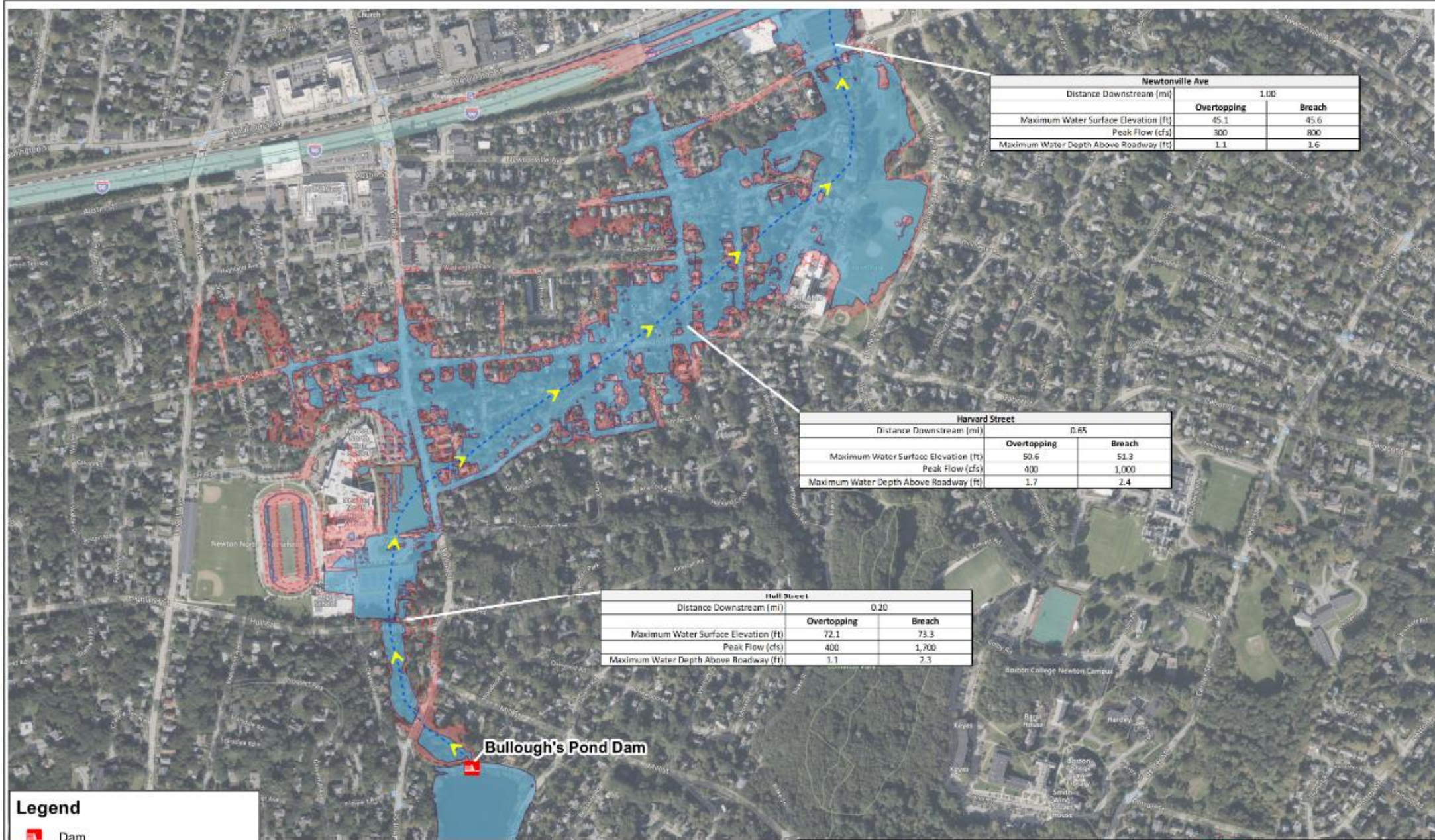


Follow-up from previous PFC Meeting

- Updated Inundation Map
 - Identify difference from Overtopping event from Breach event.
- Identify Core Wall Modification Risk
 - Identify expected cost increases in the core wall modification option if the existing core wall were insufficient for a structural support wall.
- Restoration Plans
 - Identify what the site restoration would look like including any additional improvements to the area.



Inundation Map



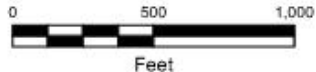
Newtonville Ave		
Distance Downstream (mi)	1.00	
	Overtopping	Breach
Maximum Water Surface Elevation (ft)	45.1	45.6
Peak Flow (cfs)	300	800
Maximum Water Depth Above Roadway (ft)	1.1	1.6

Harvard Street		
Distance Downstream (mi)	0.65	
	Overtopping	Breach
Maximum Water Surface Elevation (ft)	50.6	51.3
Peak Flow (cfs)	400	1,000
Maximum Water Depth Above Roadway (ft)	1.7	2.4

Hull Street		
Distance Downstream (mi)	0.20	
	Overtopping	Breach
Maximum Water Surface Elevation (ft)	72.1	73.3
Peak Flow (cfs)	400	1,200
Maximum Water Depth Above Roadway (ft)	1.1	2.3

Legend

- Dam
- Flow Direction
- Overtopping Inundation Boundary
- Breach Inundation Boundary



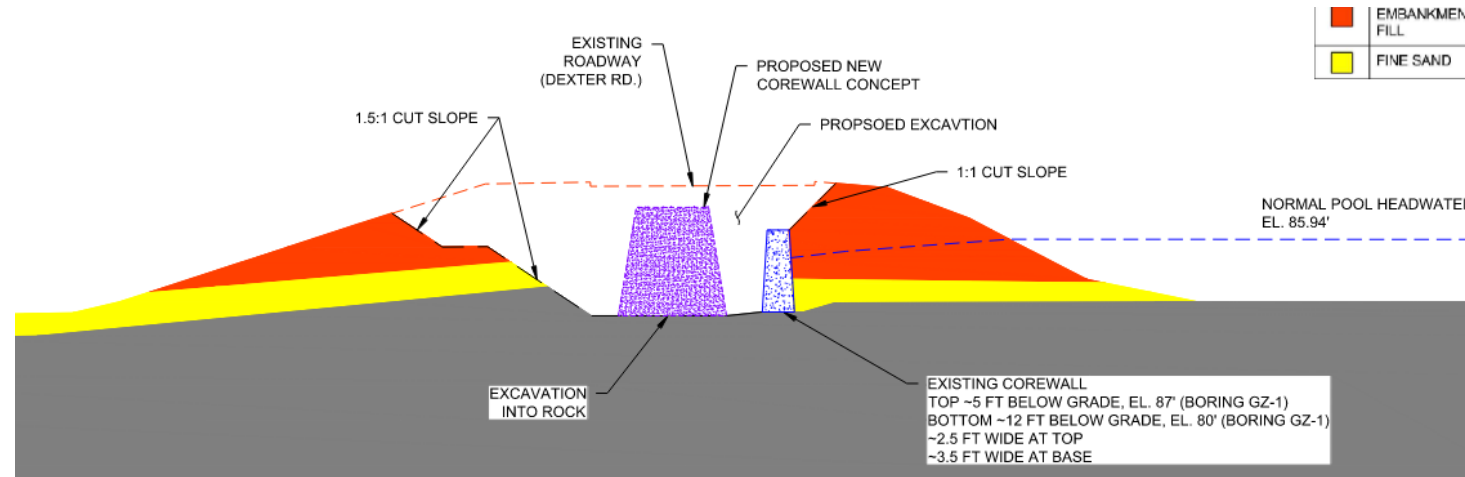
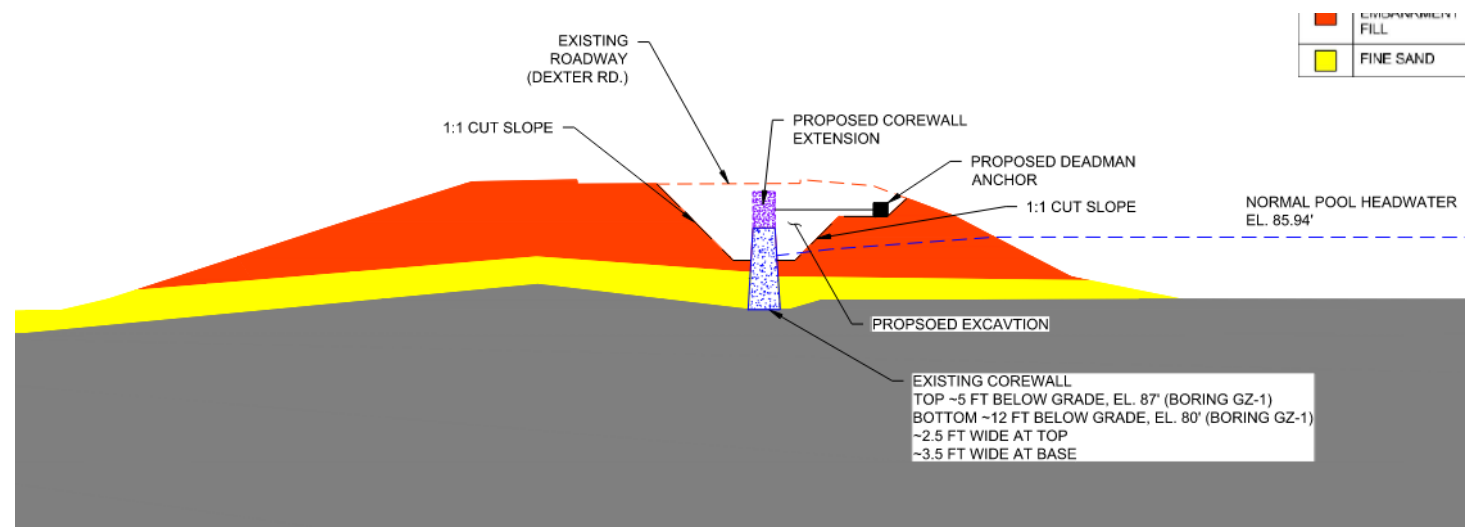
Bullough's Pond Dam Rehabilitation
 City of Newton, Massachusetts



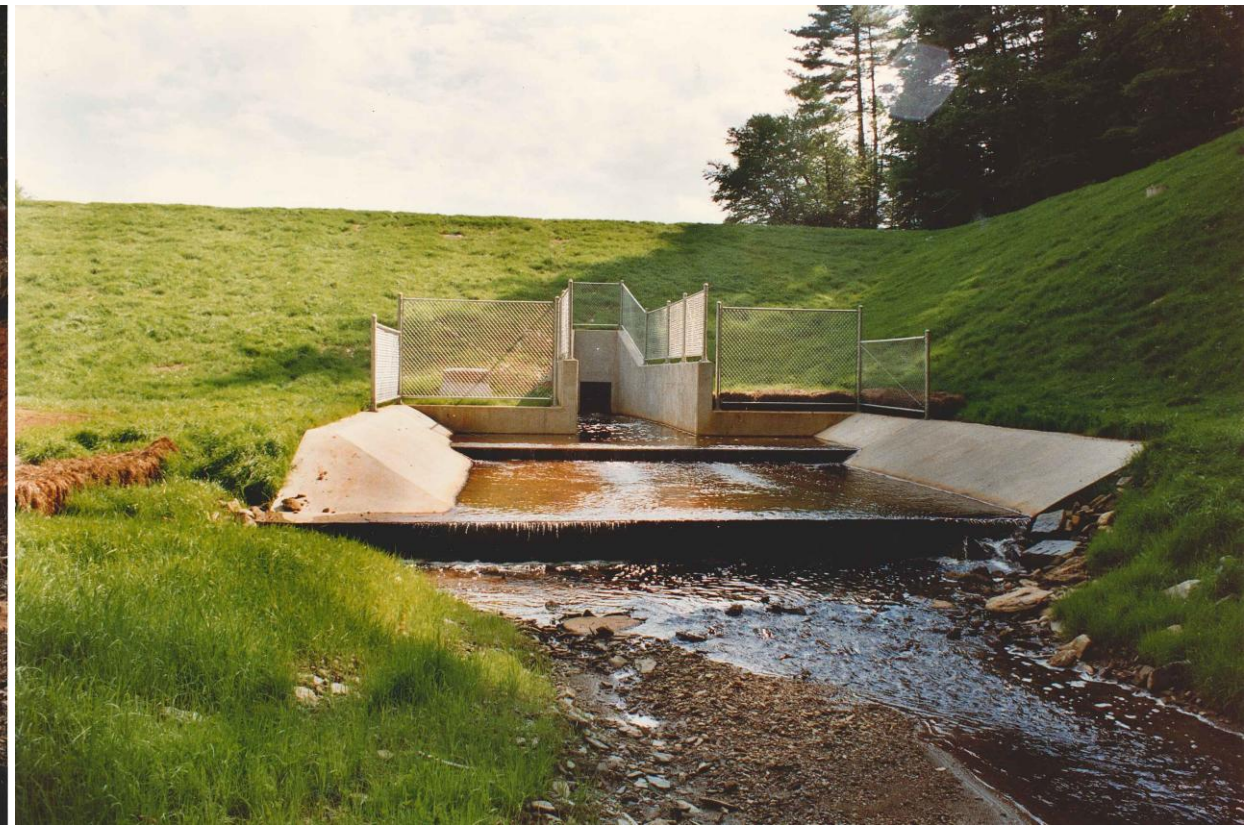
Inundation Map for Bullough's Pond Dam
 Project 2201005 | July 2025 | Page 1 of 1

Core Wall Risk

- Risk of existing core wall not being structurally adequate.
- Would require additional excavation and a new wall installed.
 - Expected costs increase of an additional \$8M
- Increases in excavation, soil management and disposal, concrete



Articulated Concrete Blocks



Bullough's Pond Dam

Potential Mitigation Projects Around Pond Area



Newton Parks, Recreation & Culture Department



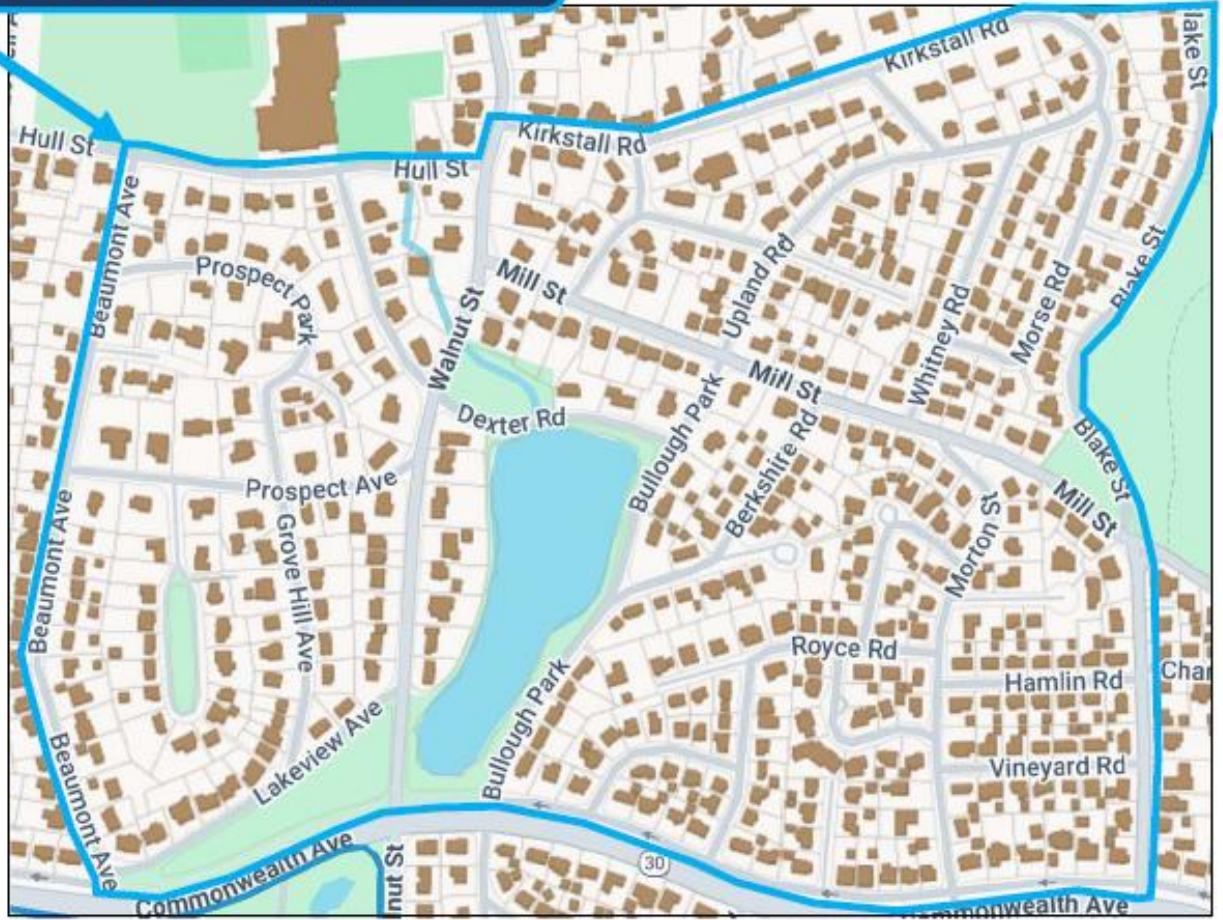


Strategically placed native trees to be planted in open areas around the pond area and other adjacent open space areas.

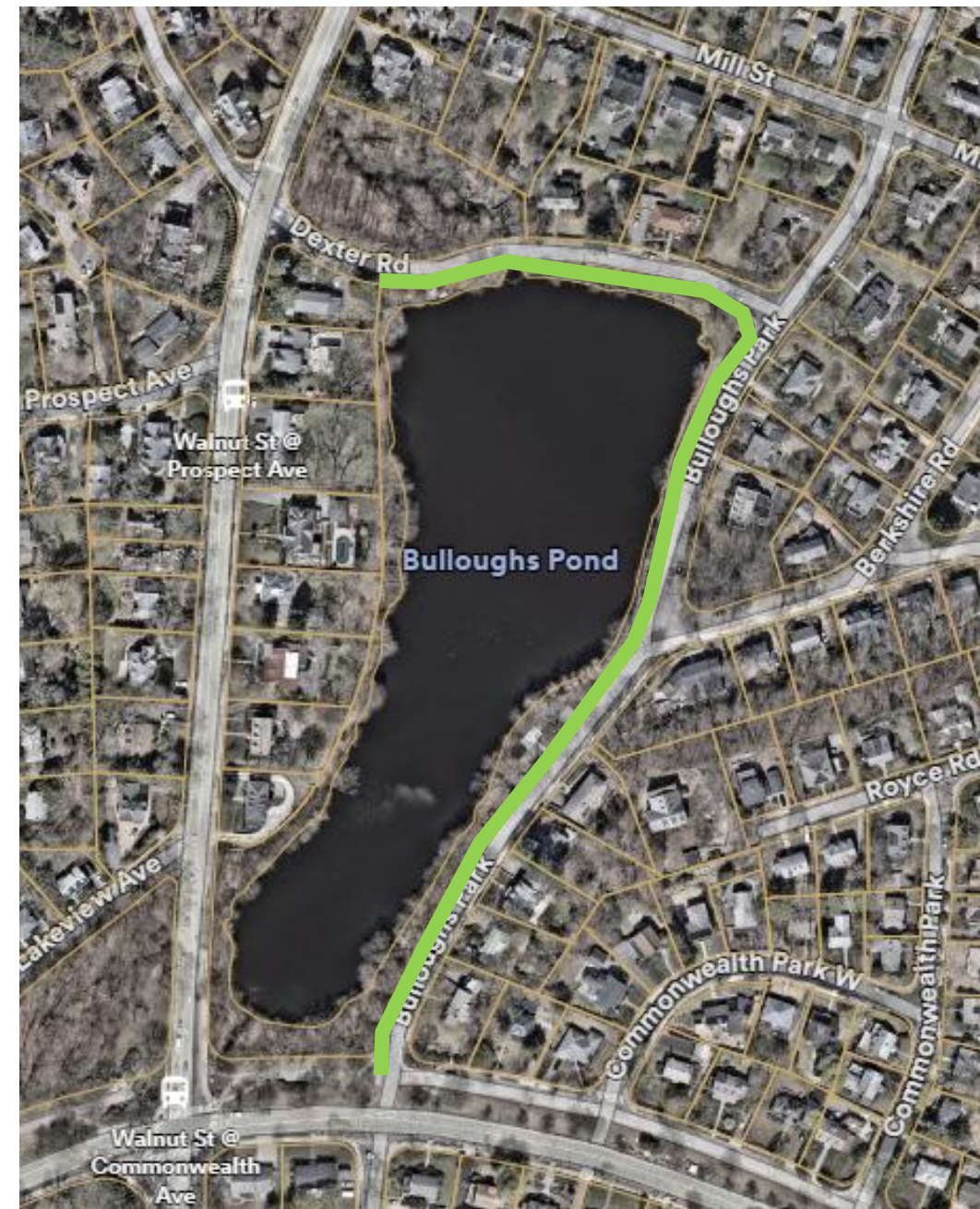
25 to 35 trees to be planted.

Address vacant planting spaces throughout the surrounding streets designated below.

250 to 300 trees to be planted.



BULLOUGH'S DAM TREE MITIGATION PLAN – POTENTIAL POND AREA PROJECTS

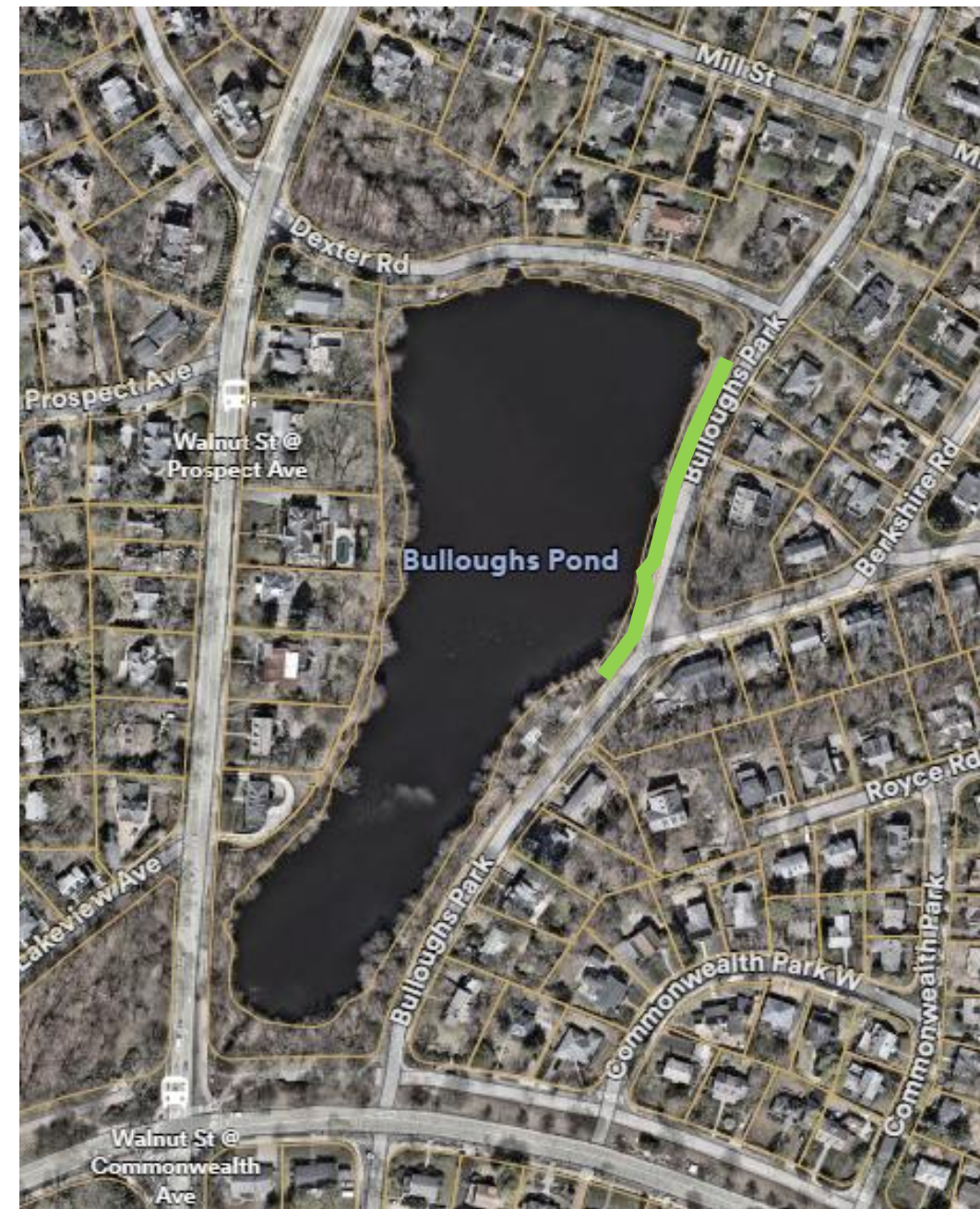


Improve sidewalks to provide accessibility and improve walkability around the pond



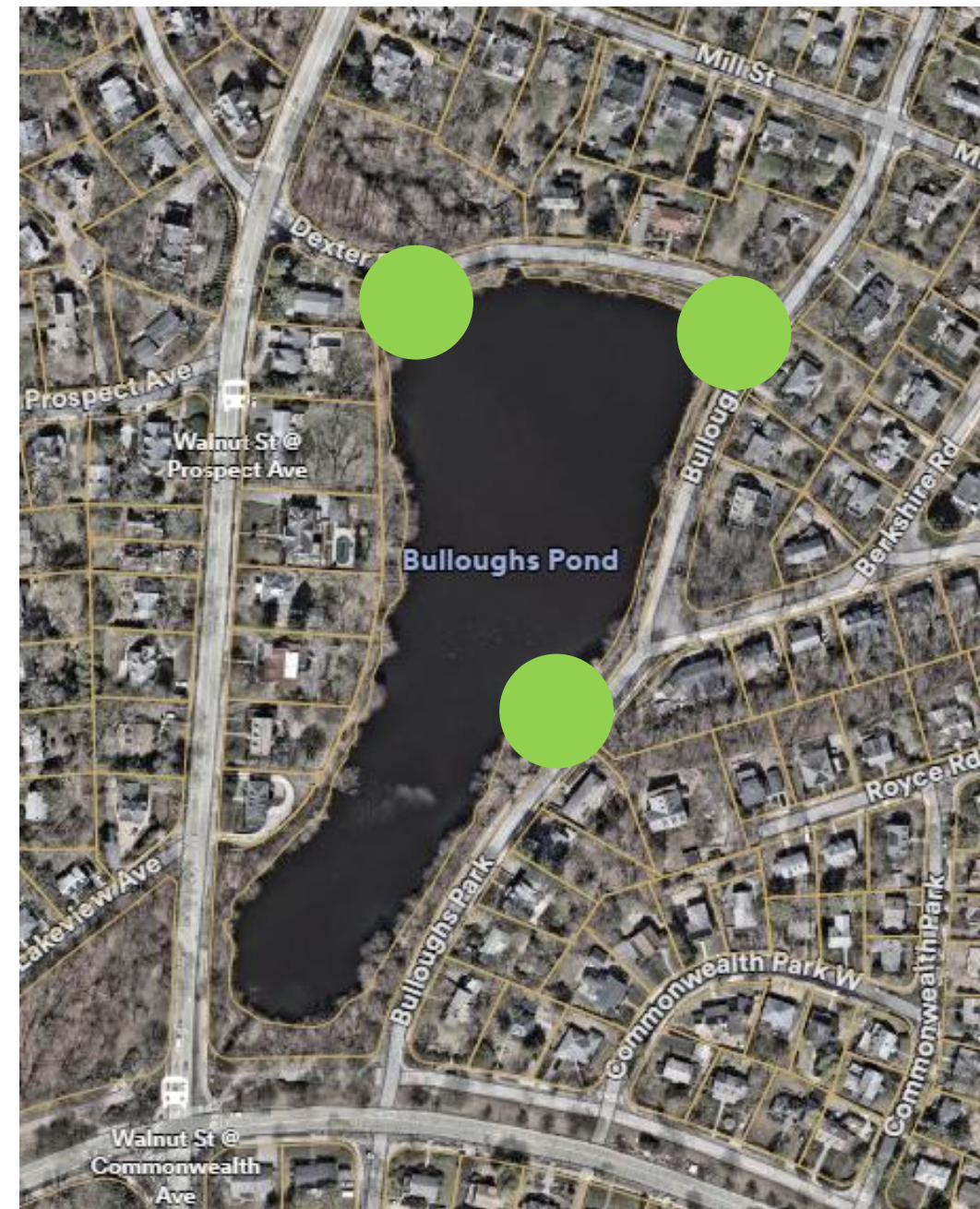
Improve curbs to improve street drainage and curtail bank erosion

POTENTIAL BULLOUGH'S PARK IMPROVEMENTS



- Remove invasive barberry and replace with low, native slope stabilizing plantings
- Enhance slope and bank area with native plants to enhance wildlife habitat

POTENTIAL BULLOUGH'S PARK IMPROVEMENTS



- Replace asphalt driveway with porous and stabilized material that can still accommodate NFD access
- Improve views at outlooks to enhance views

POTENTIAL BULLOUGH'S PARK IMPROVEMENTS



POTENTIAL BULLOUGH'S POND NEW POCKET PARK



BENCH STYLE

POTENTIAL BULLOUGH'S POND POCKET PARK

Discussion



Next Steps

- Grant Opportunities: Dam and Seawall Repair Program - EOEEA, Hazard Mitigation Assistance Grants - MEMA
- Proceed to final design, winter, spring
- Conservation Commission, at final design
- Office Of Dam Safety, at final design
- Construction bids, Funding request with City Council
- Construction in 2026

