



# Public Meeting

## Holmes Dam Stream Restoration

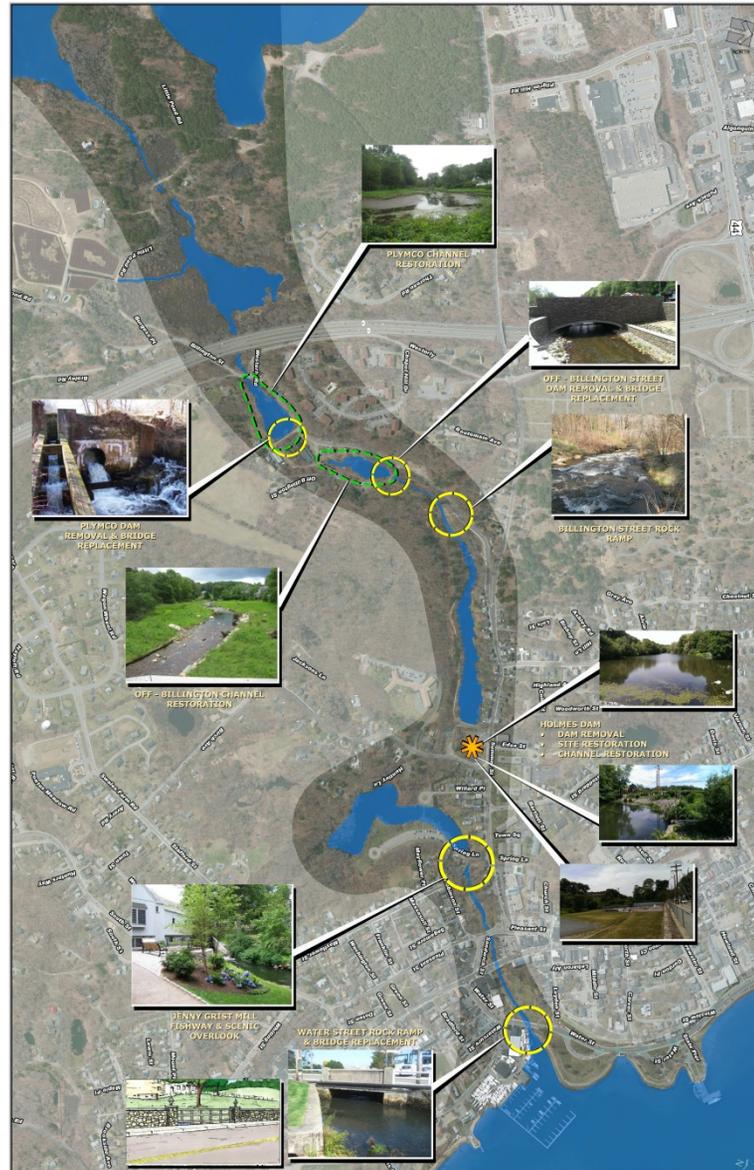


Town of Plymouth, Massachusetts | June 4, 2015

# Town of Plymouth Introduction

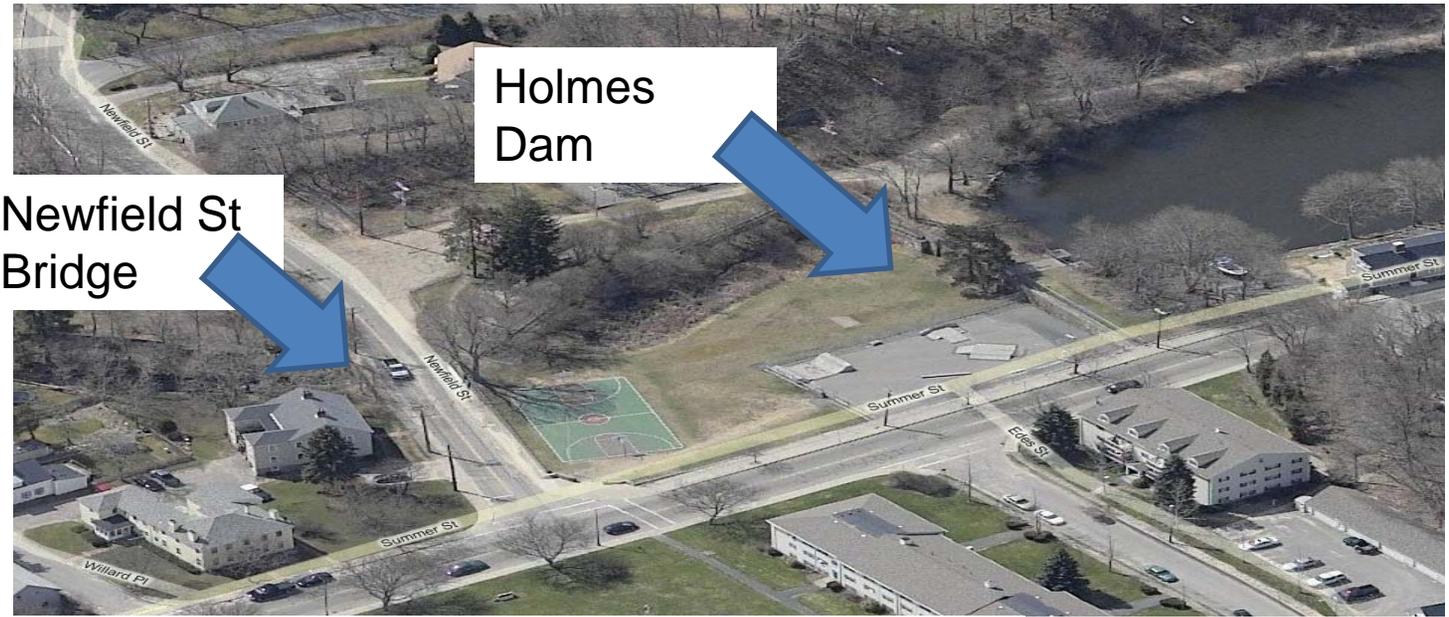
- Project Team
  - ✓ Department of Marine and Environmental Affairs (DMEA), National Oceanic and Atmospheric Administration (NOAA) Restoration Center, Division of Ecological Restoration (DER), United States Fish and Wildlife Service (USFWS). Engineering Firm: Milone and MacBroom, Inc.
- Why are we here
  - ✓ Background on Newfield Street Bridge/Holmes Dam
- Barrier Removals/Fish Passage Work to Date – Water Street, Jenney Grist Mill Fishway, Billington Dam, Off-Billington Dam, Plymco Dam
- Water quality improvements – Town Brook and Harbor

# Town Brook Corridor



# Background

# Project Site



# Project Goals & Objectives

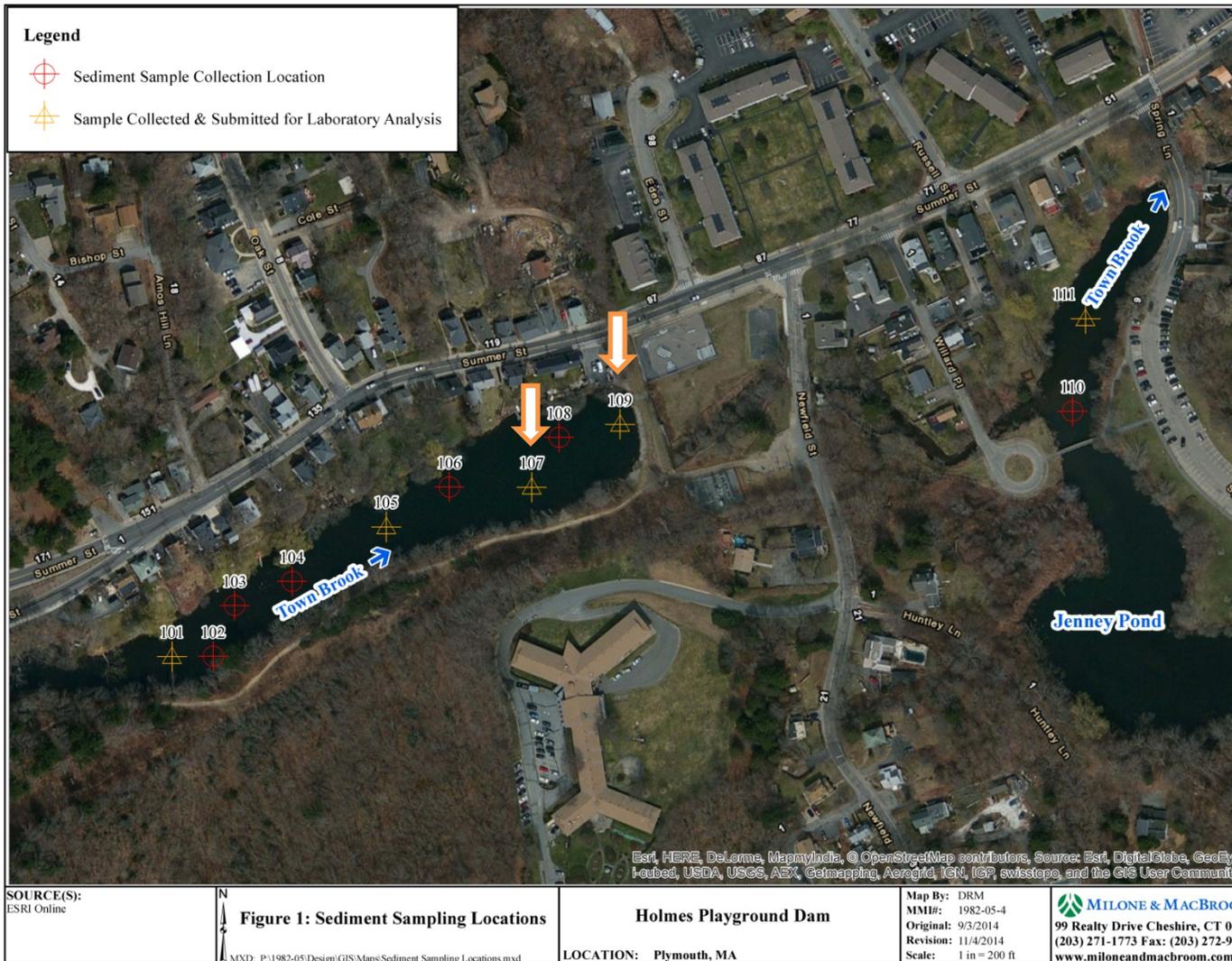
- Increase Public Safety
- Properly Manage Accumulated Sediment
- Remove Potential for Downstream Inundation Due to Dam Failure
- Eliminate Long-Term Maintenance Costs of Dam and Appurtenances
- Restore Riverine Habitat and Fish Passage
- Improve Park Aesthetics



Photo 10 – Close-up of spalling along vertical joint in concrete portion of downstream wall



# Sediment Characterization



- Approximately 11,800 cubic yards of accumulated sediment in the impoundment
- 11 sediment samples collected, 5 analyzed
- Sediment contains relatively low level anthropogenic contaminants
- Sites 107 and 109 have elevated levels of contaminants, similar to upstream impoundments.



# Maintenance and Repair Costs

## Holmes Playground Dam

- Office of Dam Safety requires the Town to hire an engineer to inspect the dam and report conditions every 2 years
- Alternatives for Holmes Dam Removal per 2007 PARE report:
  - \$414,000 to repair existing wall, seal off intake to abandoned ladder and install d/s toe drain
  - \$423,000 buttressing of d/s wall
  - \$539,000 to install cutoff wall on u/s side of existing wall
  - \$965,000 to remove and replace wall

## Newfield Street Bridge

- Newfield St Bridge Inspection Report by Churchill Engineering 2011
  - Bridge is in poor condition and critical safety hazard
  - \$61,000 remedial repairs
  - Recommendation of Complete Replacement

# Stream Restoration

# Stream Restoration Benefits

- Enables Fish Passage
- Incorporates “Natural” Channel Design
- Provides In-stream Habitat
- Provides Riparian Habitat
- Creates Self-Sustaining Sediment Management
- Improves Water Quality
- Eliminates Safety Issue Associated with Dam Failure
- Requires Minimal to No Maintenance
- Improves Aesthetics

# Dam Removal at Billington Street



Before

Natural stream flow restored



After

July 2005



# Dam Removal at Off-Billington Street



Before

Vegetated buffer 

After



# Dam Removal at Plymco



Before

After/  
In Progress



**Aesthetic sound  
improvement** →

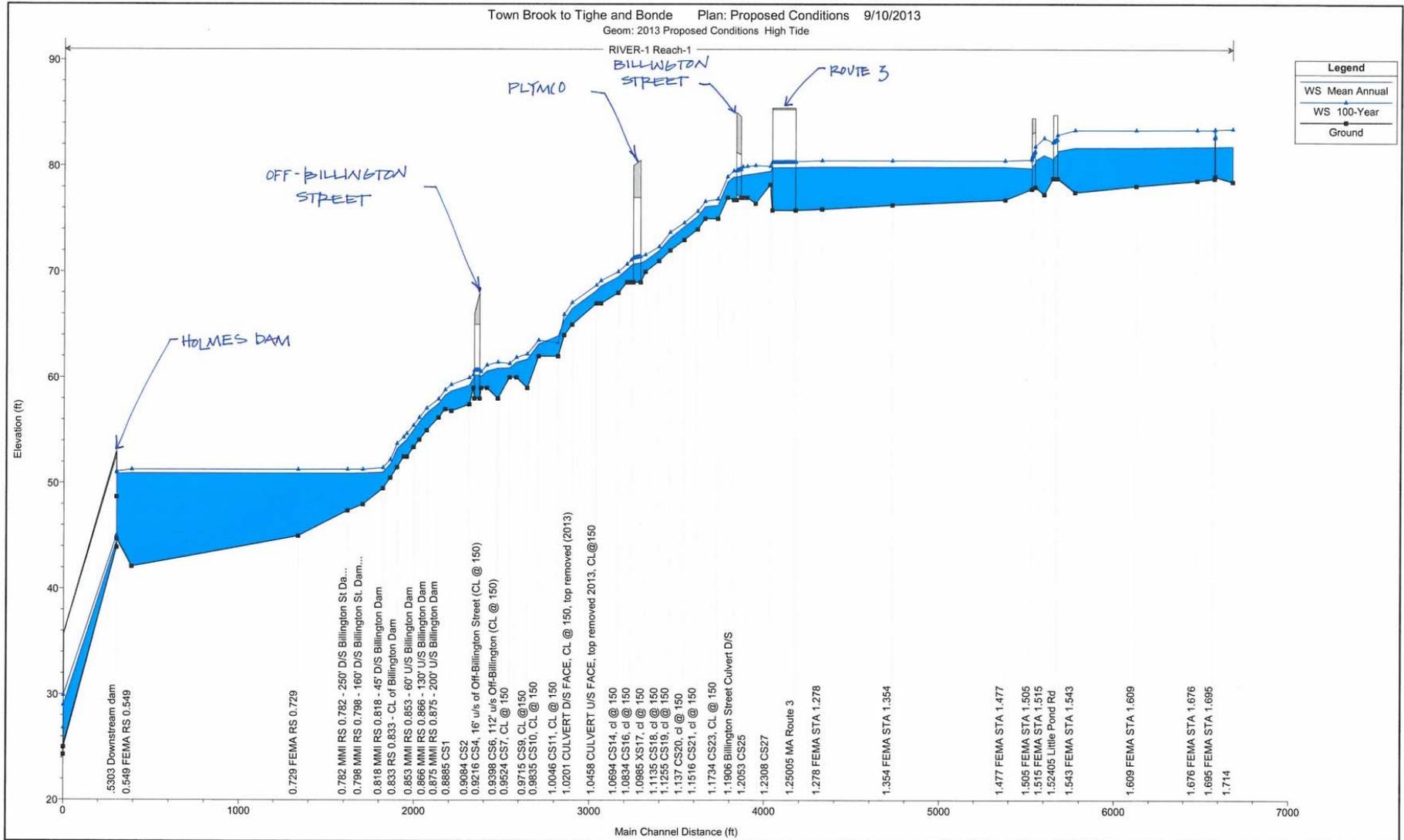
# Work Conducted to Date

# Summary of Key Work Elements Undertaken

- Bathymetric and Aerial Survey
- Wetland Delineation
- Hydraulic Modeling
- Sediment Sampling & Analysis
- Utility Assessment
- Dam Removal Alternatives Assessment
- Preliminary Cost Opinion



# Hydraulic Modeling





# Proposed Project Components

# Stream Restoration

- Breach the dam through its center (approximately 110 feet of dam/spillway)
- Construct a  $\pm 24$ -foot wide channel in the location of the existing culvert
- Tie into the Newfield Street culvert
- Protect utility poles with a masonry wall or relocate
- Planting and instream features to create habitat



# Coordination with Neighbors

- Meetings with neighbors to keep everyone up to date and gather input
- We'd like to hear your concerns and ideas tonight



# Next Steps & Schedule

- Solicit input from neighbors/public (June and late summer/early fall)
- Advance the design (Beginning Summer 2015)
- Apply for and obtain regulatory permits (Fall 2015, 6-12 month process)
- Secure grant funding for construction in conjunction with Newfield Street Bridge
- Construction target late 2017

