



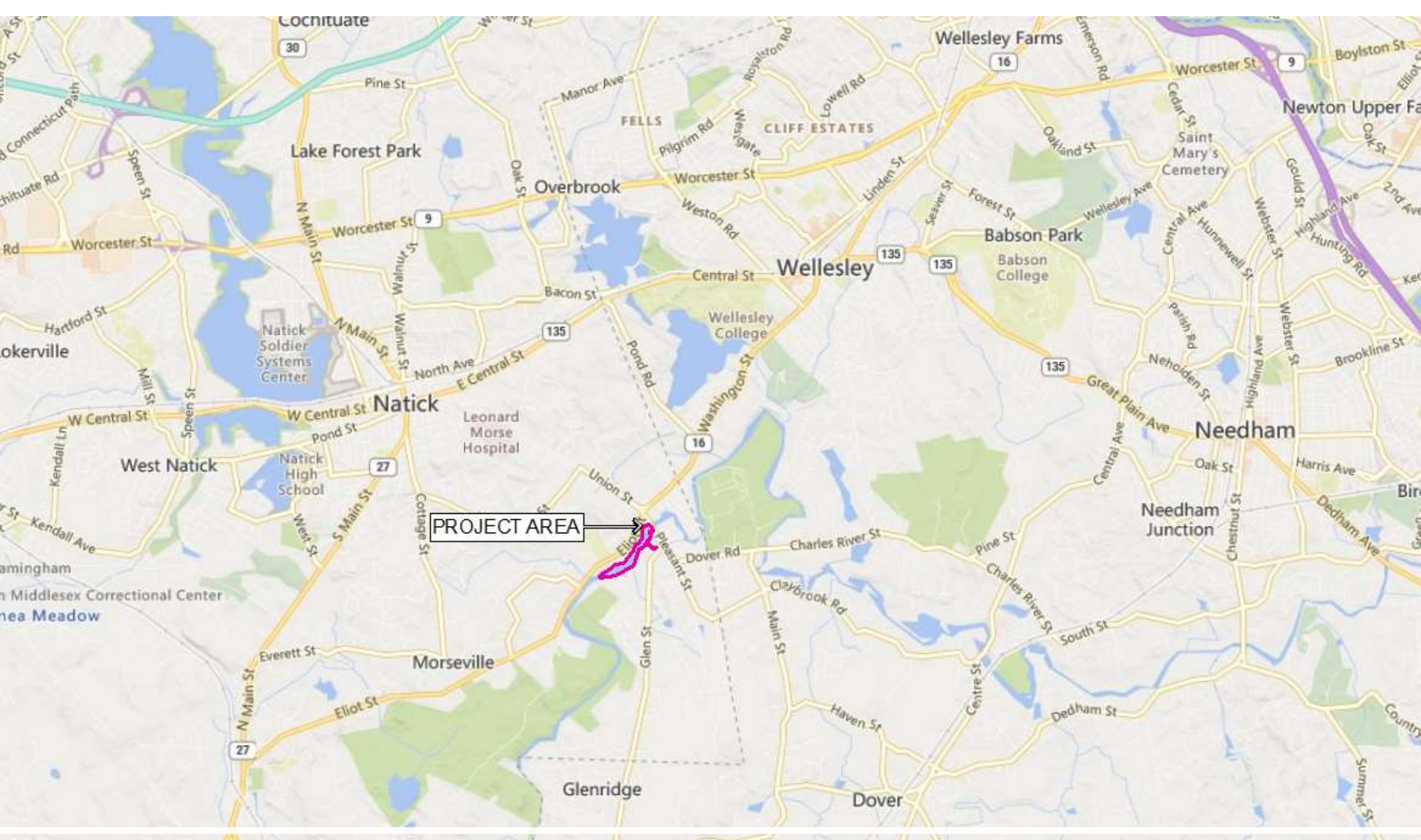
Known for excellence. Built on trust.



Charles River Dam Decommissioning and River Restoration Project

11 Pleasant Street
South Natick

MEPA Virtual Public Consultation Meeting
May 23, 2024



Project Setting

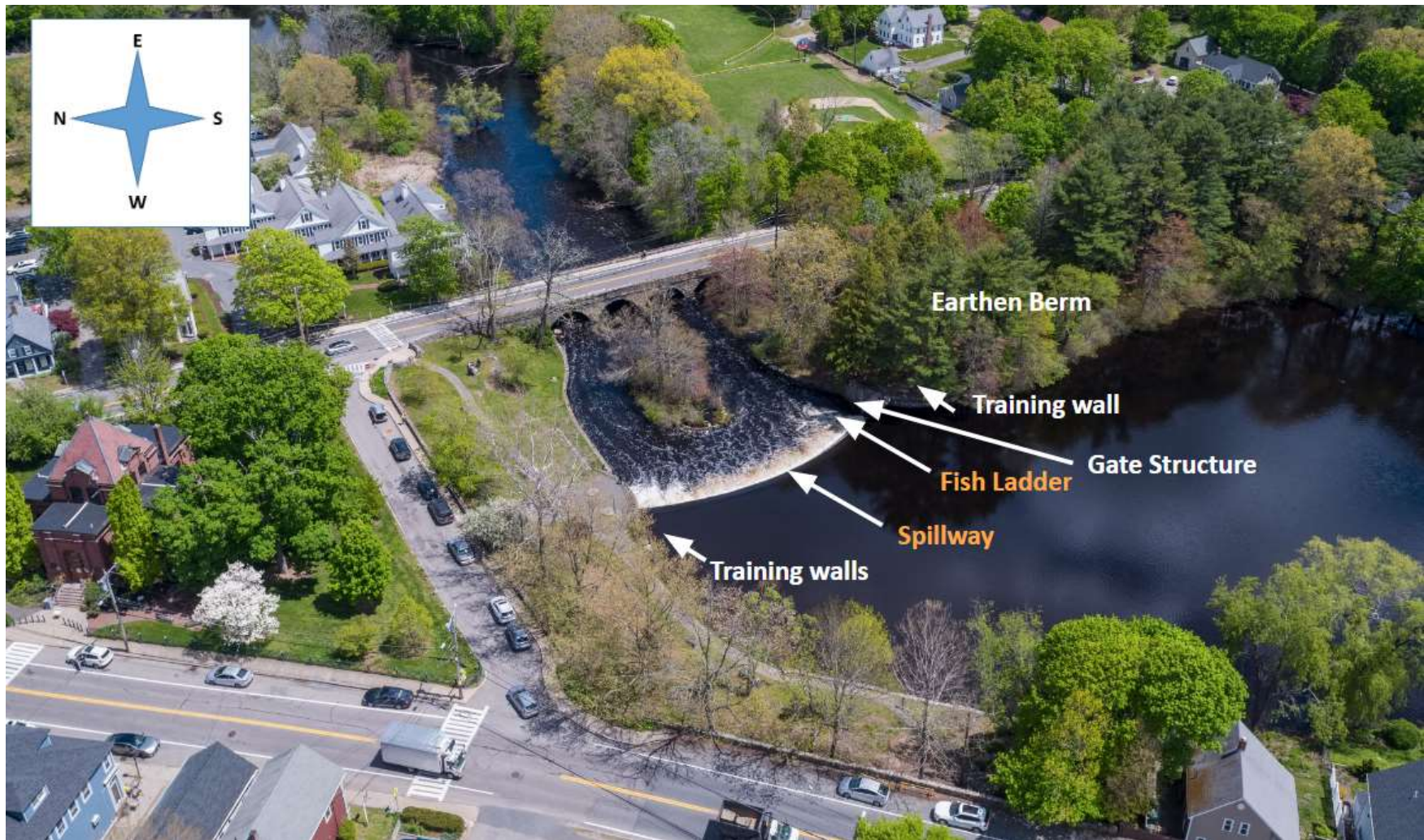


Project Purpose

Decommission the dam to permanently resolve the safety and liability concerns related to maintaining a High hazard dam.

Restore the Charles River within the impoundment area to enhance natural processes and improve climate resilience.

Project Definitions



State Actions & MEPA Thresholds

- State Actions:
 - Dam Decommissioning:
 - 401 Water Quality Certificate
 - Chapter 91 Permit
 - Dam and Seawall Grant
 - Park Project:
 - Municipal Vulnerability Program Funding
 - Possible Chapter 91 License
- MEPA Thresholds:
 - *(3)(a)(1)(b): Alteration of 10 or more acres of any other wetlands (Land Under Water)*
 - *(3)(a)(4): Structural alteration of an existing dam that causes any decrease in impoundment Capacity*
 - (3)(b)(1)(b): Alteration of 500 or more linear feet of bank along a fish run or inland bank
 - (3)(b)(1)(f): Alteration of ½ or more acres of any other wetlands
 - (3)(b)(3): Dredging of 10,000 or more cy of material
 - (10)(b)(1) Demolition of any Historic Structure listed in the State Register of Historic Places or the Inventory of the Historic and Archaeological Assets of the Commonwealth

Park Design Project – Notice of Project Change



MUNICIPAL VULNERABILITY PROGRAM
FUNDING



RE-DESIGN AND UPDATES TO EXISTING
AND NEWLY EXPOSED PARKLANDS

Park Project

- South Natick Dam Park
 - Naturalized river access
 - Enhanced accessibility & seating
- Grove Park
 - Path network
 - Picnic area
 - Potential future water access
- South Natick Multipurpose Courts
 - Convert a portion of hardcourt to parking
 - Naturalize area
 - Increased walkway connectivity



Background

Dam is Constructed

Dam built for recreational use during Great Depression

Deficiencies Noted in Dam Safety Inspection

Dam found to be in fair condition, regular inspections begin. ODS issues new statewide dam safety regulations, including prohibition of trees

Town Monitors Deficiencies and Makes Plans to Repair

Town continues regular inspections; dam repair added to capital plan; dam noted on 2010 Hazard Mitigation Plan

Town Meeting Appropriates Funding for Repair & Begins Work

Appropriations occur in 2018 and 2019; GZA designs first phase of repair work and begins permitting process

Public Requests Consideration of Spillway Removal

Con Comm hosts public info meeting; residents unhappy with tree removal; request consideration of removal

Initial Feasibility Study of Removal Completed

Sedimentation sampling and analysis performed confirm removal is a viable alternative

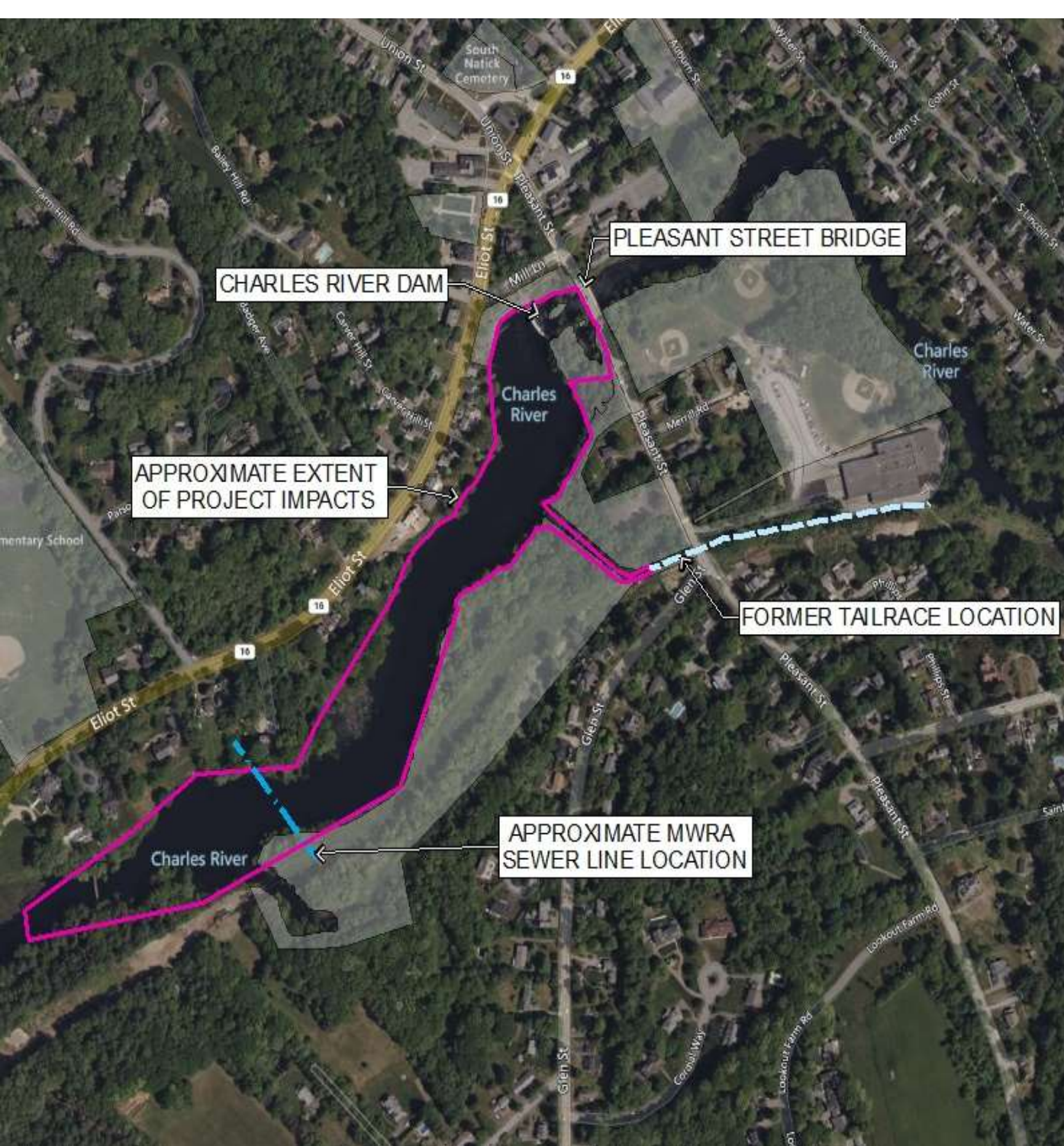
Advisory Committee Forms and Begins Work

TA proposes Committee approach to Select Board; group forms and work begins

1934 2006 2008 2018 2019 2020 2021

Advisory Committee Process

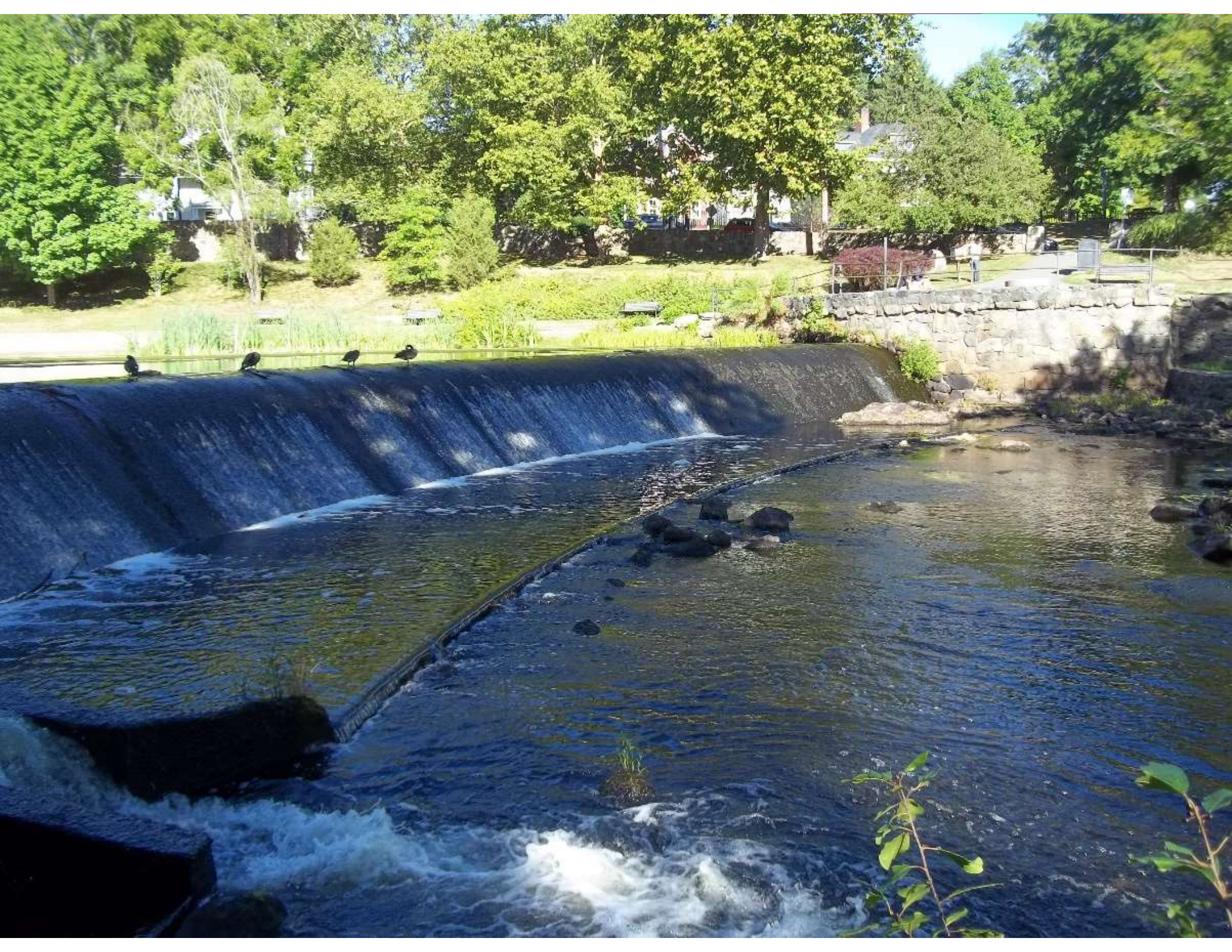
- Outreach began in 2021
 - Community presentation about the topic and issues
 - Two virtual community input sessions
 - Community-wide survey
 - Public meetings
 - 8 meetings in 2021
 - 6 meetings in 2022
 - Advisory Committee Recommends Dam Decommissioning on September 7, 2022
 - Select Board Votes to support the recommendation on November 10, 2022
-



Existing Conditions

- 16-acre impoundment upstream of dam
- Town-owned park land along both sides of river





Project Alternatives

- No action
- Rehabilitate Dam
- **Decommission Dam**

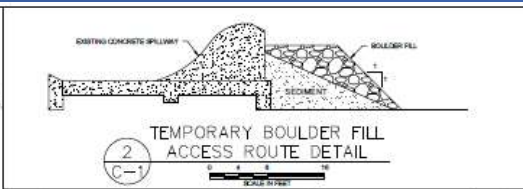
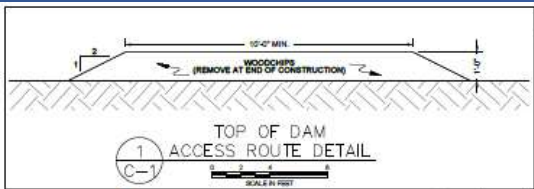


Proposed Project

- Remove spillway to restore free-flowing river
- Wetland & Floodplains re-established within existing open water areas

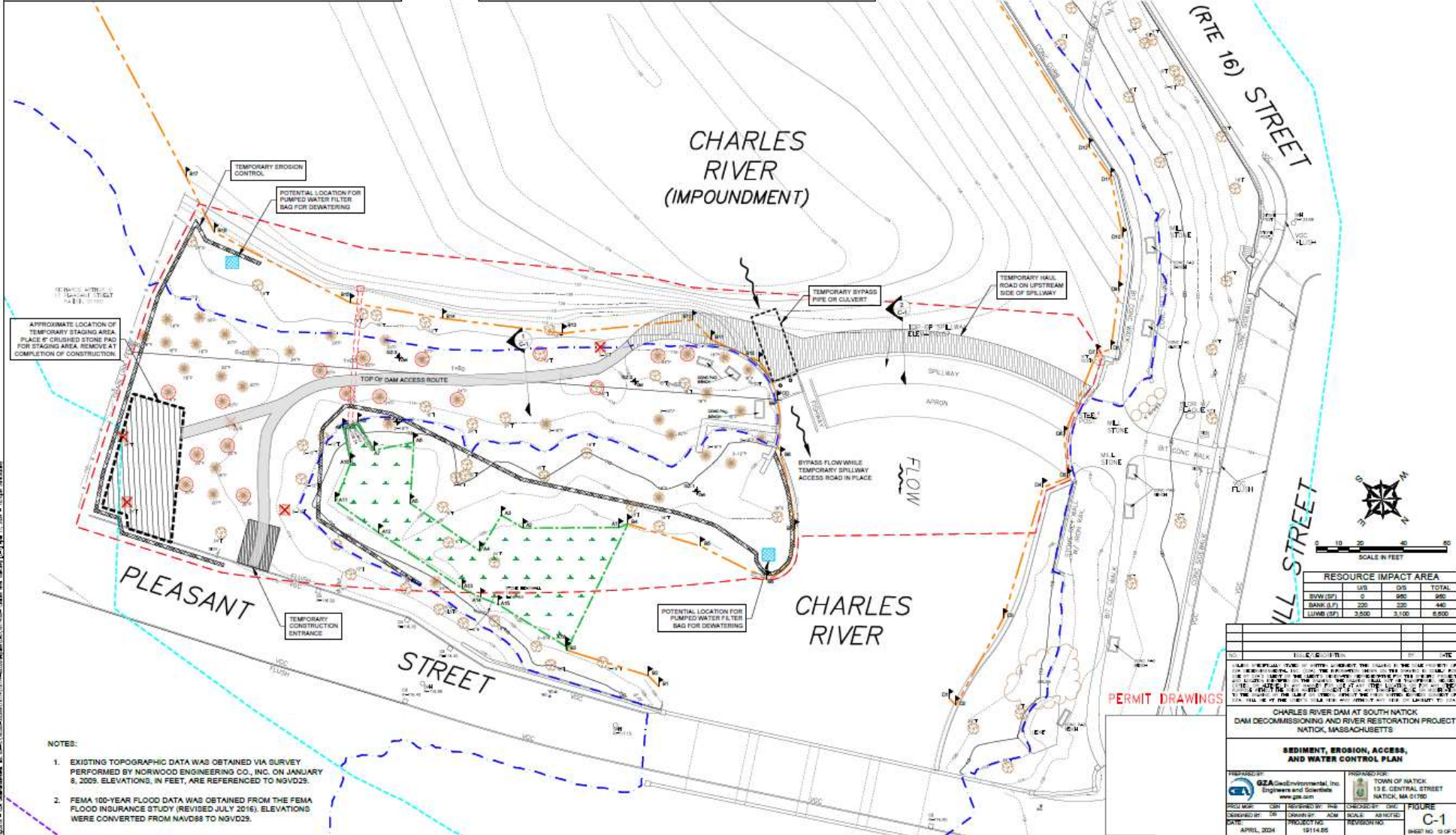






LEGEND

- EXISTING CONTOUR (NGVD83)
- WETLAND FLAG / BANK FLAG AND NUMBER
- TEST BORING, REFERS TO LOGS ON SHEET G-6
- OW - INDICATES GROUNDWATER OBSERVATION WELL
- TREE PROTECTION (EXISTING TREE TO REMAIN)
- REMOVE TREE AND GRIND STUMP FLUSH WITH GROUND SURFACE
- TOP OF DAM ACCESS ROUTE
- TEMPORARY EROSION CONTROL
- BORDERING VEGETATED WETLANDS (BWW)
- BANK ORDINARY HIGH WATER (BOW)
- 100-FOOT BORDERING VEGETATED WETLAND AND BANK BUFFER
- 200-FOOT RIVERFRONT AREA
- FEMA 100-YEAR FLOOD (BASE FLOOD ELEVATION) / BORDERING LAND SUBJECT TO FLOODING (NGVD83)
- LIMIT OF WORK
- 1524 DAM CONSTRUCTION LIMITS
- STAGING AREA



RESOURCE IMPACT AREA

	SW	DW	TOTAL
BWW (SQ FT)	0	850	850
BANK (SQ FT)	200	200	400
LUMBS (SQ FT)	3,500	3,100	6,600

- NOTES:**
- EXISTING TOPOGRAPHIC DATA WAS OBTAINED VIA SURVEY PERFORMED BY NORWOOD ENGINEERING CO., INC. ON JANUARY 8, 2025. ELEVATIONS, IN FEET, ARE REFERENCED TO NGVD83.
 - FEMA 100-YEAR FLOOD DATA WAS OBTAINED FROM THE FEMA FLOOD INSURANCE STUDY (REVISED JULY 2016). ELEVATIONS WERE CONVERTED FROM NAVD83 TO NGVD83.

PERMIT DRAWINGS

CHARLES RIVER DAM AT SOUTH NATICK
DAM DECOMMISSIONING AND RIVER RESTORATION PROJECT
NATICK, MASSACHUSETTS

SEDIMENT, EROSION, ACCESS, AND WATER CONTROL PLAN

PROJECT NO.:	24-001	DATE:	APRIL 2024
DESIGNED BY:	CSM	CHECKED BY:	ADW
DRAWN BY:	CSM	DATE:	12/14/23
PROJECT NO.:	24-001	REVISION NO.:	01
DATE:	APRIL 2024	PROJECT NO.:	12/14/23

PROPOSED FOR: TOWN OF NATICK
13 E. CENTRAL STREET
NATICK, MA 01790

FIGURE C-1

Environmental Impacts

- Permanent Impacts
 - Sediment
 - Wetland and Surface Water Resources
 - Climate Change and Resiliency
 - Open Space, Scenic Qualities, and Recreation
 - Historical and Archaeological Resources
- Construction Impacts
 - Traffic, Transit, Bicycle, and Pedestrian Access
 - Greenhouse Gas Emissions, Air Quality, and Noise
 - Solid and Hazardous Waste
- No anticipated impacts
 - Utilities
- No Impacts
 - Topography
 - Soil and Geology
 - Massachusetts Protected Species and Habitat
 - Environmental Justice Populations

Permanent - Sediment

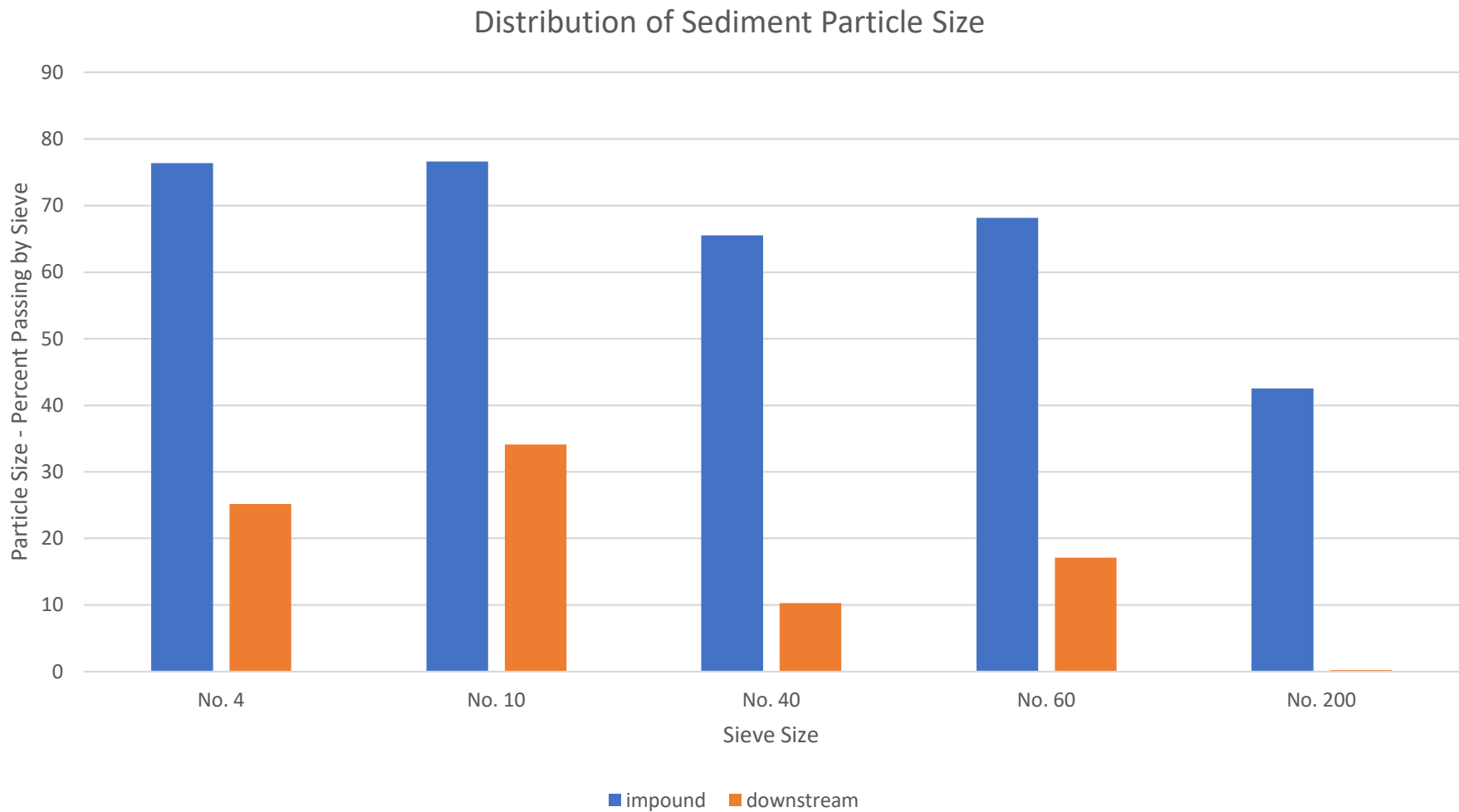
Impact:

- Passive release of approximately 11,500 cubic yards of sediment

Avoid:

- Sediment is “clean” and meets the Massachusetts Contingency Plan S-1/GW-1 standards for unrestricted reuse for required constituents:
 - Metals – Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, and Zinc;
 - Polycyclic Aromatic Hydrocarbons (PAHs);
 - Polychlorinated Biphenyls (PCBs) – Total;
 - Total and Extractable Petroleum Hydrocarbons (TPH/EHP) – by MassDEP method;
- Sediment did not exceed Massachusetts Division of Ecological Restoration probable effect concentrations.

Permanent Impact - Sediment



Permanent - Sediment



Impact:

- Passive release of approximately 11,500 cubic yards of sediment



Minimize:

- Allow for geo-morphically stable banks to develop through impoundment area decreasing overall work area and disturbance.

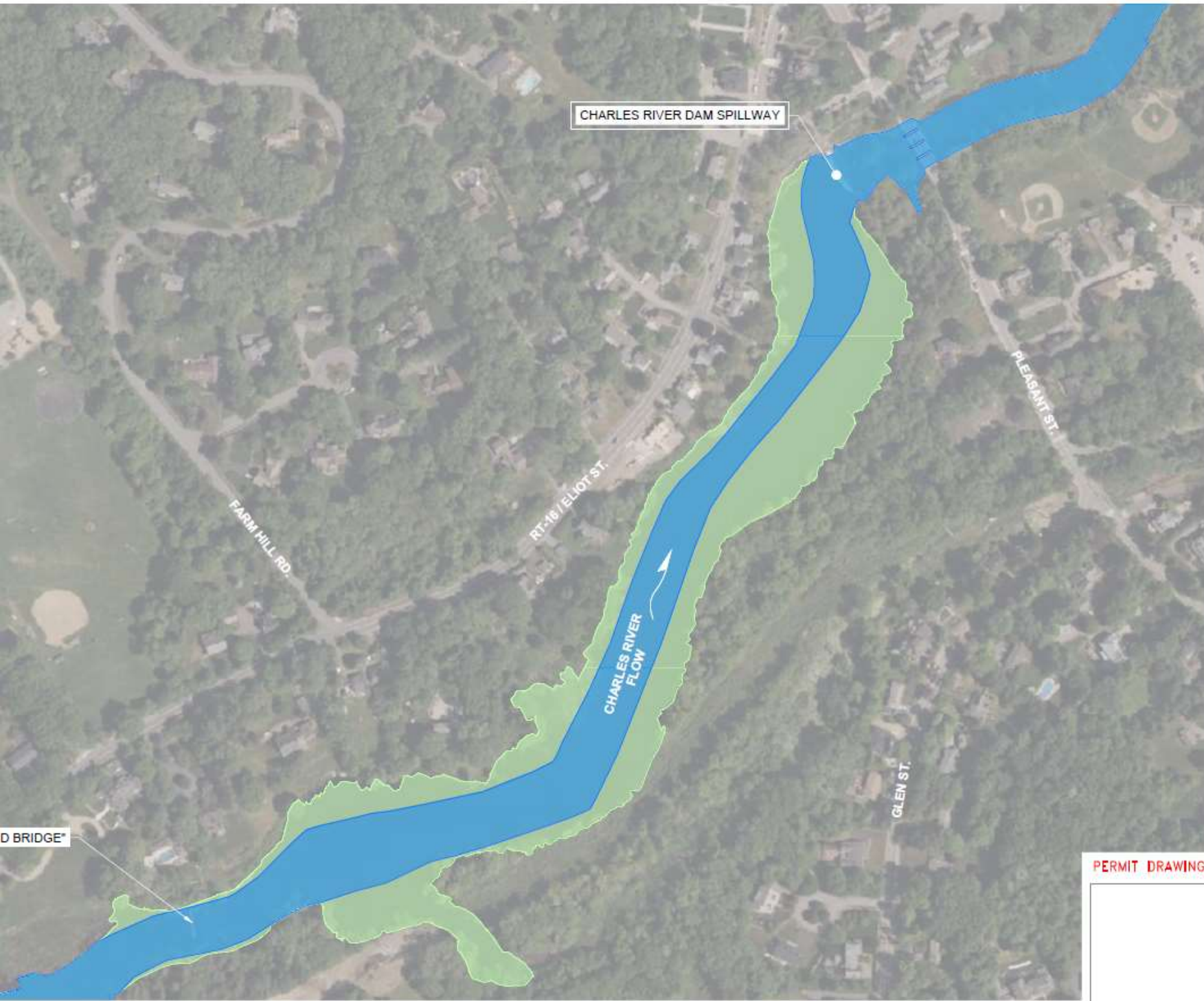


Mitigate:

- Sediment management practices to monitor downstream infrastructure for excess sediment accumulation.

Permanent – Wetland and Surface Water

- Impact:
 - Impoundment Area:
 - Conversion of Land Under Water Bodies and Waterways to Bordering Vegetated Wetlands and Bordering Land Subject to Flooding.
 - Bank will shorten and relocate.
 - Riverfront Area will decrease.
 - Downstream:
 - No resource area impacts.
 - Potential improved water quality and regularity of flows at Needham Water Department Zone II Water Supply Area.



NOTES:

1. THE BACKGROUND IMAGE WAS MICROSOFT BING SATELLITE, 2018.
2. THE USE OF AERIAL PHOTOGRAPHS MAY MAKE BUILDINGS AND OTHER STRUCTURES APPEAR TO BE OVERLAPPING AND NOT OVERLAID WITH ACTUAL SITE FILES.

LEGEND

- PROPOSED CHARLES RIVER
- EXISTING CHARLES RIVER



PERMIT DRAWINGS

NO. 10114.0010	
<small> GZA Geo-Environmental, Inc. (GZE) is hereby authorized to use the information contained herein for the purposes of the project described herein. The information contained herein is the property of GZA Geo-Environmental, Inc. and shall not be used for any other purpose without the written consent of GZA Geo-Environmental, Inc. </small>	
CHARLES RIVER DAM AT SCOTTS DAM DECOMMISSIONING AND RIVER RECONSTRUCTION PROJECT NATICK, MASSACHUSETTS	
FINAL CONDITIONS PLAN	
<small> Prepared by: GZA Geo-Environmental, Inc. Engineers and Scientists www.gza.com </small>	<small> Proposed by: </small>
<small> Drawn by: GZ Checked by: GZ Date: APRIL, 2024 </small>	<small> Reviewed by: GZ Checked by: GZ Project No.: 10114.00 Revision: </small>

Permanent – Wetland and Surface Water

- Impact: Impoundment Area Resource Conversion
- Eligible for review as an Ecological Restoration Limited Project will allows for resource area conversion.

Resource Area	Existing	Proposed	Permanent Change
Land Under Water Bodies and Waterways	691,863 SF	384,675 SF	-307,188 SF
Bank	3,683 LF	3,582 LF	-101 LF
Bordering Vegetated Wetlands	0 SF	307,188 SF	+307,188 SF
Bordering Land Subject to Flooding	754,795 SF	714,925 SF	-39,870 SF
Riverfront Area	1,303,162 SF	1,097,014 SF	-206,148 SF

Permanent – Wetland and Surface Water

- Protects Public or Private and Ground Water Supply:
 - Wetlands retain and release water during dry times to maintain base flow conditions.
 - Wetlands capture nutrients and sediments which can improve water quality in the river.
 - Better distributes sediment composition including organic materials which better remove nutrients from water.
 - Native vegetation and increased shading of the river may increase groundwater recharge.

Permanent – Wetland and Surface Water

- Flood Control:
 - Lowered peak water surface elevation during flood events which will increase protection to upstream properties.
 - Creation of a river channel with overbank floodplains and wetlands allows for safe flooding where the flooded areas slow and store water.
 - Flood attenuation and asynchronous release of floodwaters.
- Storm Damage Prevention:
 - Restoring natural sediment processes decreases excessive scour in sediment starved areas, improving river bank stability

Permanent – Wetland and Surface Water

- Prevention of Pollution:
 - Vegetated buffers between developed land and open water decreases runoff-related pollution by filtering stormwater.
 - Preserves water quality as described above.
 - Decreased open water surface area and naturally-formed banks decreases water residence time in the impoundment decreasing thermal pollution of the water.
 - Healthy wetlands better store carbon dioxide through the accumulation of organic material in the soil.

Permanent – Wetland and Surface Water

- Protection of Fisheries:
 - Removes a fish migration barrier and provides improved passage to American eel, alewife herring, blueback herring, and American shad. Other dams between Natick and the ocean may present ongoing barriers.
 - Project anticipated to increase water quality and decrease thermal pollution which benefits more cold-tolerant fish species found in the downstream Cold Water Fisheries.
 - Improved sediment flows may enhance invertebrate habitat which is a food source for fish.
 - Naturalized banks improve breeding habitat, escape cover, and improved food resources.
 - Will follow time of year restrictions identified by Division of Marine Fisheries (DMF) for the Charles River in Wellesley given the proximity. No time of year restrictions identified for Natick.

Permanent – Wetland and Surface Water

- Protection of Wildlife Habitat:
 - Vegetated wetlands are identified in the Wetland Protection Act as the “most important inland habitat for wildlife” and the Project will increase vegetated wetland area.
 - Creates contiguous naturalized area to provide improved food, shelter, migratory, overwintering, and breeding habitat for wildlife.
- Mitigation:
 - Park Improvement project will propose native plantings within Town properties.
 - Impoundment area will be adaptively managed to address invasive species colonization.

Permanent – Climate Change & Resiliency: Extreme Heat Modeling



Impact:

- Average annual, summer, and winter temperatures are expected to increase

Avoid:

- The Project may decrease GHG emissions which drive climate change.

Minimize:

- Exposed impoundment substrate will naturally revegetate and provide shading to the river.

Mitigate:

- The converted impoundment will create increased habitat connectivity for wildlife to find suitable habitat.

Permanent – Climate Change & Resiliency: Hydrologic & Hydraulic Modeling



Impact:

- The dam removal will change existing and flooding conditions within the impoundment area.

Avoid:

- Removing the spillway lowers the peak water surface elevation during the 100- and 500-year storm in the impoundment area.
- Removing the spillway does not change peak water surface elevations during the 100- and 500-year storms at the dam or downstream.

Minimize:

- Velocity and shear rates vary throughout the study area, but the changes are relatively low and are unlikely to be observable.

Mitigate:

- The impoundment area will be allowed to naturalize, which will improve flood attention.

Permanent – Open Space, Scenic Qualities, & Recreation

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Impact:

- Properties have Article 97 restrictions.
- Water surface elevations will change in the impoundment area.
- Visual conversion of open water to wetlands and uplands.

Avoid:

- No change in existing Article 97 restrictions.
- Water depth is anticipated to be deep enough for kayaking and fishing during most times of year.

Minimize:

- Reduced removal of mature trees from the dam embankment.

Mitigate:

- Exposed impoundment areas will be allowed to naturalize.

Permanent Impacts – Historical and Archaeological Resources



Impact:

- South Natick Dam is on the National Register of Historic Places.
- Grove Park and South Natick Dam Park are on the National Register of Historic Places.
- Pleasant Street Bridge is on the National Register of Historic Places.

Avoid:

- Hydraulic analysis indicates change in flows will not increase scour to Pleasant Street Bridge.
- Ground disturbance will be avoided during construction through the use of the wood chip ground protection.

Minimize:

- Limited the total and construction staging areas.
- Minimized disturbance to impoundment sediments near the dam by allowing for passive transport instead of active dredging.

Mitigate:

- The Town will consult with MHC and THPO through the federal Section 106 consultation process for mitigation of the removal of the dam spillway.
- Incorporate a walk-over study of the exposed impoundment substrate following drawdown to identify potential resources.

Construction – Traffic, Transit, Bicycle, & Pedestrian Access

Impact:

- Potential temporary traffic disruptions during equipment mobilization/demobilization and material hauling.
- Park closure during construction.

Avoid:

- Traffic disruptions timed outside of heavy traffic times.

Minimize:

- Work timed during low-flow conditions to shorten overall construction timeline anticipated.

Mitigate:

- If necessary, coordinate with Natick Police for a police detail to direct traffic.

Construction – Greenhouse Gas Emissions, Air Quality, and Noise

Impact:

- Air and noise emissions may result from construction equipment.
- Potential fugitive dust from stockpiled materials.
- Potential odors from exposed sediments and/or stranded fish

Avoid:

- Not Applicable.

Minimize:

- Proper installation and maintenance of erosion control materials.
- Enforcing the idling limit of 5 minutes except under certain allowable circumstances.
- Requiring the use of Ultra Low Sulfur Diesel fuel for offroad vehicles
- Covering and minimizing waste containers and stockpiles.

Mitigate:

- Allow for natural revegetation of impoundment area.

Construction – Solid & Hazardous Waste

Impact:

- Demolition of the spillway and fish ladder will create concrete solid waste.
- Removal of the 4 trees and use of wood chip path will create wood material waste.
- No hazardous waste anticipated.

Avoid:

- Not applicable.

Minimize:

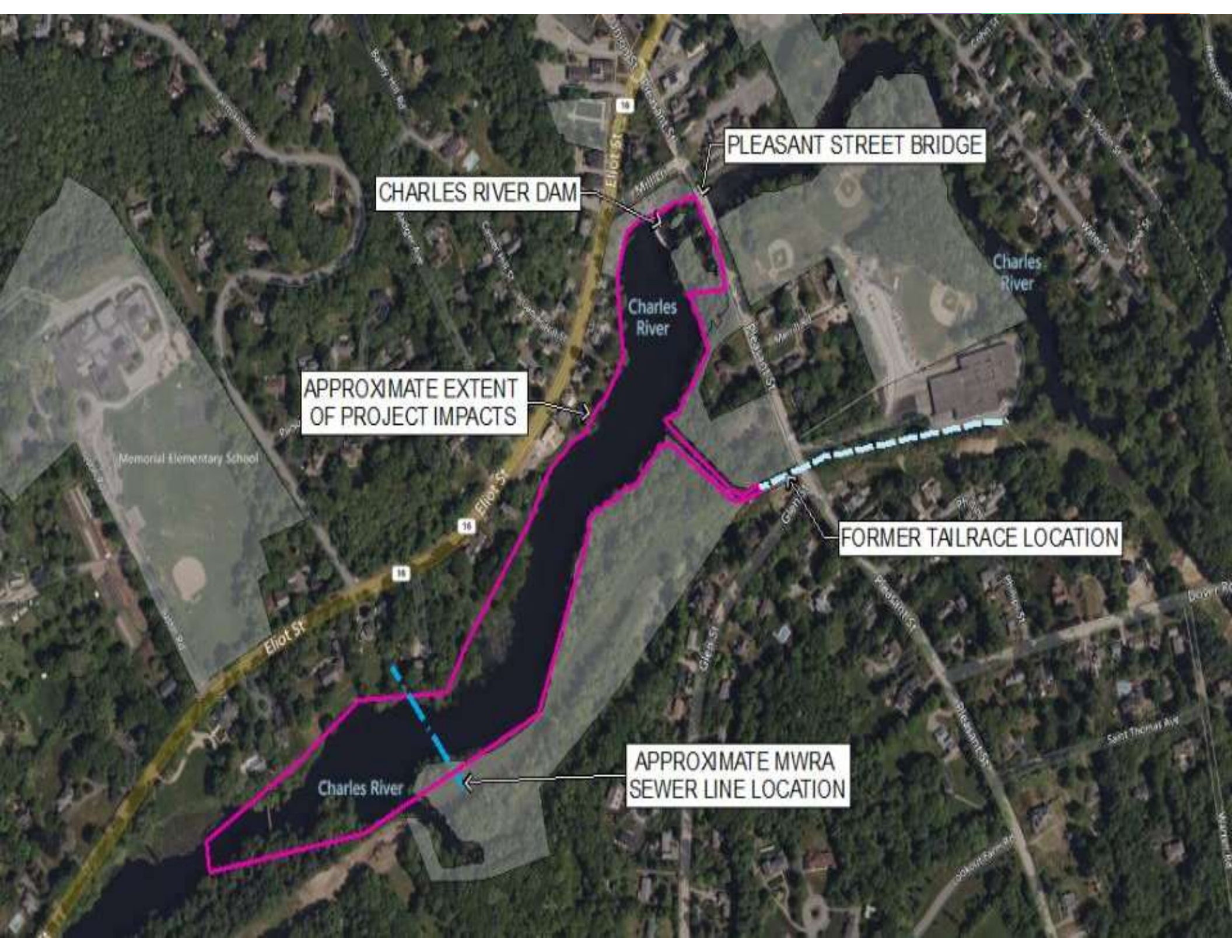
- Only remove the trees necessary to safely complete the work.

Mitigate:

- The Project will comply with the Massachusetts solid waste ban
 - Concrete will be broken in place, removed from the river channel, and hauled offsite for legal disposal at an approved reuse or disposal factory.
 - No wood material will be disposed of at a landfill. Wood material will be removed from the site.

No Anticipated Impacts - Utilities

- No utilities serve Town parcels currently.
- MWRA sewer line under impoundment area near upstream end.
- Electric utility line located near impoundment.



PLEASANT STREET BRIDGE

CHARLES RIVER DAM

APPROXIMATE EXTENT OF PROJECT IMPACTS

FORMER TAILRACE LOCATION

APPROXIMATE MWRA SEWER LINE LOCATION

Memorial Elementary School

Charles River

Charles River

Charles River

Eliot St

Eliot St

18

Galen St

Pleasant St

Pleasant St

Pleasant St

Saint Thomas Ave

Down Rd

Marshall Ave

No Anticipated Impacts - Utilities

- Avoid:
 - No change in utility service to Town parcels.
 - MWRA 1.9 feet below hard bottom of the impoundment. No erosion to this depth expected.
 - No change to topography outside impoundment area. No erosion of utility poles expected.
- Minimize:
 - Not Applicable.
- Mitigate:
 - Erosion of impoundment area and sediment depths will be monitored following dam removal and mitigation measures will be implemented if necessary.

Thank You!

- Comments:
 - Due by June 7
 - <https://eeaonline.eea.state.ma.us/EEA/MEPA-eMonitor/home>
 - Eva.Vaughan@mass.gov
- Questions?
 - Adrienne Dunk
 - Adrienne.dunk@gza.com