

Neponset River

CAC Presentation - Jan.19th, 2011

Draft USGS Report Findings

- Samples of sediment & water were collected at 63 sampling stations along the Neponset River (Paul's Bridge to the Walter Baker Dam) by sediment grab (20 sites) and sediment-core samplers (31 sites), and passive *in situ* chemical-extraction samplers (PISCES) (12 sites). Sediment samples were tested for concentrations of polycyclic aromatic hydrocarbons (PAHs), PCBs, and organochlorine pesticides
- During the one-year study (May 2005 to April 2006), about 5,100 g (3.8 L or 1 gal) of PCBs were transported from the Neponset River to the Neponset River Estuary.

Draft USGS Report Findings

- Concentrations of PCBs in white suckers (filleted and whole) were all greater than 2,000 ng/g, the U.S. Environmental Protection Agency's guideline for safe consumption of fish: PCB concentrations measured in fish-tissue samples collected from the T&H and Baker Impoundments were 3,490 and 2,450ng/g wet wt. (filleted) and 6,890 and 4,080 ng/g wet wt. (whole fish).
- PCBs are mostly trapped behind the dams. In addition to the continuing release of PCBs from historically contaminated bottom sediment, it appears that PCBs as of 2007 are discharging from source areas along Mother Brook as well as other sources along the river and Boston Harbor.

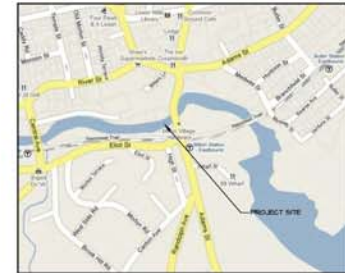
Conceptual Plans-Baker Dam

BAKER DAM PARTIAL REMOVAL & NATURE-LIKE FISH PASSAGE PRELIMINARY DESIGN

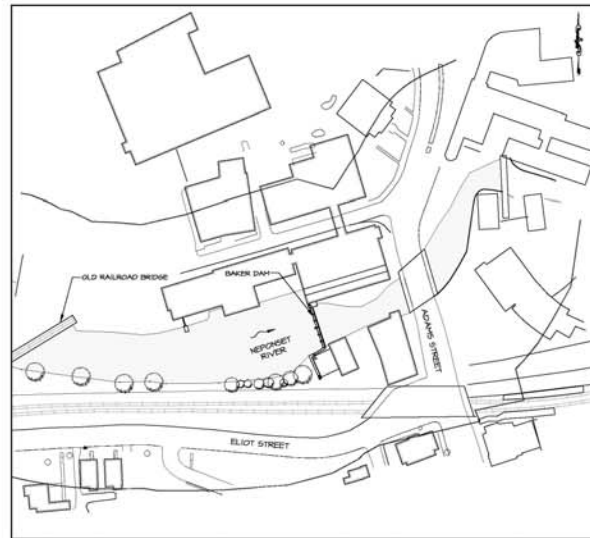
2688-20-1

NEPONSET RIVER
BOSTON AND MILTON, MASSACHUSETTS

JUNE 2010
REVISED: OCTOBER 2010



LOCATION MAP NOT TO SCALE



PROJECT SITE

SCALE: 1"=100'

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Commonwealth of Massachusetts
DIVISION OF
ECOLOGICAL RESTORATION

LIST OF DRAWINGS:

SHEET NO.	SHEET IN SET	DRAWING
	01	TITLE
EX1	02	EXISTING CONDITIONS PLAN AND PROFILE
EX2	03	EXISTING CONDITIONS - DAM DETAILS
PR1	04	PROPOSED FISHWAY PLAN AND PROFILE
SD1	05	SITE DETAILS

CONCEPTUAL PLANS - NOT FOR CONSTRUCTION

SEAL AND SIGNATURE

James G. MacBroom

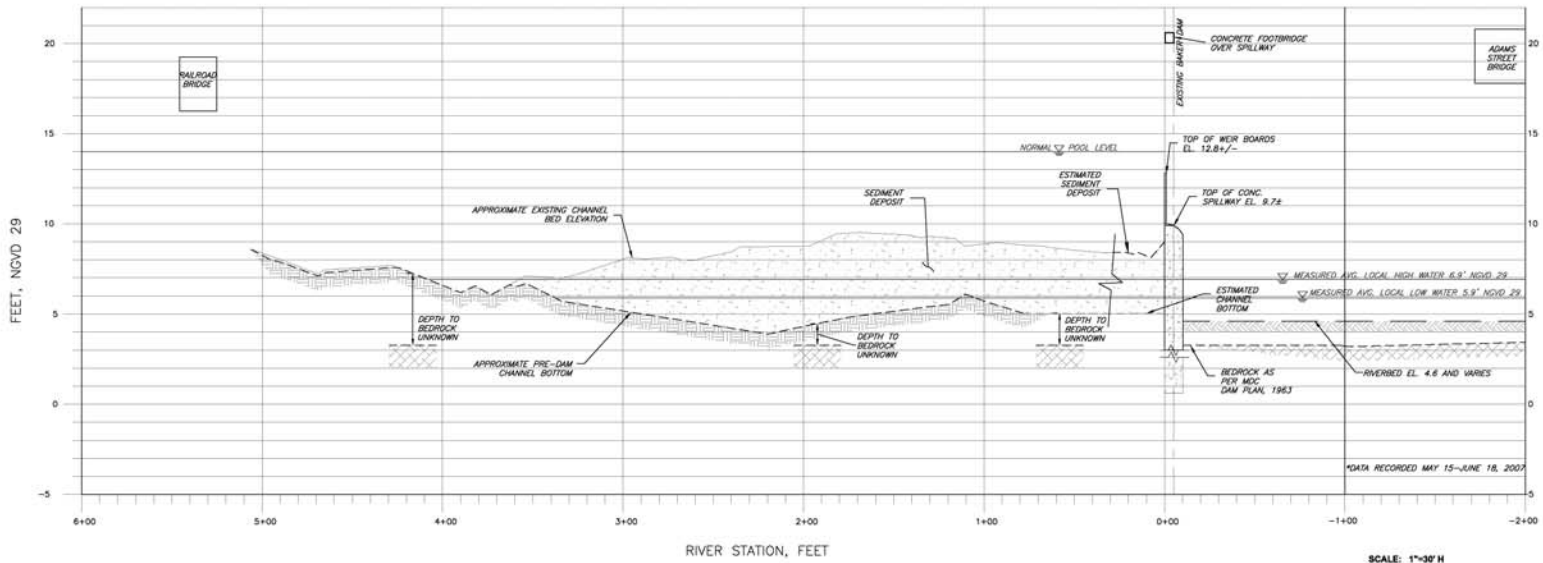
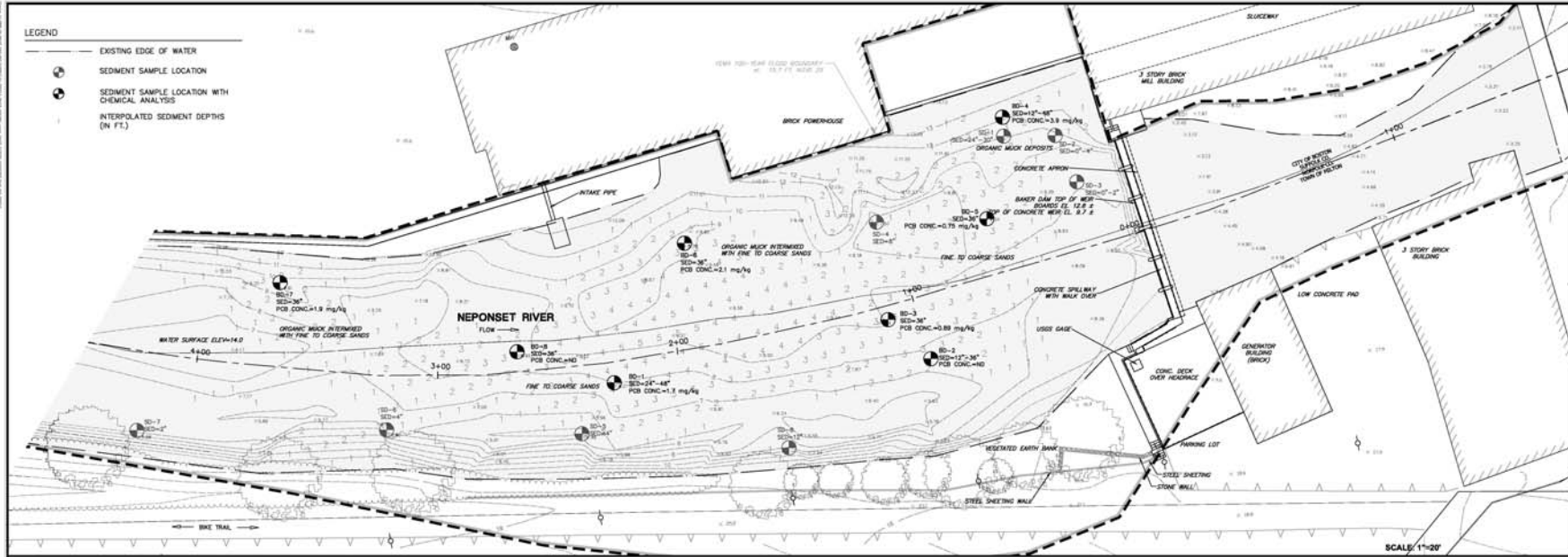


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Existing



N

SCALE 1"=20'

REVISIONS

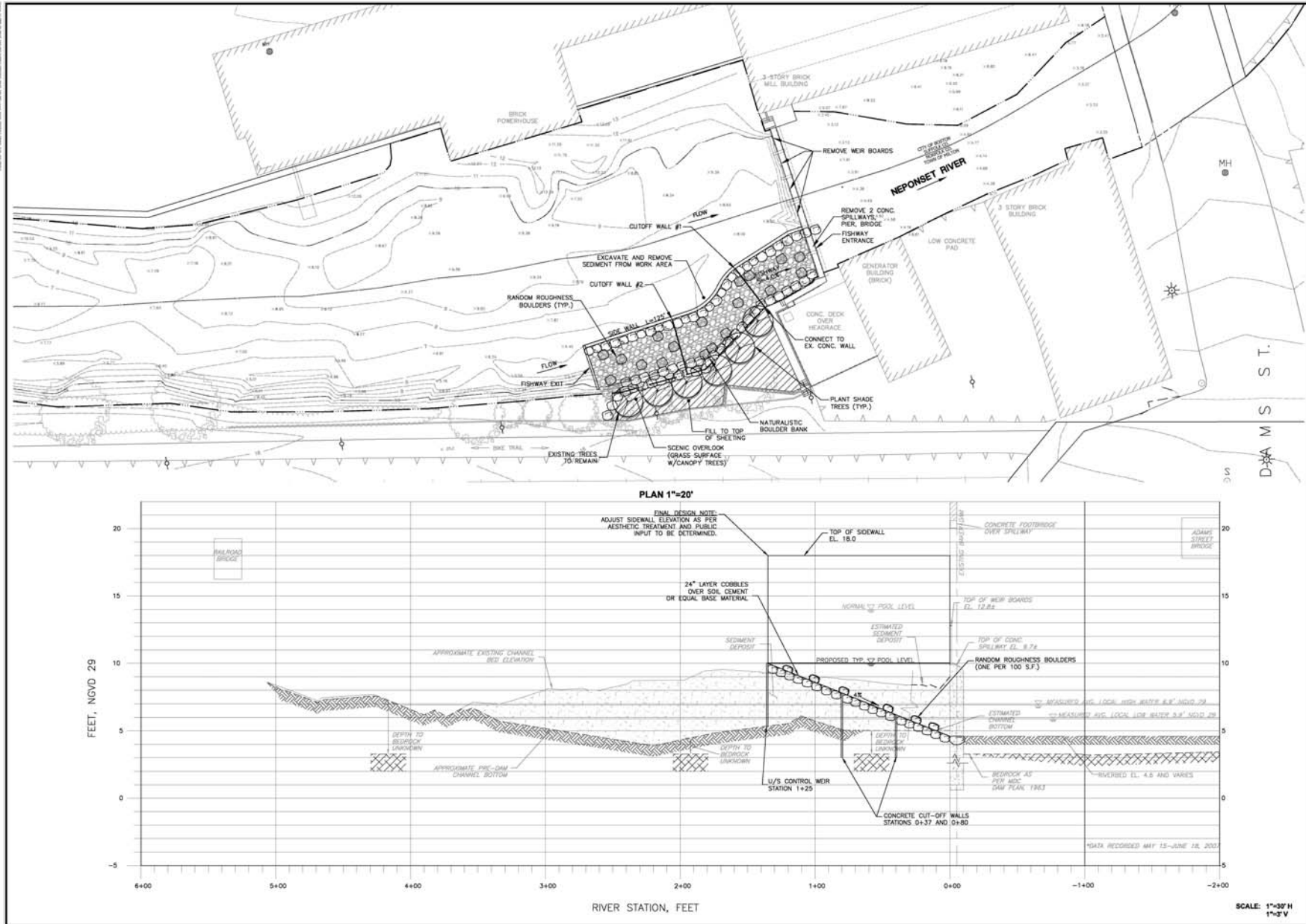
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EXISTING CONDITIONS PLAN AND PROFILE
BAKER DAM PARTIAL REMOVAL & NATURE-LIKE FISH PASSAGE
PRELIMINARY DESIGN
 NEPONSET RIVER
 BOSTON AND MILTON, MASSACHUSETTS

DESIGNED BY	BAM	JGM
DRAWN BY	LEW	JRHS
SCALE	AS NOTED	
DATE	JUNE 2010	
PROJECT NO.	2688-20-1	
SHEET 02 OF 05		

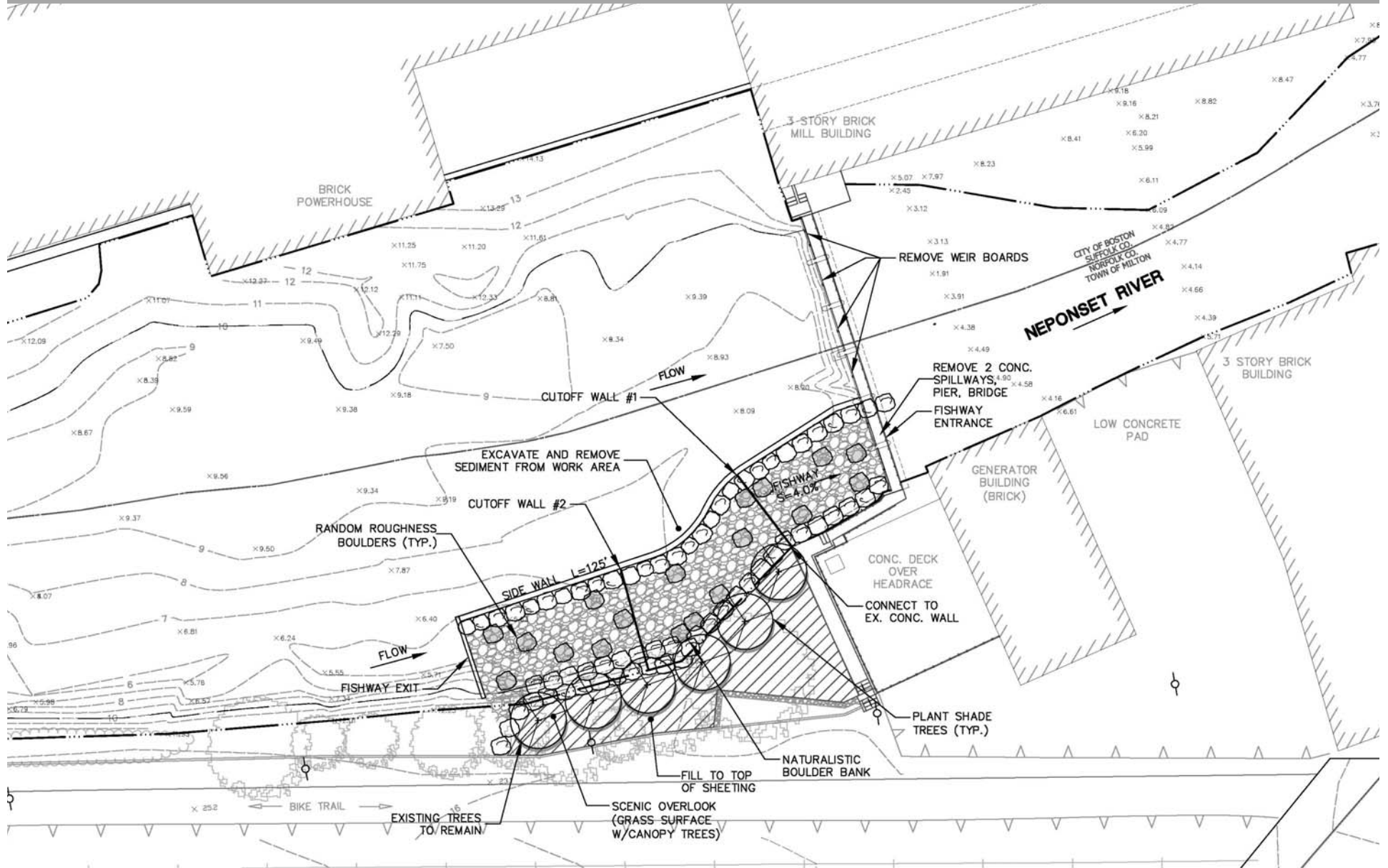
EX1

Proposed

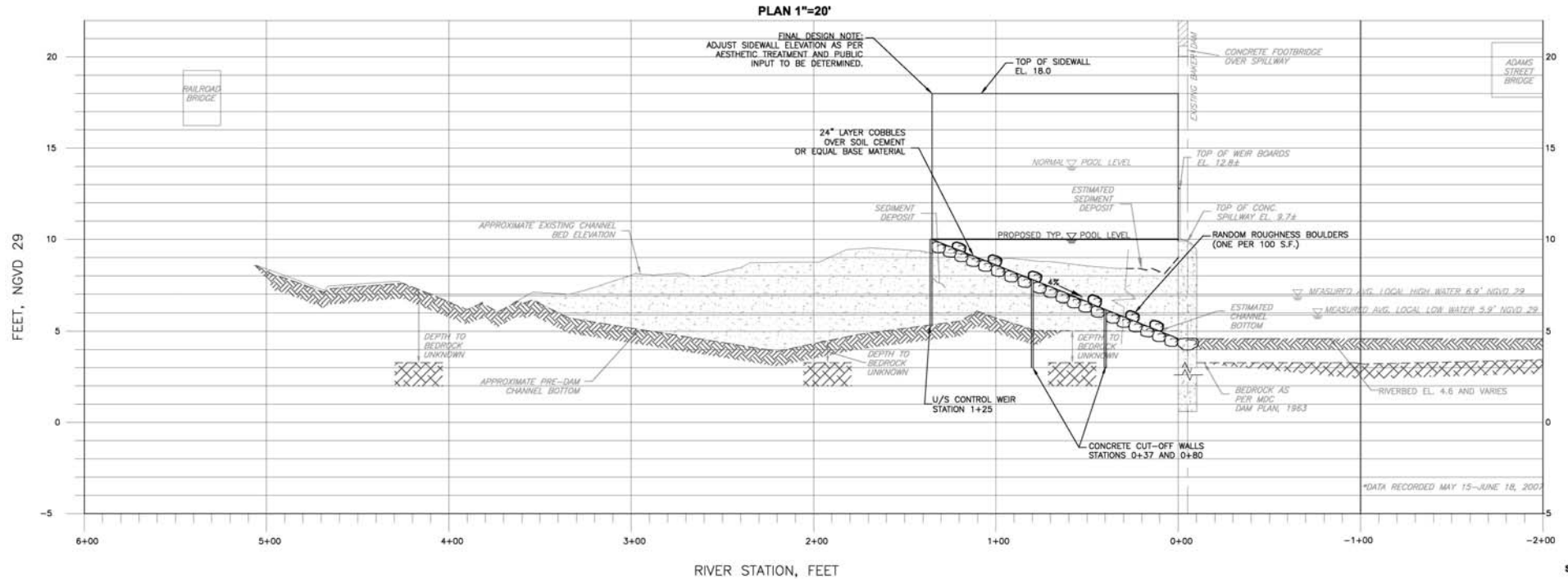


Engineering, Architecture and Environmental Services MILONE & MACBROOM 99 Ruddy Drive Chelsea, Massachusetts 02155 www.miloneandmacbroom.com		
REVISIONS 100010 JUD WALL NOTE		
PROPOSED FISHWAY PLAN AND PROFILE BAKER DAM PARTIAL REMOVAL & NATURE-LIKE FISH PASSAGE PRELIMINARY DESIGN NEPONSET RIVER BOSTON AND MILTON, MASSACHUSETTS		
JGM DESIGN	BAM CHECK	JGM DRAWING
SCALE AS NOTED		
DATE: JUNE 2010		
PROJECT NO. 2688-20-1		
SHEET 04 OF 05		
PR1		

Proposed

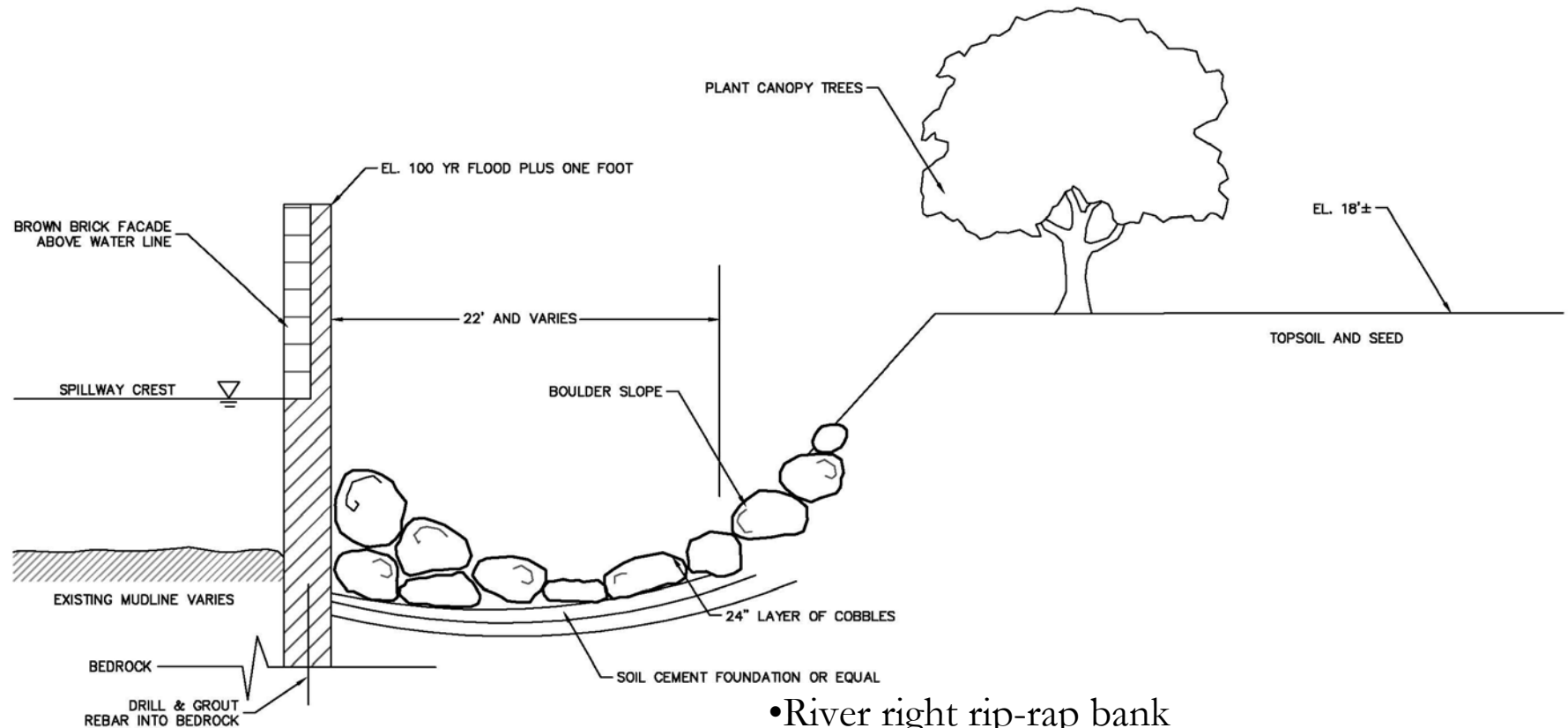


Proposed



- Optimized for spring flows to pass herring and shad (6' / second) estimated 80% passage efficiency
- Fishway width 24.5' (2 bays out of 6)
- Minimum flow depth in fishway approx. 1 foot
- 4% slope, 125' long
- Timber weir boards permanently removed (3')
- Current spillway capacity: 1,690 CFS (45% of 100 year flood event), proposed: 4,420 CFS (118% of 100 year flood event)

Details



FISHWAY CROSS SECTION

N.T.S.

- River right rip-rap bank
- 3 cross concrete support walls
- Fish ladder construction would require removal of 900 cy of material (7,780 cy total)
- Long-term maintenance required

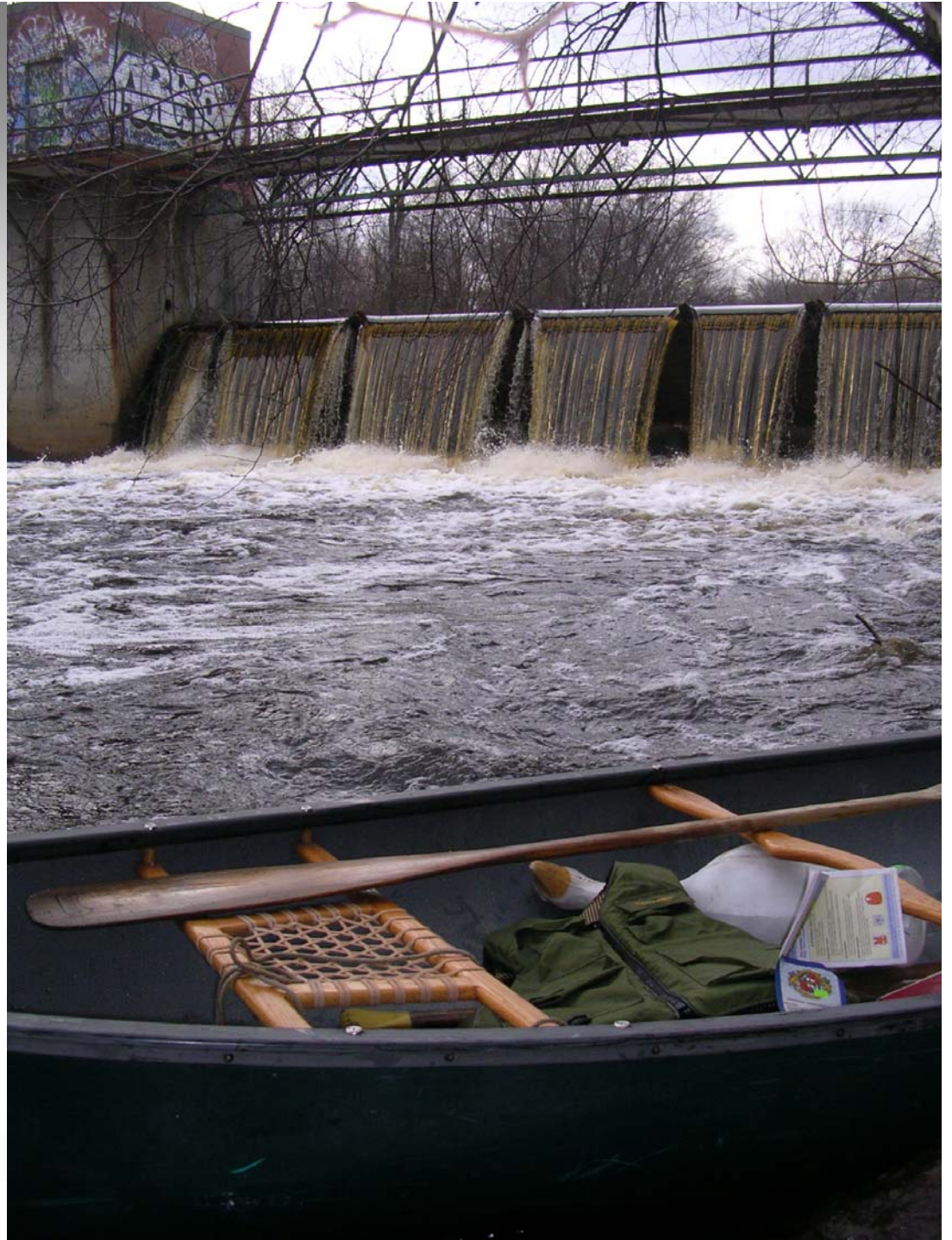
Baker Dam



Cost Estimate

<u>Item</u>	<u>Minimal Dredge</u>	<u>Total Dredge</u>
Fishway	\$640,000	\$640,000
Dredging	\$180,000	\$1,560,000
Engineering	\$66,000	\$176,000
Subtotal	\$886,000	\$2,376,000
25% Contingency	<u>\$222,000</u>	<u>\$594,000</u>
Total	\$1,108,000	\$2,970,000

T&H Dam



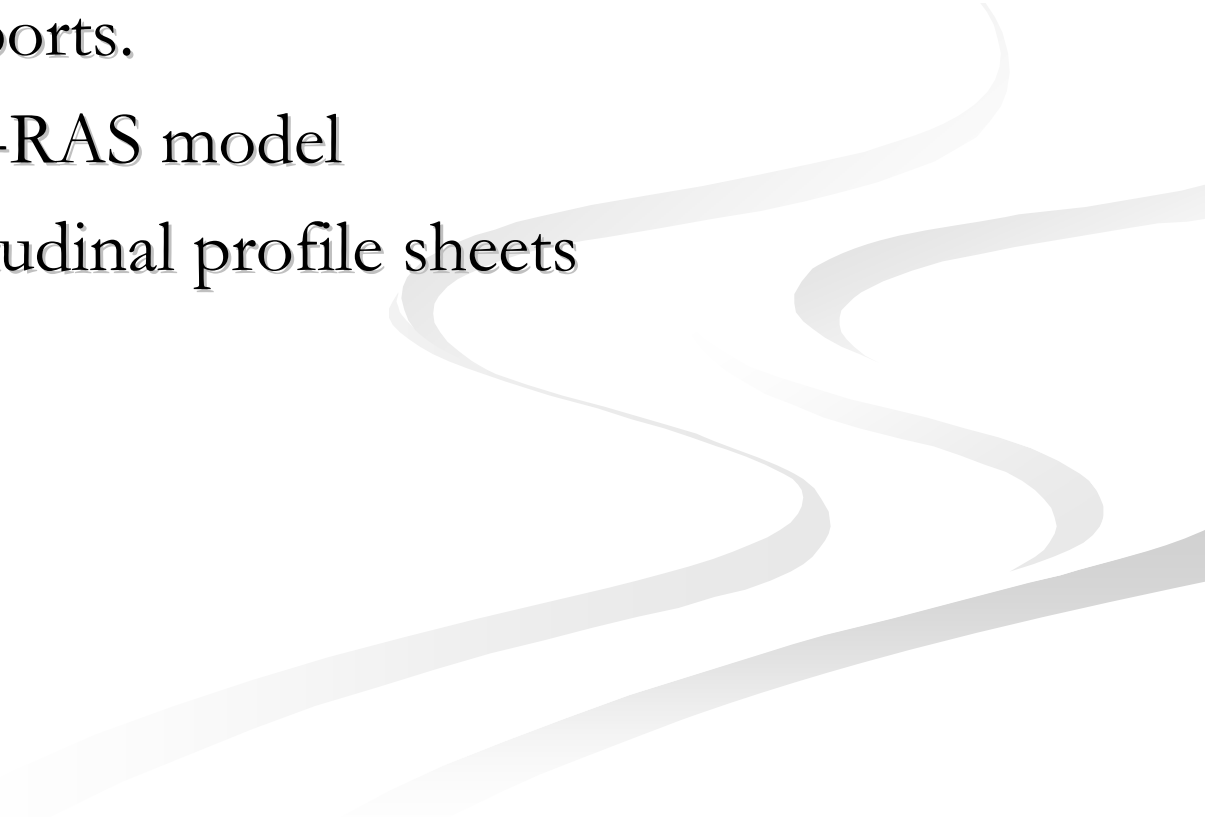
T&H Dam

Hydrologic Engineering Evaluation for the Preferred Alternative: Full Dam Removal

- Update the existing HEC-RAS model using most current streamflow data
- Produce profile sheets for multiple high and low flow scenarios based on revised HEC-RAS findings – updated profile sheets shall emphasize the water level fluctuations expected under a dam removal scenario to help inform the public that static water level conditions will no longer prevail under dam removal.
- Summarize the Charles River – Mother Brook – Neponset River flood operations and control conditions and how these impact the project area based on the most current information from DCR flood control staff
- Describe how removing the T&H dam will impact the flood control system described above and alter impacts in the project area

T&H Dam

Deliverables

- A concise technical memo formatted to serve as an addendum to the June 2006 and 2008 Milone & MacBroom reports.
 - Updated HEC-RAS model
 - Updated longitudinal profile sheets
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- A decorative graphic consisting of several overlapping, wavy, light gray lines that flow from the bottom left towards the top right, positioned in the lower right quadrant of the slide.

Funding

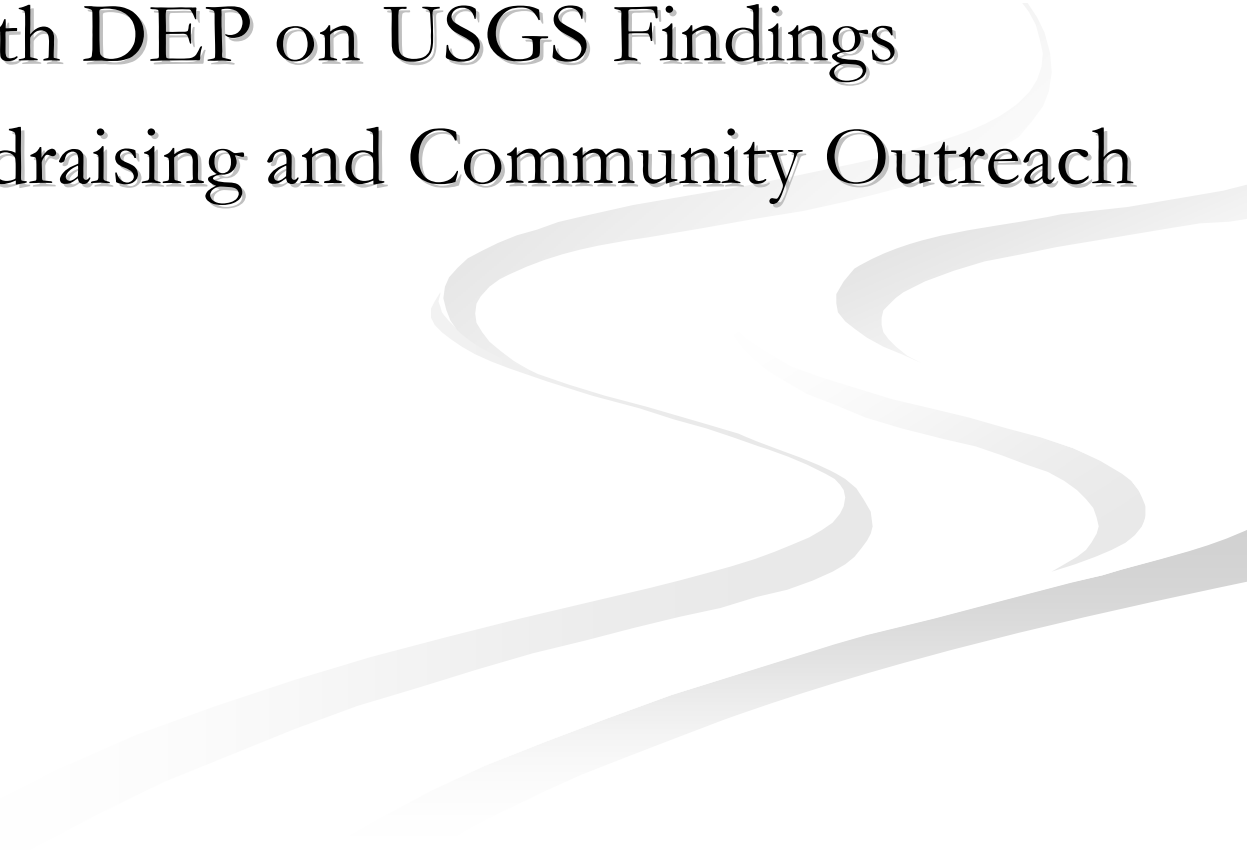
(Most ecological restoration projects involve multiple sources of funding from local, state, federal and private sources)

- *Existing Grants:* Various Community Based Restoration Funds from NOAA and USFWS (these tend to favor full dam removal and will not typically pay for remediation, often these grants have caps of \$50-100K)
- *New Federal Grant:* Gulf of Maine Great Waters Initiative (funds may not be available for a few years)
- *Mitigation:* Essential Fish Habitat Fund, Neponset River Clean-up Funds (if Potential Responsible Party is identified), Natural Resources Damages, Supplement Environmental Project

Funding

- *Section 206*: US Army Corps of Engineers ecological restoration program (the Corps provides the first \$100,000 of study costs. A non-federal sponsor must contribute 50 percent of the cost of the feasibility study after the first \$100,000 of expenditures, 35% of the cost of design and construction, and 100% of the cost of operation and maintenance.)
- *Congressional Appropriation*: Federal appropriation to a federal agency (e.g. USFWS) via Water Resources Development Act (WRDA) or a direct appropriation to eligible entity

Next Steps

- Complete T&H Supplemental Engineering Contract
 - Coordinate with DEP on USGS Findings
 - Continue Fundraising and Community Outreach
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