



Jones River Watershed Association, Inc.

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(781) 585-2322

www.jonesriver.org

February 25, 2010

Secretary Ian A. Bowles
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

**RE: Jones River Restoration
Environmental Notification**

Dear Secretary Bowles:

The Jones River Watershed Association (JRWA) is pleased to submit this Environmental Notification Form for the removal of the Wapping Road Dam in Kingston, Massachusetts. The JRWA is working in conjunction with NOAA, Open Rivers Initiative, Gulf of Maine Council on the Marine Environment, Massachusetts Division of Ecological Restoration, Massachusetts Division of Marine Fisheries, the Town of Kingston, Conservation Law Foundation, Restore America's Estuaries, and the property owner. The JRWA and partners propose to remove the Wapping Road Dam to restore aquatic habitat and anadromous fisheries migration to approximately 3.5 main stem miles and up to eight additional tributary miles on the Jones River. The project will specifically benefit alewife, blueback herring, American shad, American eel, bluegill, sunfish, largemouth bass, tessellated darter, yellow perch, redbfin pickerel, chain pickerel, and brook trout.

The Wapping Road Dam is a small concrete dam (height = 6.6 feet, width = 57 feet). The existing concrete dam is a modern (1924) structure. Structurally, the left and right training walls are both in poor condition while the spillway and sluice are in good condition. In August 2009, there was a failure at the bypass channel upstream of the dam. Emergency actions to address this failure included removal of all sluice boards at the dam. River flow is now primarily through the sluiceway with water only cresting the dam during periods of high flow.

Given that this is a proactive habitat restoration project that will improve public safety and will not result in a loss of flood storage capacity as it pertains to 301 CMR 11.03(3)(a)(4.), an Environmental Impact Report (EIR) waiver is requested. Given the significant engineering and scientific analyses completed to date, it is our belief that preparation of an EIR would not "serve to avoid or minimize damage to the environment" as described under 301 CMR 11.11(1). Furthermore, it is our belief that preparation of an EIR would not provide increased benefit to the project and the environment, as described under 301 CMR 11.11(2). The analyses completed to

date demonstrate that the project meets the EIR waiver thresholds as given in 301 CMR 11.11(3). Specifically, the project does not cause damage to the environment but rather serves to improve the aquatic environment. Also, the project does not require infrastructure and services and, therefore, "ample and unconstrained infrastructure and services" exist to support the project.

This project triggers mandatory EIR thresholds under 301 CMR 11.03(3)(a)(4), namely alteration of an existing dam that decreases impoundment capacity. The existing impoundment does not support active recreation nor does the dam provide flood protection. The decrease in impoundment capacity through removal of the Wapping Road Dam will restore the natural and historical ecological function of the project reach.

If you have any questions, please contact me, project manager for the restoration efforts and the Ecology Program Director of the JRWA at (617) 571-9962.

Sincerely,

A handwritten signature in cursive script, appearing to read "Alex Mansfield".

Alex Mansfield, Director
Jones River Watershed Association

EXPANDED ENVIRONMENTAL NOTIFICATION FORM

**JONES RIVER RESTORATION
WAPPING ROAD DAM REMOVAL**

KINGSTON, MASSACHUSETTS

March 2010



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Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
MEPA Office

ENF Environmental Notification Form

For Office Use Only
Executive Office of Energy & Environmental Affairs

EEA No.:
MEPA Analyst:
Phone: 617-626-

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Wapping Road Dam Removal		
Street: Wapping Road		
Municipality: Kingston, MA	Watershed: Jones River	
Universal Transverse Mercator Coordinates: Easting: 355176 Northing: 4650469	Latitude: 41° 59' 34.53" Longitude: 70° 44' 54.56"	
Estimated commencement date: 8/1/2010	Estimated completion date: 12/15/2010	
Approximate cost: \$300,000	Status of project design: 60%complete	
Proponent: Jones River Watershed Association		
Street: PO Box 73, 55 Landing Road		
Municipality: Kingston	State: MA	Zip Code: 02364
Name of Contact Person From Whom Copies of this ENF May Be Obtained: Alex Mansfield		
Firm/Agency: Jones River Watershed Assoc.	Street: PO Box 73	
Municipality: Kingston	State: MA	Zip Code: 02364
Phone: 617-571-9962	Fax: 781-585-2322	E-mail: alex@jonesriver.org

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?

☒ Yes

☐ No

Has this project been filed with MEPA before?

☐ Yes (EOEA No. _____)

☒ No

Has any project on this site been filed with MEPA before?

☐ Yes (EOEA No. _____)

☒ No

Is this an Expanded ENF (see 301 CMR 11.05(7)) requesting:

a Single EIR? (see 301 CMR 11.06(8))

☐ Yes

☒ No

a Special Review Procedure? (see 301CMR 11.09)

☐ Yes

☒ No

a Waiver of mandatory EIR? (see 301 CMR 11.11)

☒ Yes

☐ No

a Phase I Waiver? (see 301 CMR 11.11)

☐ Yes

☒ No

Identify any financial assistance or land transfer from an agency of the Commonwealth, including the agency name and the amount of funding or land area (in acres):

Massachusetts Division of Ecological Restoration: \$75,000

Massachusetts Division of Marine Fisheries: \$5,000

Are you requesting coordinated review with any other federal, state, regional, or local agency?

☐ Yes (Specify _____) ☒ No

List Local or Federal Permits and Approvals: **No approvals to date. Anticipated permits include USACE Section 404 and Commonwealth of Massachusetts Section 401 Water Quality Certifications, Chapter 253 Dam Safety Permit, Order of Conditions, and local permits**

Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

- | | | |
|---------------------------------|---------------------------------------|--|
| ☐ Land | ☐ Rare Species | ☒ Wetlands, Waterways, & Tidelands |
| ☐ Water | ☐ Wastewater | ☐ Transportation |
| ☐ Energy | ☐ Air | ☐ Solid & Hazardous Waste |
| ☐ ACEC | ☐ Regulations | ☐ Historical & Archaeological Resources |

Summary of Project Size & Environmental Impacts	Existing	Change	Total	State Permits & Approvals	
LAND				☐ Order of Conditions ☐ Superseding Order of Conditions ☐ Chapter 91 License ☐ 401 Water Quality Certification ☐ MHD or MDC Access Permit ☐ Water Management Act Permit ☐ New Source Approval ☐ DEP or MWRA Sewer Connection/Extension Permit ☐ Other Permits <i>(including Legislative Approvals) – Specify:</i>	
Total site acreage	0.616				
New acres of land altered		0.616			
Acres of impervious area	NA	NA	NA		
Square feet of new bordering vegetated wetlands alteration		3,150			
Square feet of new other wetland alteration		NA			
Acres of new non-water dependent use of tidelands or waterways		NA			
STRUCTURES					
Gross square footage	NA	NA	NA		
Number of housing units	NA	NA	NA		
Maximum height (in feet)	NA	NA	NA		
TRANSPORTATION					
Vehicle trips per day	NA	NA	NA		
Parking spaces	NA	NA	NA		
WATER/WASTEWATER					
Gallons/day (GPD) of water use	NA	NA	NA		
GPD water withdrawal	NA	NA	NA		
GPD wastewater generation/treatment	NA	NA	NA		
Length of water/sewer mains (in miles)	NA	NA	NA		

CONSERVATION LAND: Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

☐ Yes (Specify _____) ☒ No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

☐ Yes (Specify _____) ☒ No

RARE SPECIES: Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

☒ **Yes** A detailed discussion is included in the **RARE SPECIES SECTION**

HISTORICAL /ARCHAEOLOGICAL RESOURCES: Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☒ **Yes** (Specify _____) ☐ **No**

Portions of the project site are located within the Triphammer Village historic area (MHC #KIN.C) and the Triphammer Privilege archaeological site (MHC #KIN-HA-39). The project site is adjacent to the former location of the Mayflower Worsted Company (MHC #KIN.208). All are included within the Inventory of Historic and Archaeological Assets of the Commonwealth. Coordination with the MHC is ongoing; correspondence with MHC is included in Appendix C.

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?

☐ **Yes** (Specify: **Unknown at this time**) ☐ **No**

AREAS OF CRITICAL ENVIRONMENTAL CONCERN: Is the project in or adjacent to an Area of Critical Environmental Concern?

☐ **Yes** (Specify _____) ☒ **No**

PROJECT DESCRIPTION: The project description should include **(a)** a description of the project site, **(b)** a description of both on-site and off-site alternatives and the impacts associated with each alternative, and **(c)** potential on-site and off-site mitigation measures for each alternative (*You may attach one additional page, if necessary.*)

The proposed project is a river restoration project that involves the removal of the Wapping Road Dam, channel sculpting between the dam and Wapping Road Bridge, placement of instream features including riffles and root wads, including placement of a riffle upstream of Wapping Road. A Feasibility Analysis was completed for this project in March 2009, and included with this submittal as Appendix D.

The Jones River, located in Kingston, Massachusetts, is a low gradient river typical of many of the coastal systems in southeastern Massachusetts. The Jones River has been altered by the placement of numerous in-stream structures including water intakes, roadway crossings, and dams. Further, the stream's hydrology has been altered through water diversions into and out of the river to support historic mill operations, drinking water supplies, and cranberry production. This has negatively impacted aquatic habitat, including fish migration in the river.

The Wapping Road Dam is the first non-passable dam on the Jones River. It precludes any further upstream migration of diadromous fish. The Jones River Watershed Association (JRWA), working with local, state, and federal project partners have identified the Wapping Road Dam as a location where fish passage and water quality improvements can be made to benefit the overall ecology of the Jones River and its watershed. Providing fish passage at the Wapping Road Dam would open up 3.7 miles of the main stem to the next upstream barrier (Forge Pond Dam, a/k/a Silver Lake Dam). Additional river miles would be opened up in the tributaries above the dam.

Overview of Existing Conditions

The Wapping Road Dam is a small concrete structure on the Jones River located adjacent to a former industrial mill that has been converted into business offices. The dam impounds the Jones River on the south and north side of Route 106 (Wapping Road). It is a modern (post 1900) structure. The Wapping Road/Route 106 Bridge is located 200 feet upstream of the Wapping Road Dam atop twin box culverts. The single lane bidirectional roadway was constructed in 1971. The bridge culverts are set on bedrock.

(continued on additional page -3a-)

PROJECT DESCRIPTION: (additional page)

The Wapping Road Dam forms a 9.5-acre shallow water impoundment. The impoundment extends from the dam structure, approximately 1.2 river miles upstream. The width of the river through this reach under typical non-flood flows ranges from approximately 20 to 100 feet, with split flow in several locations. The impoundment behind the Wapping Road Dam provides warm-water fishery habitat.

Sediment Quality

A comprehensive collection and analysis of sediment samples from the project area has been conducted. The sediment sampling approach was developed in coordination with MA DEP. The total estimated volume of deposited sediment in the main impoundment above the dam is 850 cubic yards. Chemical analysis indicates that the sediments within the impoundment are safe for unrestricted reuse. A sediment management approach has been developed for the project.

Alternatives Analysis

As part of the 2009 Feasibility Study, an alternatives analysis was performed to determine the most feasible and prudent means of achieving the defined project goals and objectives. The ability to provide fish passage, improve habitat and upstream water quality, and to maintain the appropriate sediment transport regime under each alternative was evaluated. Public safety and impacts to riparian landowners were evaluated in the context of the structural integrity of the existing dam and the potential for breaching, flood hazard potential, and anticipated changes to riverfront properties. The Wapping Road Dam is not currently equipped with any fish passage facilities; therefore, it blocks the free passage of anadromous, catadromous, and resident fish species. The table below presents a summary of the ability of each of the alternatives to meet the stated project goals and objectives as well as the feasibility of these alternatives.

Comparison of Alternatives

Project Goal	No Action	Fish Ladder	Roughened Ramp	Bypass Channel	Dam Removal
Is likely to restore river habitat to natural environment	N	N	N	N	Y
Will reduce O&M requirements of the dam	N	N	Y	N	Y
Will promote long-term sustainability of the dam and river	N	N	M	N	Y
Will avoid or mitigate impact to bridge relative to scour	Y	Y	Y	Y	Y
Will create a condition compatible with mill buildings	M	M	M	M	M
Is likely to pass target fish species	N	Y	M	M	Y
Will improve upstream water quality in Jones River	N	N	N	N	Y
Will maintain or enhance habitat for rare species ²	Y	M	M	M	M
Will promote recreational use of the river	N	N	N	N	Y
Is likely to be permitted	N/A	Y	N	M	Y
Is feasible	Y	Y	N	N	Y
Is prudent	N	M ¹	N	N	Y

Y = Yes; N = No; M = Maybe; N/A = Not Applicable

¹If dam removal were not an option, this could be prudent.

²Additional site investigations are needed.

Dam removal most favorably meets the identified project goals and objectives for the Jones River. Removal would restore the river back to a more natural condition, improving upstream water quality, enhancing habitat for rare species, and allowing passage of target species. After removal of the dam, there will be no need for long-term operations and maintenance, creating a sustainable channel condition. For these reasons, dam removal is the recommended alternative.

Dam Removal Considerations

The removal of the Wapping Road Dam would convert the slow moving open water portions of the existing impoundment from a warm-water fishery to a free-flowing warm-water and coldwater fishery habitat. The river bottom substrates upstream of the Wapping Road Dam would change from a combination of organic muck and sands to substrate conditions typical of that which can be observed downstream of the Wapping Road Dam. This consists primarily of gravel and pebbles in the middle of the channel with finer grain material observed along the margins of the channel and overbanks.

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1))
___ Yes **X** No; if yes, specify each threshold:

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Footprint of buildings	___ NA ___	___ NA ___	___ NA ___
Roadways, parking, and other paved areas	___ NA ___	___ NA ___	___ NA ___
Other altered areas (describe)	___ NA ___	___ NA ___	___ NA ___
Undeveloped areas	0.616 ac	0.616 ac	0.616 ac

B. Has any part of the project site been in active agricultural use in the last three years?
___ Yes **X** No; if yes, how many acres of land in agricultural use (with agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use?
___ Yes **X** No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a DEM-approved forest management plan:

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? ___ Yes **X** No; if yes, describe:

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction? ___ Yes **X** No; if yes, does the project involve the release or modification of such restriction? ___ Yes ___ No; if yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ___ Yes **X** No; if yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes ___ **No** **X**; if yes, describe:

H. Describe the project's stormwater impacts and, if applicable, measures that the project will take to comply with the standards found in DEP's Stormwater Management Policy: **The project itself has no stormwater related impacts. However, improved stormwater BMPs may be installed to treat runoff from Wapping Road as a separate project.**

I. Is the project site currently being regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes ___ **No** **X**; if yes, what is the Release Tracking Number (RTN)?

J. If the project is site is within the Chicopee or Nashua watershed, is it within the Quabbin, Ware, or Wachusett subwatershed? ___ Yes **X** No; if yes, is the project site subject to regulation under the Watershed Protection Act? ___ Yes **X** No

K. Describe the project's other impacts on land: **Proposed minor site grading on the west bank will create a public space from which visitors will be able to overlook the river and project area.**

III.. Consistency

A. Identify the current municipal comprehensive land use plan and the open space plan and describe the consistency of the project and its impacts with that plan(s): **The Town of Kingston, MA has both a Master Plan and a comprehensive Open Space Plan. The proposed project has been formally reviewed by the Town and found to be consistent and compliant with those plans. This review was undertaken in conjunction with a positive town meeting vote to expend Community Preservation Act funds in order to eventually own a portion of the project site located on the west bank. This parcel will become an open space town park.**

B. Identify the current Regional Policy Plan of the applicable Regional Planning Agency and describe the consistency of the project and its impacts with that plan: **Consistent with the South Coastal Watershed Plan.**

C. Will the project require any approvals under the local zoning by-law or ordinance (i.e. text or map amendment, special permit, or variance)? Yes ☐ No ☒ ; if yes, describe:

D. Will the project require local site plan or project impact review?

X Yes ☐ No; if yes, describe:

- **Local Building Permit**
- **Kingston Historic Commission Review. Kingston Conservation Commission**

RARE SPECIES SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? ☐ Yes **X** No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **rare species or habitat**? **X** Yes ☐ No

The project will be subject to NHESP review as part of the Notice of Intent filing under the MA Wetlands Protection Act. A review of the Natural Heritage and Endangered Species GIS database revealed the presence of estimated and priority habitats upstream of the Wapping Road Dam. Correspondence with the Natural Heritage and Endangered Species (NHESP) staff confirmed these areas are considered to be habitat for blue-spotted salamander (*Ambystoma laterale*) and eastern box turtle (*Terrapene carolina*). Project partners and NHESP staff walked portions of the project area in February 2009 and identified the presence of potential breeding habitat for the salamander within the area of likely hydraulic impact from the project. MA DER (Riverways at the time) worked with NHESP to develop a scope of work and contract with a qualified firm (Hyla Ecological) to complete a breeding survey for blue-spotted salamander in the floodplain portions within the limits of the area that may experience hydrologic alteration as a result of a dam removal. The full report of this survey is available attached as Appendix E. The results are described briefly here.

A visual inspection of the study area took place on March 2009 during which the general survey area was searched for any vernal pools, isolated depressions or swamps in the floodplains bordering on the Jones River. A total of four separate wetland areas were determined to contain potentially suitable breeding micro-habitat for blue-spotted salamanders. Of the four wetland areas only one pool was considered to be a high-quality potential breeding habitat. Funnel traps were set in areas of potential breeding habitat in order to capture any breeding adult salamanders, and visual searches were conducted for the presence of egg masses in the wetlands where trapping took place. In the study there were no breeding adult blue-spotted salamanders captured in the funnel traps, nor any blue-spotted salamander egg masses observed, which indicates that the species does not breed in any of the surveyed wetlands. In conclusion, the area surveyed for blue-spotted salamanders as part of the Wapping Road Dam Removal Project does not contain a

significant breeding population of bluespotted salamanders; therefore the species is unlikely to be affected adversely by alterations in water levels associated with the proposed dam removal.

Based on discussion with NHESP the major concern for box turtles would be the actual construction activities associated with dam removal rather than habitat impacts. As result a monitoring plan will be in place for during construction.



Priority and Estimated Habitats Within the Project Limits.
(Priority Habitat [PH] 586 and 1344 and Estimated Habitat [EH] 512 and 14 – green hatching)

C. If you answered "No" to both questions A and B, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

II. Impacts and Permits

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? **X Yes** ___ No. If yes,

1. Which rare species are known to occur within the Priority or Estimated Habitat (contact: Environmental Review, Natural Heritage and Endangered Species Program, Route 135, Westborough, MA 01581, allowing 30 days for receipt of information): **see above**
2. Have you surveyed the site for rare species? **X Yes** ___ No; if yes, please include the results of your survey. **Refer to Appendix E**
3. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? ___ Yes **X No**; if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ___ Yes ___ No

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes **X No**; if yes, describe:

C. Will the project alter "significant habitat" as designated by the Massachusetts Division of Fisheries and Wildlife in accordance with M.G.L. c.131A (see also 321 CMR 10.30)? ___ Yes **X No**; if yes, describe:

D. Describe the project's other impacts on rare species including indirect impacts (for example, stormwater runoff into a wetland known to contain rare species or lighting impacts on rare moth habitat): **None**

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? **X Yes** ___ No; if yes, specify, in quantitative terms:

301 CMR 11.03(3)a.4. Alteration of a Jurisdictional Dam

301 CMR 11.03(3)b.1(b). Alteration of 500 feet or more of bank along a fish run

The project will directly alter 555 linear feet of bank through dam removal and channel sculpting. The project will indirectly alter additional linear feet of bank upstream of the project site through changes in water surface elevation.

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? **X Yes** ___ No; if yes, specify which permit:

Wetland Protection Act Order of Conditions

401 Water Quality Certification

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Describe any wetland resource areas currently existing on the project site and indicate them on the site plan: **As shown on Sheet 03 of the attached plan set, the project area includes approximately 15,565 square feet of Land Under Water, 555 linear feet of Inland Bank, 1,345 square feet of Bordering Vegetated Wetlands, 23,218 square feet of Bordering Land Subject to Flooding, and 26,833 square feet of River Front Area.**

B. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

Coastal Wetlands

Land Under the Ocean

Area (in square feet) or Length (in linear feet)

_____ **NA** _____

Designated Port Areas

_____ **NA** _____

Coastal Beaches

_____ **NA** _____

Coastal Dunes

_____ **NA** _____

Barrier Beaches

_____ **NA** _____

Coastal Banks

_____ **NA** _____

Rocky Intertidal Shores

_____ **NA** _____

Salt Marshes

_____ **NA** _____

Land Under Salt Ponds

_____ **NA** _____

Land Containing Shellfish

_____ **NA** _____

Fish Runs

permanent – restoration of fish migration

Land Subject to Coastal Storm Flowage _____ **NA** _____

Inland Wetlands

Bank	permanent – 555 LF (EX); 530 LF (PR)
Bordering Vegetated Wetlands	permanent – 1,345 SF (EX); 4,495 SF (PR)
Land under Water	permanent - 15, 565 SF (EX); 9,795 (PR)
Isolated Land Subject to Flooding	NA
Bordering Land Subject to Flooding	permanent - 23,218 SF
Riverfront Area	permanent – 26,833 SF

C. Is any part of the project

1. a limited project? **X Yes** ____ No
2. the construction or alteration of a dam? **X Yes** ____ No; if yes, describe:
Refer to project description
3. fill or structure in a velocity zone or regulatory floodway? ____ Yes **X No**
4. dredging or disposal of dredged material? **X Yes** ____ No; if yes, describe the volume of dredged material and the proposed disposal site: **Maximum 650 CY suitable for unrestricted reuse. Refer to project description for disposition of material.**
5. a discharge to Outstanding Resource Waters? ____ Yes **X No**
6. subject to a wetlands restriction order? ____ Yes **X No**; if yes, identify the area (in square feet):

D. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? **X Yes** ____ No; if yes, has a Notice of Intent been filed or a local Order of Conditions issued? ____ Yes **X No**; if yes, list the date and DEP file number: _____. Was the Order of Conditions appealed? ____ Yes ____ No. Will the project require a variance from the Wetlands regulations? ____ Yes ____ No.

E. Will the project:

1. be subject to a local wetlands ordinance or bylaw? **X Yes** ____ No
2. alter any federally-protected wetlands not regulated under state or local law?
____ Yes **X No**; if yes, what is the area (in s.f.)?

F. Describe the project's other impacts on wetlands (including new shading of wetland areas or removal of tree canopy from forested wetlands): **As a result of removing the dam, the proposed project would result in a conversion of wetland types upstream of Wapping Road. It is anticipated that there will be a conversion of open water areas to palustrine emergent marsh and scrub shrub wetlands, conversion of palustrine emergent marsh and scrub shrub wetlands to palustrine forested wetland and upland forest, and conversion of palustrine forested wetland to upland forest. Wetland impacts are predicted to extend approximately 1.8 miles upstream of the Wapping Road Dam.**

III. Waterways and Tidelands Impacts and Permits

A. Is any part of the project site waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? **X Yes** ____ No; if yes, is there a current Chapter 91 license or permit affecting the project site? ____ Yes **X No**; if yes, list the date and number:

B. Does the project require a new or modified license under M.G.L.c.91? ____ Yes ____ No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water dependent use? **Unknown at this time. A Request for Determination will be submitted.**
Current ____ Change ____ Total ____

C. Is any part of the project

1. a roadway, bridge, or utility line to or on a barrier beach? ____ Yes **X No**; if yes, describe:
2. dredging or disposal of dredged material? **X Yes** ____ No; if yes, volume of dredged

material **Maximum 650 cubic yards**

3. a solid fill, pile-supported, or bottom-anchored structure in flowed tidelands or other waterways? ☐ Yes ☒ **No**; if yes, what is the base area? _____

4. within a Designated Port Area? ☐ Yes ☒ **No**

D. Describe the project's other impacts on waterways and tidelands: **The project will convert approximately 250 linear feet of the Jones River from a warm water slow moving impoundment to a fast-moving, cool water fishery. The project will improve aquatic habitat connectivity, and restore fish migration to upstream habitat and breeding areas.**

IV. Consistency:

A. Is the project located within the Coastal Zone? ☐ Yes ☒ **No**; if yes, describe the project's consistency with policies of the Office of Coastal Zone Management:

B. Is the project located within an area subject to a Municipal Harbor Plan? ☐ Yes ☒ **No**; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? ☐ Yes ☒ **No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**? ☐ Yes ☒ **No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

II. Impacts and Permits

A. Describe, in gallons/day, the volume and source of water use for existing and proposed activities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Withdrawal from groundwater	_____	_____	_____
Withdrawal from surface water	_____	_____	_____
Interbasin transfer	_____	_____	_____
Municipal or regional water supply	_____	_____	_____

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? ☐ Yes ☐ No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source,

1. have you submitted a permit application? ☐ Yes ☐ No; if yes, attach the application
2. have you conducted a pump test? ☐ Yes ☐ No; if yes, attach the pump test report

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons/day)? _____ Will the project require an increase in that withdrawal? ☐ Yes ☐ No

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility? ☐ Yes ☐ No. If yes, describe existing and proposed water supply facilities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Water supply well(s) (capacity, in gpd)	_____	_____	_____

Drinking water treatment plant (capacity, in gpd) _____
 Water mains (length, in miles) _____

F. If the project involves any interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

G. Does the project involve

1. new water service by a state agency to a municipality or water district? ____ Yes ____ No
2. a Watershed Protection Act variance? ____ Yes ____ No; if yes, how many acres of alteration?
3. a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking water supply for purpose of forest harvesting activities? ____ Yes ____ No

H. Describe the project's other impacts (including indirect impacts) on water resources, quality, facilities and services:

III. **Consistency** -- Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? ____ Yes **X No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? ____ Yes **X No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

II. Impacts and Permits

A. Describe, in gallons/day, the volume and disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00):

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Discharge to groundwater (Title 5)	_____	_____	_____
Discharge to groundwater (non-Title 5)	_____	_____	_____
Discharge to outstanding resource water	_____	_____	_____
Discharge to surface water	_____	_____	_____
Municipal or regional wastewater facility	_____	_____	_____
TOTAL	_____	_____	_____

B. _____ Is there sufficient capacity in the existing collection system to accommodate the project?
 ____ Yes ____ No; if no, describe where capacity will be found:

C. Is there sufficient existing capacity at the proposed wastewater disposal facility? ____ Yes ____ No; if no, describe how capacity will be increased:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? ____ Yes ____ No. If yes, describe as follows:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Wastewater treatment plant (capacity, in gpd)	_____	_____	_____
Sewer mains (length, in miles)	_____	_____	_____
Title 5 systems (capacity, in gpd)	_____	_____	_____

E. If the project involves any interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

F. Does the project involve new sewer service by an Agency of the Commonwealth to a municipality or sewer district? ☐ Yes ☐ No

G. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, or other sewage residual materials? ☐ Yes ☐ No; if yes, what is the capacity (in tons per day):

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Storage	_____	_____	_____
Treatment, processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

H. Describe the project's other impacts (including indirect impacts) on wastewater generation and treatment facilities:

III. Consistency -- Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to wastewater management:

A. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ☐ Yes ☐ No; if yes, indicate the EOE number for the plan and describe the relationship of the project to the plan

TRANSPORTATION -- TRAFFIC GENERATION SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? ☐ Yes ☒ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**? ☐ Yes ☒ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Number of parking spaces	_____	_____	_____
Number of vehicle trips per day	_____	_____	_____
ITE Land Use Code(s):	_____	_____	_____

B. What is the estimated average daily traffic on roadways serving the site?

	<u>Roadway</u>	<u>Existing</u>	<u>Change</u>	<u>Total</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____

3. _____

C. Describe how the project will affect transit, pedestrian and bicycle transportation facilities and services:

III. Consistency -- Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:

ROADWAYS AND OTHER TRANSPORTATION FACILITIES SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? ____ Yes **X No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? ____ Yes **X No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

II. Transportation Facility Impacts

A. Describe existing and proposed transportation facilities at the project site:

	Existing	<u>Change</u>	<u>Total</u>
Length (in linear feet) of new or widened roadway	_____	_____	_____
Width (in feet) of new or widened roadway	_____	_____	_____

Other transportation facilities:

B. Will the project involve any

1. Alteration of bank or terrain (in linear feet)? _____
2. Cutting of living public shade trees (number)? _____
3. Elimination of stone wall (in linear feet)? _____

III. Consistency -- Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))? ____ Yes **X No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**? ____ Yes **X No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section

below.

II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Capacity of electric generating facility (megawatts)	_____	_____	_____
Length of fuel line (in miles)	_____	_____	_____
Length of transmission lines (in miles)	_____	_____	_____
Capacity of transmission lines (in kilovolts)	_____	_____	_____

B. If the project involves construction or expansion of an electric generating facility, what are

1. the facility's current and proposed fuel source(s)?
2. the facility's current and proposed cooling source(s)?

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? ____ Yes ____ No; if yes, please describe:

D. Describe the project's other impacts on energy facilities and services:

III. Consistency -- Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services:

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ____ Yes **X No**; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ____ Yes **X No**; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

II. Impacts and Permits

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? ____ Yes ____ No; if yes, describe existing and proposed emissions (in tons per day) of:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Particulate matter	_____	_____	_____
Carbon monoxide	_____	_____	_____
Sulfur dioxide	_____	_____	_____
Volatile organic compounds	_____	_____	_____
Oxides of nitrogen	_____	_____	_____
Lead	_____	_____	_____
Any hazardous air pollutant	_____	_____	_____
Carbon dioxide	_____	_____	_____

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

III. Consistency

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ☐ Yes ☒ No;; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? ☐ Yes ☒ No;; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

II. Impacts and Permits

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste? ☐ Yes ☐ No; if yes, what is the volume (in tons per day) of the capacity:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Storage	_____	_____	_____
Treatment, processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste? ☐ Yes ☐ No; if yes, what is the volume (in tons or gallons per day) of the capacity:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Storage	_____	_____	_____
Recycling	_____	_____	_____
Treatment	_____	_____	_____
Disposal	_____	_____	_____

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos?

☐ Yes ☐ No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

III. Consistency--Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? **X Yes** ___ No ; if yes, does the project involve the demolition of all or any exterior part of such historic structure? ___ Yes ___ No; if yes, please describe: **The project site is located within the Triphammer Village historic area (MHC #KIN.C), which is included in the Inventory of Historic and Archaeological Assets of the Commonwealth. The project site is adjacent to the Mayflower Worsted Company (MHC #KIN.208), which is included in the Inventory of Historic and Archaeological Assets of the Commonwealth. Project impact to historic structures or structures within a historic district are unknown at this time. The project team has enlisted the services of Cultural Resources Specialists; coordination with MHC is ongoing. Relevant correspondence is included in Appendix C.**

B. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? **X Yes** ___ No; if yes, does the project involve the destruction of all or any part of such archaeological site? ___ Yes ___ No; if yes, please describe: **The project site is located in the Triphammer Privilege archaeology site (MHC #KIN-HA-39), which is included in the Inventory of Historic and Archaeological Assets of the Commonwealth. The extent of the archeological site are currently being determined. Therefore, specific impacts are unknown at this time.**

C. If you answered "No" to all parts of both questions A and B, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

D. Have you consulted with the Massachusetts Historical Commission? **X Yes** ___ No; if yes, attach correspondence **Included in Appendix C**

E. Describe and assess the project's other impacts, direct and indirect, on listed or inventoried historical and archaeological resources: To be determined through continued coordination with MHC.

II. Consistency -- Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources: **The project team has enlisted the services of qualified Cultural Resources specialists to perform a cultural resources assessment of the proposed restoration project. The Cultural Resources consultant will assist the lead federal agency in the Section 106 notification and consultation process. As part of this process, the consultant will provide information regarding the project's Area of Potential Effect (APE), will assist in the determination of the effects of the proposed project, and will identify future efforts that may be required to evaluate impacts of the proposed project on any significant historic and archaeological resources. The consultant will provide recommendations for minimization of potential project impacts, which will be coordinated with MHC.**

ATTACHMENTS:

1. Plan, at an appropriate scale, of existing conditions of the project site and its immediate context, showing all known structures, roadways and parking lots, rail rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities. **Appendix A**
2. Plan of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase). **Appendix A**
3. **Original** U.S.G.S. map or good quality **color** copy (8-½ x 11 inches or larger) indicating the project location and boundaries **Section 2**
4. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2). **Section 3**
5. Other:

Appendix A - Preliminary Design Drawings

Appendix B - Preliminary Design Report

Appendix C - MHC Correspondence

Appendix D - 2009 Feasibility Study

Appendix E - 2009 Blue-spotted Salamander Survey Report

CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

(Name) Kingston Reporter

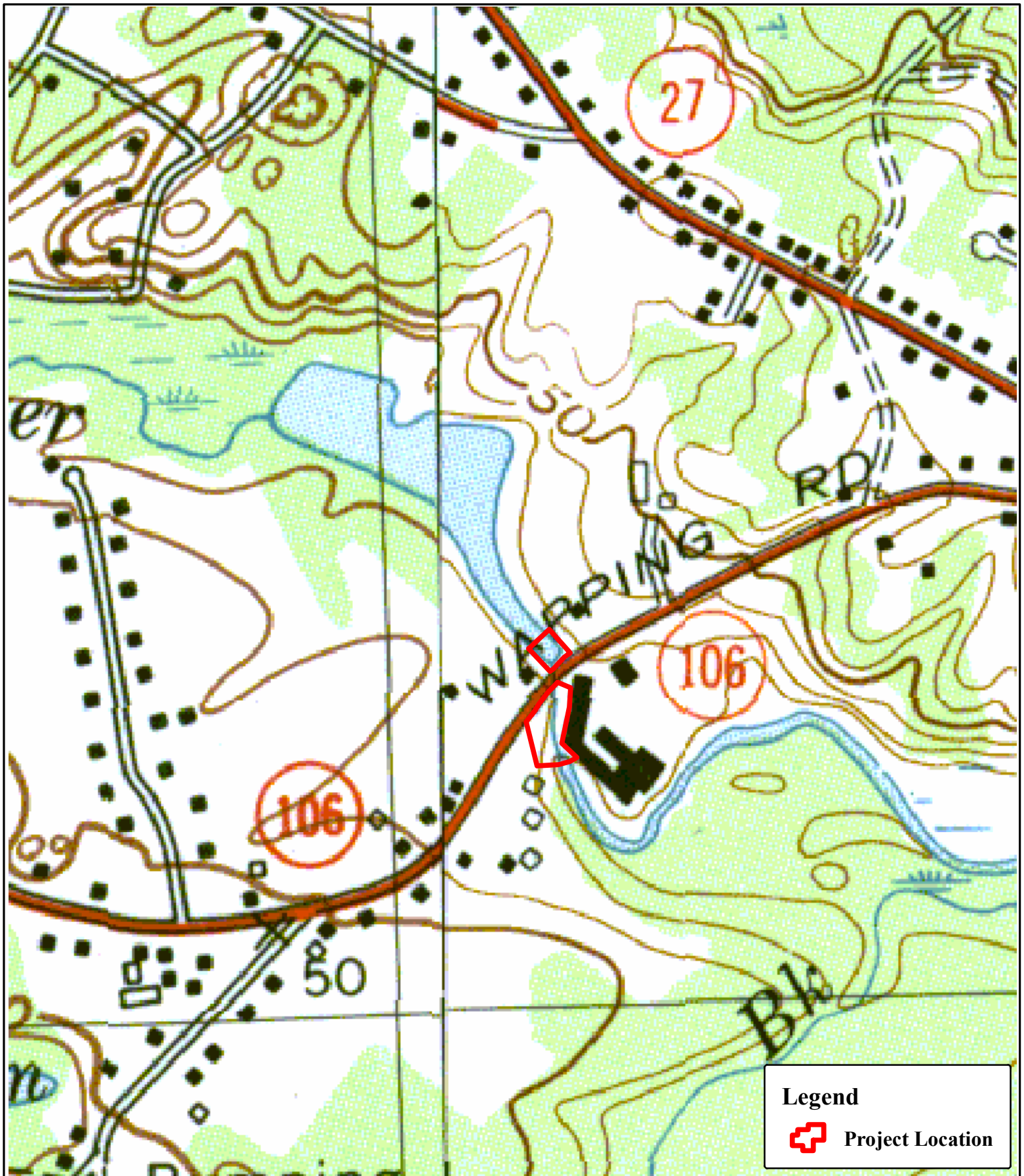
(Date) Friday February 26, 2010

Patriot Ledger

Saturday February 20, 2010

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

<u>2-20-2010</u>	<u>Alex Mansfield</u>	<u>Elsa E. Loehmann</u>	<u>2-24-2010</u>
Date	Signature of Responsible Officer or Proponent	Signature of person preparing ENF (if different from above)	
Alex Mansfield, Director		Elsa E. Loehmann	
Name (print or type)		Name (print or type)	
Jones River Watershed Association		Milone & MacBroom, Inc.	
Firm/Agency		Firm/Agency	
55 Landing Road		99 Realty Drive	
Street		Street	
Kingston, MA 02364		Cheshire, CT 06410	
Municipality/State/Zip		Municipality/State/Zip	
781-585-2322		203-271-1773	
Phone		Phone	



Engineering, Landscape Architecture and Environmental Science MILONE & MACBROOM® 99 Realty Drive Cheshire, Connecticut 06410 (203) 271-1773 Fax: (203) 272-9733 www.miloneandmacbroom.com	Project Location		LOCATION: Kingston, MA	
	MMI#: 2688-14-5 MXD: H:\proj_loc_EMF.mxd SOURCE: MassGIS	N Jones River Restoration ENF	Map By: SMG Date: February 2010 Scale: 1"=400'	SHEET: Figure 1

JONES RIVER RESTORATION
EXPANDED ENF DISTRIBUTION LIST

Secretary Ian A. Bowles
Executive Office of Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Southeastern Regional Planning and
Economic Development District
88 Broadway
Taunton, MA 02780
Town of Plymouth

Department of Environmental Protection
Mr. Jim Sprague
One Winter Street
Boston, MA 02108

Coastal Zone Management
Attention: Project Review Coordinator
251 Causeway Street, Suite 800
Boston, MA 02114

Department of Environmental Protection
Commissioner's Office
One Winter Street
Boston, MA 02108

Division of Marine Fisheries (South Shore)
Attn: Environmental Reviewer
1213 Purchase Street - 3rd Floor
New Bedford, MA 02740-6694

Department of Environmental Protection
Southeastern Regional Office
Attention: MEPA Coordinator
20 Riverside Drive
Lakeville, MA 02347

Natural Heritage and Endangered Species
Program
Commonwealth of Massachusetts
Route 135
Westborough MA 01581

Massachusetts Highway Department
Public/Private Development Unit
10 Park Plaza
Boston, MA 02116-3969

Division of Fisheries and Wildlife
Southeast District
Attention: Steve Hurley
195 Bournedale Road
Buzzards Bay, MA 02532

Massachusetts Highway Department
District #5
Attention: MEPA Coordinator
Box 111
1000 County Street
Taunton, MA 02780

Kingston Board of Selectmen
Jill R. Myers, Town Administrator
Chief Procurement Officer
Kingston Town House
26 Evergreen Street
Kingston, MA 02364

Massachusetts Historical Commission
The MA Archives Building
220 Morrissey Boulevard
Boston, MA 02125

Kingston Conservation Commission
Maureen Thomas, Conservation Agent
Kingston Town House
26 Evergreen Street
Kingston, MA 02364

Kingston Planning Board
Thomas Bott, AICP, Town Planner
Kingston Town House
26 Evergreen Street Kingston, MA 02364

Kingston Master Plan Implementation
Committee
Thomas Bott, AICP, Town Planner
Kingston Town House
26 Evergreen Street
Kingston, MA 02364

Kingston Board of Health Department
Henny M. Walters, Health Agent
Kingston Town House
26 Evergreen Street
Kingston, MA 02364

Appendix A
Preliminary Design Drawings

Appendix B
Preliminary Design Report

PRELIMINARY DESIGN TECHNICAL MEMORANDUM

JONES RIVER RESTORATION

**JONES RIVER
KINGSTON, MASSACHUSETTS**

December 22, 2009

Revised: February 23, 2010

MMI #3574-01-12



Prepared for:

Jones River Watershed Association
55 Landing Road
Kingston, Massachusetts 02364

Prepared by:

MILONE & MACBROOM, INC.
99 Realty Drive
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1.0 **INTRODUCTION**

1.1 **Project Background**

The Jones River Watershed Association (JRWA), working with local, state, and federal project partners, has identified the Wapping Road dam in Kingston, Massachusetts as a location where fish passage and water quality improvements can be made to benefit the overall ecology of the Jones River and its watershed. Milone & MacBroom, Inc. (MMI) is currently under contract to design the removal of the Wapping Road dam. The dam is a low-head, run-of-the-river structure located adjacent to the Caton Connector Corporation building and a short distance downstream from the Wapping Road/Route 106 bridge.

A Feasibility Study was completed in March 2009 in which five alternatives were evaluated:

No Action – Under this alternative, no alterations to the Wapping Road dam would be performed. Additionally, no actions would be performed to restore the river back to a more natural state or to restore free-flowing hydraulic conditions along the river. The Wapping Road dam would continue to block anadromous and other freshwater fish that could otherwise benefit from the river, and riparian connectivity would continue to be disjointed. This alternative did not meet the basic project goals and objectives.

Fish Ladder – The second option was to install a fish ladder around the right side of the dam (looking downstream) or through the existing sluiceway. Under this alternative, the dam would require repairs to justify the fishway life span. Evaluated fish ladder types included a premanufactured Steeppass fishway or a cast-in-place Denil-type fish ladder. Although the fish ladder would allow for migration of anadromous fish, it would not allow for the establishment of the free-flowing cool water habitat and would not

necessarily allow free migration by all fish species. In addition, fish ladders require frequent maintenance during the fish run to remove debris and adjust water levels.

Similar to the No Action alternative, sustainability and potential liability issues would continue as they relate to the physical dam structure; the impoundment will continue to fill with sediment and poor water quality would be expected; riparian landowners would not notice a change in the riverscape adjacent to their properties and flooding potential would not be altered. Additionally, a bypass channel would be subject to design relative to the altered system hydrology and hydraulics associated with upstream water supply withdrawals. It was determined that a fish ladder would not meet many of the project objectives, including restoration of the river to its natural environment, improvement to upstream water quality, and reduction in operation and maintenance requirements.

Roughened Ramp – Roughened ramps are long, gradually sloping constructed riffles that make use of large roughness elements to establish adequate flow velocities that allow for fish passage. This option was not favored due to the spillway height and adjacent topography, which would require over 200 feet of rock ramp and the placement of over 500 cubic yards of material within the channel. At low flows, flow depths over the ramp would be very shallow, inhibiting movement of resident species. As with the other alternatives that maintain the existing impoundment, the existing riverine conditions and adjacent diversion channel would be maintained, flooding potential would be unchanged, sediment would continue to collect behind the dam, and restoration of a connected riparian habitat and improvement of upstream water quality would not be achieved.

Bypass Channel – Bypass channels are used to divert a portion of a river's flow around a dam that is to remain in place. This alternative evaluated a bypass channel on the right bank of the Jones River. Disadvantages of a bypass channel are similar to the fish ladder and no action alternatives, wherein dam maintenance and potential liability would continue, upstream water quality and riparian continuity would not be restored, and the existing sediment transport regime would continue. Additionally, a bypass channel

would be subject to the same design constraints as described for the fishway option relative to the altered system hydrology and hydraulics associated with the upstream withdrawals. Finally, installation of a bypass channel would include considerable disturbance of upland areas adjacent to the river and, therefore, may pose additional concerns for historical and cultural resources at the site.

Dam Removal – Under this alternative, the concrete structures that comprise the Wapping Road dam would be broken up and physically removed from the channel using heavy machinery. The exposed areas in the upstream impoundment would need to be stabilized, and channel conditions would potentially require modification to achieve fish passage. The inlet to the existing diversion channel would be permanently sealed. Dam removal most favorably meets the identified project goals and objectives for the Jones River. Removal will restore the river back to a more natural condition, improving upstream water quality, enhancing habitat for rare species, and allowing passage of target species. After removal of the dam, there will be no need for formal operation and maintenance, creating a sustainable channel condition. For these reasons, dam removal was the recommended alternative and is the focus of the current design effort.

1.2 Work Scope

Preparation of preliminary (60%) design plans for the dam removal and channel improvements have been compiled, following the recommended preferred alternative presented in the March 2009 Feasibility Study which include the following elements:

- Removal of the Wapping Road dam spillway between the two existing abutments.
- Maintenance of a portion of the abutment on the left bank to support the existing retaining wall
- Full removal of the existing sluiceway at the right abutment
- Construction access road on river right, with the intent of avoiding excavation to the greatest extent possible to avoid underground archeological resource impacts

- Abandonment of the bypass channel through the existing building and parking lot adjacent to the dam
- Retention of the existing buildings adjacent to the dam and channel
- Filling in of the existing scour hole downstream of the dam
- Fortification of the retaining wall next to the Caton Connector building
- Minimizing work conducted upstream of the Route 106 bridge

In addition to the subject design memorandum, a sediment management plan for the material behind the dam, an invasive species management plan, and a summary of supplemental field investigations have been prepared and accompany the 60% design submission.

2.0 EXISTING CONDITIONS

The existing conditions at the Wapping Road dam have been described in detail in the 2008 Feasibility Analysis. Of important note is the impoundment drawdown, which occurred as a result of the failure of the diversion channel under the Caton Connector building. Primary changes to existing conditions occurred immediately upstream of the sluiceway, where a small amount of sediment was scoured from the west retaining wall. The drawdown provided an opportunity to observe channel and impoundment features that were previously inaccessible, including the stormwater outfalls downstream of Wapping Road, the retaining walls adjacent to the Caton Connector building. A detailed description of field investigations following drawdown is presented in a memo entitled *Wapping Road Dam Drawdown Field Observations*, submitted concurrently with this report. A brief summary of existing conditions is presented herein.

2.1 Project Setting

The Jones River watershed covers 30 square miles at its mouth. The watershed area at the Wapping Road dam is approximately 17.5 square miles. The Wapping Road dam is a

small concrete structure on the Jones River located adjacent to a former industrial mill known locally as the Caton Connector Corporation. The building complex has been converted into business offices. The dam impounds the Jones River on the south and north side of Route 106 (Wapping Road). It is a modern (post 1900) structure.

The Wapping Road/Route 106 bridge is located 200 feet upstream of the Wapping Road dam atop twin box culverts. The single-lane bidirectional roadway was constructed in 1971 and appears to be in good condition.

The Wapping Road dam forms a 9.5-acre shallow water impoundment extending from the dam structure, approximately 1.2 river miles upstream, adjacent to a power line crossing near Foxworth Lane. The historic width of the river through this reach under typical non-flood flows ranged from approximately 20 to 100 feet, with split flow in several locations.

Land uses immediately surrounding the Wapping Road dam include the Caton Connector building complex and parking lot, the Route 106/Wapping Road bridge and roadway, numerous residential dwellings (some of which are considered to be historic), and a cranberry bog and farm. Several residential neighborhoods back up to the river, including Clifton Drive, Brookings Road, and Nelson Street.

The Caton Connector building is located on the east side of the Jones River immediately adjacent to the dam. The dam can be accessed from either the Caton Connector building property (owned by the Jones River Realty Trust, JRRT) on the east side of the impoundment or by walking along a short trail that extends from the sidewalk along Wapping Road on the west side of the impoundment on property also owned by JRRT.

Approximately 110 feet upstream of the Wapping Road dam, along the left bank, is a headrace that forms the upstream end of a diversion channel. The headrace leading to the Caton Connector building is a concrete vertical drop structure located along the left bank of the upstream pool and beneath the adjacent mill building. Flow to the channel is

regulated by weirboards at the opening. The diversion channel is approximately 15 feet wide through its length. It flows beneath the building for approximately 105 feet and then daylights into a concrete lined channel, approximately 70 feet in length and flanked by concrete retaining walls and a parking lot. The concrete channel then discharges under an existing access road via a concrete box culvert. The channel flows along a length of approximately 225 feet from the culvert to its confluence with the Jones River main stem. The downstream confluence of the diversion channel with the Jones River is located approximately 870 river feet downstream of the Wapping Road dam.

2.2 Wapping Road Dam

The spillway at the Wapping Road dam is a concrete structure measuring 38 feet long and seven to nine feet high above the streambed. It has a vertical downstream face and a projecting concrete cap that directs the overflowing water out past the face. The spillway's face is considered to be in fair condition, while the overall structure is considered to be in good condition without horizontal or vertical deformation and without visible cracks. The spillway thickness is approximately three feet at the cap. Extensive wear on the spillway face has occurred, resulting in the loss of material and full exposure of the concrete mix coarse aggregate.

Between the spillway and right training wall is a four-foot wide mid-level sluiceway slot that could be used to drain the pool of approximately three quarters of its depth. The sluiceway can be fitted with timber boards; currently, the boards have been removed to relieve pressure on the diversion channel under the Caton Connector Building. The sluiceway discharge and right end of the spillway are located on bedrock.

The spillway has vertical concrete training walls at both ends parallel to the channel axis. The left downstream wall is about six feet high by 30 feet long and is within about four feet of the adjacent mill building. This wall has significant concrete loss along its footing, creating a void. The top of this wall has extensive concrete spalling, and it has

lost some of its cap. The short right downstream wall has been undermined by scour and has a deep cavity. It is disconnected from its foundation. Previous scour repairs have been made along the rear side of the right wall using rocks and pieces of old concrete. Both walls are in poor condition and in need of repair.

Submerged earth fill with some gravel and cobbles extends across the back side of the spillway such that the approaching water depth is only about one foot deep. This backfill is quite firm. Between the dam and the bridge, the lowest channel bed elevations are 20 feet above sea level. A somewhat undulating bottom in the center of the impoundment upstream of the dam can be observed whereby the water depths within the channel increase and decrease heading in the upstream direction from the Wapping Road dam.

2.3 Jones River

The Jones River is located primarily in the town of Kingston, Plymouth County, Massachusetts. Parts of the northern and western extents of the watershed are located in Duxbury, Pembroke, Plympton, and Plymouth. The river flows in a generally east direction from Silver Lake toward Kingston Bay. The river drops from an elevation of approximately 47 feet NGVD down to sea level over its 7.5-mile long course. The Jones River watershed covers 30 square miles at its mouth. The watershed area at the Wapping Road Dam is approximately 17.5 square miles.

The Jones River immediately downstream of the Wapping Road dam has visible bedrock outcrops. Under normal flows, this area is a shallow cobble riffle that quickly transitions to a low gradient river channel with low wooded banks and no visible barriers. This portion of the channel has excellent riparian and canopy cover, woody debris, and habitat value.

Upstream of Wapping Road, the Jones River passes through areas of wooded, rural, and suburbanized land use. Under low flows, the stream is characterized by a repeating pattern of relatively uniform shallow runs and riffles, often bordered by wetlands. The

stream channel substrate is predominantly comprised of fines, sand, and gravels. The stream gradient is quite flat, with an average slope of only 0.12%.

During postdrawdown field investigations, an instream structure was located approximately 120 feet upstream of the Wapping Road bridge. The location and extent of the structure was surveyed and is graphically depicted on the appended plan set. Based on field investigations, the structure appears to be comprised of sheets of bedrock over an existing ledge outcrop. The crossing does not form a continuous structure across the channel; rather, it is located in the center third of the existing channel. The bedrock may have possibly been relocated during installation of the Wapping Road Bridge. The existing ledge outcrop extends both upstream and downstream of the crossing location. However, the ledge sits lower in the channel profile than the placed sections of bedrock. In fact, the channel was observed to be cutting through the soft silt along the eastern edge of the crossing, creating a new flow path.

2.4 Sediment Depth and Location

A detailed description of sediment depth and location is given in the *Jones River Restoration Project Sediment Management Approach*.

3.0 DESCRIPTION OF PROPOSED DESIGN

3.1 Restoration Activities

Channel Restoration – The appended plan set graphically depicts the proposed dam removal, in both plan and profile view. Under this plan, the Wapping Road Dam spillway will be removed between its two abutments. Approximately five linear feet of the dam and abutment will remain on the left bank to support the existing bank and retaining wall along the Caton Connector building. The existing sluiceway at the right

abutment will be fully removed. The existing scour hole downstream of the dam will be filled with coarse substrate to create a smooth channel profile through the project reach.

The backwater effect from the downstream Elm Street dam extends nearly up to the Wapping Road dam. This backwater has led to an increase in channel width. The proposed channel upstream of the dam will not only be steeper than the downstream channel, but it will also be narrower in order to focus the flow and create increased water depths for fish passage during low flow conditions. After removal of the dam, the proposed natural channel will be approximately 30 to 45 feet wide at bankfull discharge and approximately 10 to 20 feet wide (top width) under August flows. The channel slope will be approximately one-half percent through the project reach, a slope that typically supports a riffle-pool type channel form.

Instream and channel features provide habitat variety, which in turn improve biological diversity. Instream and channel features included in the Jones River design include two riffles and root wad revetments. One riffle is proposed upstream between the Wapping Road bridge and dam; the second is proposed just downstream of the existing dam location. In addition to providing important habitat functions, riffles also provide important channel grade control and decrease upstream scour. The upstream riffle between the bridge and the dam will increase pooling downstream of the bridge, lessening the scour effect at the culverts and along the left bank adjacent to the Caton Connector building. Root wads are proposed at strategic locations through the project reach, again to provide important flow and habitat diversity, while increasing flow deflection away from the Caton Connector building.

The slope along the retaining wall next to the Caton Connector building will be fortified with coarse substrate. This could be rounded river cobble or a core of riprap and gravel that is covered with topsoil and planted. The alignment of the culverts at the Wapping Road Bridge is such that the full force of the flow is directed toward this slope. To maintain the long-term structural integrity of this wall, the more hardened slope

protection of this type is believed to be necessary. The slope will be planted with native species, providing shading and habitat value, while improving the aesthetic of this left bank.

Stormwater Outfalls – Two stormwater outfalls have been observed that collect stormwater runoff from Wapping Road, which discharge directly downstream of the Wapping Road bridge. The 18-inch outfalls are located on either side of Jones River. A third outfall has been located based on Town utility mapping on the east bank downstream of the Wapping Road Bridge. Town mapping indicates that this outfall is from a 15-inch reinforced concrete pipe. This outfall could not be field located, and is assumed to be buried under deposited sand. Significant volumes of sand and sediment have accumulated at the outlets of these stormwater pipes, creating small vegetated islands and, in the case of the observed eastern outfall, a defined drainage channel from the pipe's outlet to the river. Stream channel modifications in this region include the removal of this sediment accumulation and the construction of plunge pools immediately downstream of the outfalls.

Planting Plan – A planting plan has been developed for the dam removal area for the purpose of providing both bank stability and channel cover. Two primary zones have been delineated on the planting plan: the upper banks being a riparian zone and the area along the edge of water being the shoreland fringe. The average width of the riparian zone is 15 feet, extending a total length of approximately 180 feet on either side of the river. The average width of the shoreland fringe is 10 feet, extending a total length of approximately 160 feet on either side of the river. Refer to the plans for a complete layout of proposed species.

Primary tree species within the riparian planting zone include red maple and silver maple. Woody shrub species include red chokeberry, black chokeberry, sweet pepperbush, silky dogwood, meadowsweet, northern arrowwood, and shadbowl. Trees will be placed 20 feet

on center and shrubs will be placed eight feet on center. The proposed riparian zone seed mix is New England Conservation/Wildlife Mix provided by NEWP Inc.

Woody shrub species proposed within the shoreland fringe include silky dogwood, elderberry, speckled alder, pussy willow, streamco willow, and common winterberry. Herbaceous species include fringed sedge, lurid sedge, soft stem bulrush, hard stem bulrush, and burreed. Shrubs will be placed eight feet on center and herbaceous plugs placed two feet on center. The proposed shoreland fringe seed mix is New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites provided by NEWP Inc.

Upstream Crossing Structure – The reach upstream of Wapping Road has a very shallow slope and is currently comprised of palustrine emergent marsh and forested wetland areas. Numerous sand bars exist through the reach between Wapping Road Bridge and an upstream cranberry bog. Sand bars are indicative of dynamic sediment systems, with plentiful supply and active redistribution processes. A riffle was proposed upstream of the Wapping Road bridge during concept design to provide upstream grade control. The proposed riffle would allow continued sediment adjustment, while preventing large-scale changes in the upstream channel gradient.

The upstream structure identified during field investigations in the fall of 2009 is at the location of the previously proposed riffle. Although the existing structure can provide the same functionality as the proposed riffle, modification will be necessary to meet the intended restoration goals. As the underlying ledge within the channel is at a lower elevation, the channel is side-cutting through the soft silt around the structure. To prevent a channel avulsion of this type and to maintain flow over the structure, it will be necessary to fortify the channel in the surrounding location. Although it is desirable to accomplish this through bioengineering techniques, the channel banks immediately adjacent to the structure do not support this type of treatment. The adjacent banks are too shallow to allow for the use of tree or root-wad revetments to anchor and isolate the

structure. Additionally, flow would carve through the soft silt under structures of this type and would still find a way to circumvent the structure.

To provide adequate protection at this location, it will be necessary to place stone adjacent to the structure, anchored in to the existing banks. This stone could be placed using a small backhoe. Construction access through one of the adjacent residences would be preferable and could be accomplished using construction access mats or simple plywood, such that impact to the residence would be minimal. Placement of stone of this type would not require more than two to three days, keeping the upstream disturbance to a minimum. The proposed riffle is graphically depicted on the appended design plans; however, the method of access has yet to be determined, and is subject to the concurrence of project partners as well as the land owner.

Diversion Channel – To protect the structural integrity of the Caton Connector building, the diversion channel running under the building will be sealed and the ends will be plugged. The external bar racks and weirboard supports at the upstream intake will be removed. The channel will be plugged at the upstream and downstream ends with cast-in-place concrete that will be doveled into the existing concrete structures.

3.2 Sediment Management

Most of the necessary sediment management will occur between the existing dam and Wapping Road (Route 106). Sediment management strategies pertain to two classes of sediment at the site. The first is material that is excavated through the impounded sediments to form the channel. The second is impounded sediments that will be exposed on the overbank areas.

Deposited sediments within the Wapping Road impoundment are generally fine grained and silty in nature. A portion of these sediments are proposed for on-site reuse as a topsoil treatment. These fine-grained sediments may either be used in their natural form

or mixed with topsoil. Deposited sediments that are not exclusively fine-grained in nature are present immediately behind the Wapping Road dam. Suitable material that is excavated from behind the dam will be stockpiled and re-used on site as fill on the left side of the impoundment, adjacent to the Caton Connector building.

Exposed bank sediments will dewater in place, and are expected to revegetate within the first growing season. Exposed sediments will be stabilized with erosion control blanket, seeded and planted.

A detailed summary of sediment management is given in a separate report, entitled *Wapping Road Dam Removal Sediment Management Approach*.

3.3 Invasive Species Management

Developing and implementing an invasive species management program is a critical component for the success of dam removal. Invasive species can become a significant problem along riverbanks and tend to suffocate existing native plants; provide diminished wildlife habitat value; impede recreational benefits including hiking, walking, birding along the river; and provide low aesthetic value. Invasive species commonly found colonizing riverbanks and its associated floodplain wetlands include common reed (aka *Phragmites*), purple loosestrife, garlic mustard, rice cut grass, reed canary grass, Japanese knotweed, multiflora rose, and oriental bittersweet. Many of these species were documented at various locations along the Jones River. Seeds from these species can be easily transported downstream by wind, flowing water, and mammals and birds. As water elevations drop within the Wapping Road dam impoundment and within associated wetlands, the exposed sediments will be susceptible to colonization by both native and invasive species.

An invasive species management plan has been developed and submitted separately. The planting plan details the areas of proposed invasive species removal. The total area of

invasive species removal is approximately 0.247 acres. Its implementation will be necessary as part of the construction and postconstruction monitoring plans.

4.0 CONSTRUCTION SEQUENCE AND SEDIMENT AND EROSION CONTROL

4.1 Construction Access and Sequence

Construction Access for the dam removal and all project elements downstream of Wapping Road is anticipated to be from Wapping Road as graphically depicted on the appended design plans. Construction access for project elements upstream of the dam will require negotiation of access easements with the adjacent property owner. The general sequence of construction assumes all requisite permits have been obtained:

1. Clear and grub for construction access road.
2. Install west bank construction access road from Wapping Road.
3. Perform full depth breach of dam on west side at sluice way. Install culverts upstream of breach and extend construction access road upstream of dam.
4. Install cofferdam to direct flow from eastern box culvert under Wapping Road to sluice way under building. Excavate channel to provide positive slope from culvert to sluiceway. Sandbag/block upstream end of western box culvert under Wapping Road to divert water into diversion channel under building.
5. Dewater area west of cofferdam and excavate channel and reshape as required.
6. Remove sandbags at upstream end of western box culvert and switch flow from the east box to the west box.

7. Extend access road along the east bank to complete channel grading and storm drain splash pads.
8. Remove cofferdam and reuse riprap from access road along the eastern slope face, retaining wall, and downstream training wall.
9. Topsoil and seed eastern side of work area while removing the access road.
10. Remove dam, sediment behind dam, and access road from east to west.
11. Remove temporary culverts and temporary portion of access road on west side.
12. Install plantings, topsoil, and seed all disturbed areas as shown on the planting plan.

The above sequence will need to be refined as the design progresses. Actual timing and time of year for each step in the sequence should be refined during final design and coordinated through the regulatory permitting process.

4.2 Sediment and Erosion Control

The contractor will be required to conduct construction activities in such a manner so as not to pollute any wetlands, watercourse, waterbody, and conduit carrying water, etc.

The contractor will be required to limit, insofar as possible, the surface area of earth materials exposed by construction methods and immediately provide permanent and temporary pollution control measures to prevent contamination of adjacent wetlands, watercourses, and waterbodies, and to prevent, insofar as possible, erosion on the site.

Proposed erosion control and construction safety measures include:

- ✓ Install orange construction safety fencing as shown on plans.
- ✓ Install construction access pads at both construction access roads.
- ✓ Install silt fence and haybales downgradient of all proposed grading.
- ✓ Install erosion control blankets with seed mix along areas of proposed grading having slopes 3:1 or greater.
- ✓ Place cofferdam within the channel.
- ✓ Ring temporary stockpile area with silt fence. (Note: Stockpile area to be determined prior to final design.)
- ✓ Install temporary plywood or rubber matting for equipment access upstream of the Wapping Road Bridge. (Note: This will need to be confirmed and approved by JRWA and land owner.)

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Appendix C
MHC Correspondence



The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

October 24, 2008

Nick Wildman
Priority Projects Planner
Massachusetts Dept. of Fish & Game
Riverways Program
251 Causeway Street, Suite 400
Boston, MA 02114

RE: Jones River Restoration, Wapping Road Dam, Wapping Road, Kingston, MA.
MHC# RC.45244

Dear Mr. Wildman:

Thank you for providing a Project Notification Form (950 CMR 71) to commence initial consultation for the proposed project referenced above. Additional information is required by the MIIC to evaluate what effect, if any, the proposed project may have on any significant historic and archaeological resources that may be present in the Area of Potential Effect (APE). When the project plans for the APE become available, please provide them to the MIIC for review and comment. Please also provide a description of how the removal and bank restoration are proposed to be accomplished, and the access routes and staging areas, so that MHC can understand the potential effects to the stream bank and the surrounding upland.

The project consists of the partial or complete removal of a privately owned dam on the Jones River at Wapping Road for restoration of the river function, enhancement of fish passage, and wetland restoration activities. The dam may have once served an industrial function in association with the adjacent buildings, formerly the mill at 26 Wapping Road (KIN.208), historically known as the Mayflower Worsted Company, but the age of the dam is not indicated.

Review of the Inventory of Historic and Archaeological Assets of the Commonwealth indicates that the dam is within Triphammer Village – Wapping Road Area (KIN.C). However, some level areas and the stream banks in the presently undetermined APE could contain unidentified archaeological deposits and features. It is possible that the ground on either side of the Jones River may once have been the location of a Native American habitation or fishing station, or other kinds of land use in ancient or historical times.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800) and Massachusetts General Laws, Chapter

9, Sections 26-27C (950 CMR 71). Please contact Tim Hollis at this office if you have any immediate questions.

Sincerely,



Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

cc: Alex Mansfield, Jones River Watershed Associates
Eric Hutchins, NOAA
Karen Kirk Adams, USACOE-NED, Regulatory
Karen Atwood, USACOE-NED
DEP-SERO, Wetlands and Waterways
Department of Conservation and Recreation – Dam Safety
Kingston Historical Commission
Kingston Conservation Commission



Commonwealth of Massachusetts

RIVERWAYS PROGRAM

Building Partnerships, Protecting Rivers

Joan C. Kimball, Director

October 10, 2008

Secretary of the Commonwealth
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125-3314

RE: Jones River Restoration Project- Kingston

Dear Reviewer,

Enclosed please find a copy of the Project Notification Form for the Jones River Restoration project at the Wapping Road dam. The project is being managed by Mr. Alex Mansfield of the Jones River Watershed Association with support from MA Riverways and others. Coordination with the local Historical Commission is ongoing.

Please feel free to call if I can provide any additional information.

Sincerely,

Nick Wildman
Priority Projects Coordinator

251 Causeway Street • Suite 400 • Boston, Massachusetts 02114 • www.massriverways.org • (617) 626-1540
Riverways Program, A Division of the Department of Fish and Game

*Deval L. Patrick, Governor
Commonwealth of Massachusetts*

*Ian A. Bowles, Secretary
Executive Office of Energy
& Environmental Affairs*

*Mary B. Griffin, Commissioner
Department of Fish and Game*

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A
MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: Jones River Restoration Project: Wapping Road

Location / Address: 26 Wapping Road

City / Town: Kingston

Project Proponent Name: Mr. Alex Mansfield, Jones River Watershed Association

Address: P.O. Box 73

City/Town/Zip/Telephone: Kingston, MA 02364 (781) 585-2322

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name	Type of License or funding (specify)
	<i>Funding</i>
MA Riverways Program / DFG	\$5,000 (feasibility)
MA Div. of Marine Fisheries	\$5,000 (feasibility)
NOAA/ Gulf of Maine Foundation	\$60,000 (feasibility)
	<i>Permitting (permits not submitted at this time)</i>
Department of Conservation and Recreation	Jurisdictional Determination Chapter 253
Kingston Conservation Commission	MA Wetlands Protection Act
MA DEP	Chapter 91 simplified dredging license (to be determined)
MA DEP	401 Water Quality Certification (to be determined)
US Army Corps of Engineers	Section 404

Project Description (narrative):

The proposed alter a privately-owned dam on the Jones River at Wapping Road in Kingston to enhance anadromous fish passage and restore river functions. This restoration may take the form of a fish ladder, a partial breach, or full removal of the dam. Caton Connector Corporation, the dam owner has demonstrated support of the feasibility study. The project will also involve the restoration of an adjacent wetland community that has developed in the old mill raceway.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

The project will involve the partial or full demolition of the Wapping Road dam to meet project goals of enhanced fish passage and restoration of riverine functions and values. In addition, alterations to the Wapping Road bridge (a concrete double box culvert) may need to be made to ensure its stability in the new hydraulic regime.

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

The proposed project would close off flow to the raceway that passes under the mill building now. The raceway is no longer needed because the building no longer supports mill operations. Alternatives for stabilizing the structure in the area of the raceway will be developed. In addition, one corner of the building may need to be restored following the removal of the dam to prevent destabilization of the structure. This eventuality will be evaluated in the design process.

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

The proposed project will not include new construction.

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A (continued)

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

Potentially historic structures include:

1. The former mill building that now houses Caton Connector Corp. and sits on the left bank of the impoundment 26 Wapping Rd,
2. The property at 17 Wapping Rd.,
3. The property at 23 Wapping Rd,
4. The property at 25 Wapping Rd,
5. The property at 21 Wapping Rd,
6. The property at 30 Wapping Rd,

The Kingston Historical Society has begun research into the project area using their records.

What is the total acreage of the project area?

Woodland approx 0.25 acres

Wetland approx 13.75 acres

Floodplain approx. 0.25 acres

Open space _____ acres

Developed approx. 0.5 acres

Productive Resources:

Agriculture _____ 0.0 _____ acres

Forestry _____ 0.0 _____ acres

Mining/Extraction _____ 0.0 _____ acres

Total Project Acreage approx. 14.8 _____ acres

What is the acreage of the proposed new construction? 0.0 _____ acres

What is the present land use of the project area?

The land around the river is used for commercial (Caton Connector Corporation) and residential uses. In addition, Wapping Road (Route 106) passes through the project area.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: _____ Date: _____

Name: Nick Wildman

Address: Riverways Program, 251 Causeway Street, Suite 400

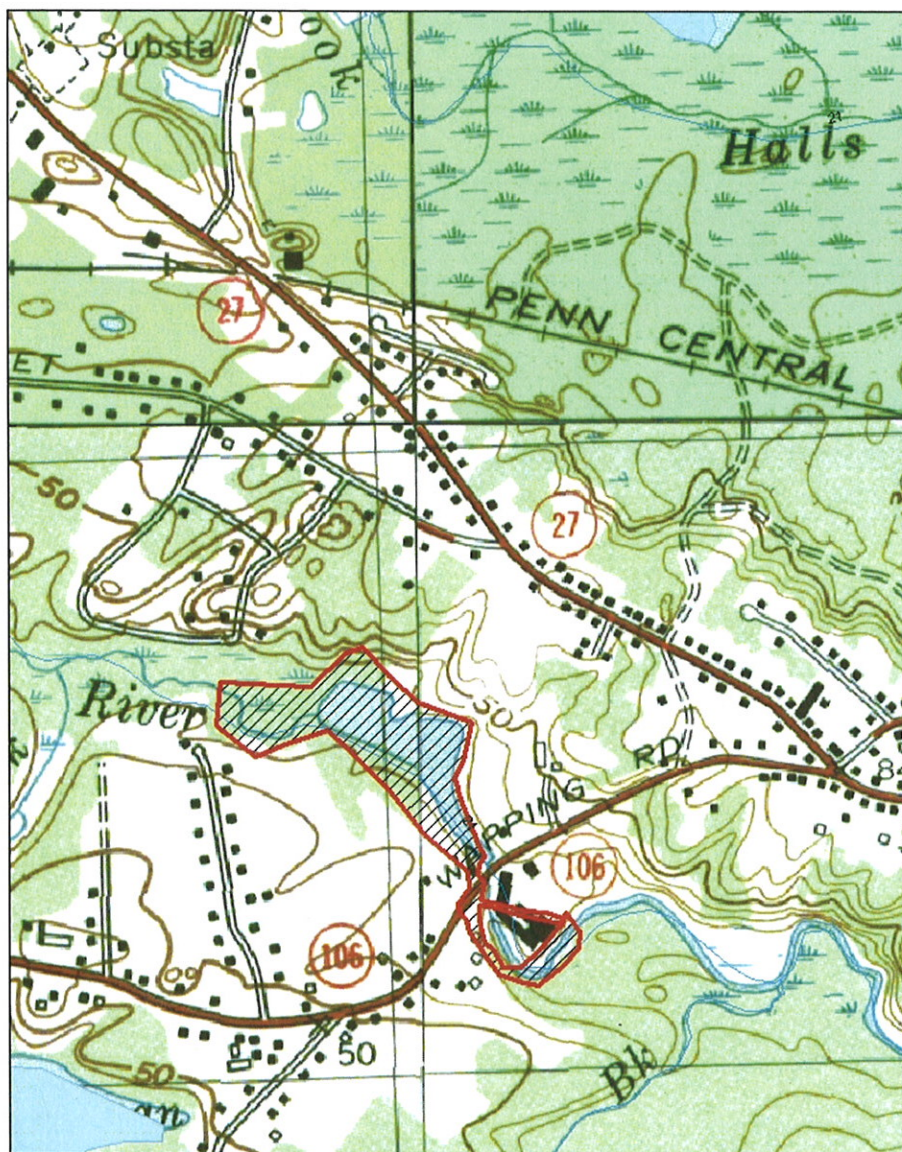
City/Town/Zip: Boston, MA 02114

Telephone: 617-626-1527

CC: Alex Mansfield, JRWA

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.



Wapping Road Dam

USGS Quad, "Plymouth, MA"

Project Area

 Polygon1

Appendix D
2009 Feasibility Study

Appendix E
2009 Blue-Spotted Salamander Survey Report

May 19, 2009

Final Report

2009 Blue-spotted Salamander Survey

Wapping Road Dam Removal Project Kingston, Massachusetts

NHESP Tracking No. 08-25417

Prepared for:
Nick Wildman
Riverways Program
Department of Fish and Game
251 Causeway Street, Suite 400
Boston, MA 02144

Prepared by:



Daniel Wells, M.S.



HYLAecological

Hyla Ecological Services, Inc. – 210 Summer St, Unit #2 – Somerville, MA 02143
Phone: (978) 505-0923 – Fax: (978) 405-5035
www.hyla-ecological.com

INTRODUCTION

Hyla Ecological Services, Inc. (HES) performed a survey for blue-spotted salamanders within the vicinity of the Wapping Road Dam, along the Jones River in Kingston, Massachusetts (Figure 1). The study area is within an area mapped by the Massachusetts Natural Heritage Atlas, 13th Edition (effective October 1, 2008) as Priority Habitat of Rare Species (PH 586) and Estimated Habitat of Rare Wildlife (EH 512) for the blue-spotted salamander (*Ambystoma laterale*) and the Eastern box turtle (*Terrapene carolina*), both listed as “Species of Special Concern” by the Massachusetts Natural Heritage and Endangered Species Program (NHESP).

Currently, a project is underway to remove the Wapping Road Dam. Removal of the dam would restore a natural stream condition and eliminate the upstream impoundment. This may affect the hydrology of existing floodplain pools. A funnel trap survey and egg mass searches were performed in spring 2009 to determine if blue-spotted salamanders breed in any floodplain wetland habitat adjacent to the Jones River in the area of the existing impoundment. Funnel traps were set in areas of potential breeding habitat in order to capture any breeding adult salamanders, and visual searches were conducted for the presence of egg masses in the wetlands where trapping took place. Permission for all trapping and capture activities was obtained from the Massachusetts Division of Fisheries and Wildlife (Scientific Collection Permit for Reptiles and Amphibians #311.09WRA). Land access permissions were obtained by the Jones River Watershed Association for each of the private properties included in the survey.

STUDY AREA

A visual inspection of the study area took place on March 16, during which the general survey area was searched for any vernal pools, isolated depressions or swamps in the floodplains bordering on the Jones River. A total of four separate wetland areas were determined to contain potentially suitable breeding micro-habitat for blue-spotted salamanders, which consisted of shallow standing water separated at least intermittently from the Jones River and its immediate bordering vegetated wetlands. Figure 2 shows the locations and approximate boundaries of the four wetlands, referred to as “Pool 1” to “Pool 4” respectively. Of the four wetland areas, Pools 1-3 were considered marginal potential breeding habitats due to their small sizes and shallow depths; only Pool 4 was considered to be a high-quality potential breeding habitat from the outset of the survey.

Pool 1

This wetland area is a very dense shrub swamp wetland, with pockets of shallow standing water interspersed throughout. It contains a shrub cover dominated by silky dogwood (*Cornus amomum*) and speckled alder (*Alnus rugosa*) in its interior, surrounded by highbush blueberry (*Vaccinium corymbosum*) around its perimeter, which transitions to a tree canopy of red maple (*Acer rubrum*) and white pine (*Pinus strobus*). The wetland is not a confined basin depression, but more of a floodplain depression that becomes isolated from the nearby river throughout portions of the year. It extends approximately

150 feet long by 50 feet wide, with a maximum water depth of approximately 12 inches. Most of the wetland was too shallow (2-3 inches deep) to set traps during the survey. The wetland was isolated from the river during most of the survey, however beginning on April 4 the river's water level had risen significantly and the wetland was connected on two sides to the river's flood plain.



Funnel traps set in a small pocket of open water in Pool 1.

Pool 2

This wetland area consists of a shallow, isolated depression embedded within a mature forest. The pool contains a carpeting of sphagnum moss on its bottom with some highbush blueberry shrubs growing atop moss-covered hummocks. It was approximately 80 feet long by 25 feet wide, with a maximum depth of 10 inches. Most of the wetland was too shallow (2-3 inches deep) to set traps throughout the survey. The pool is surrounded by mature white pine – oak forest, dominated by white pines and red oaks (*Quercus rubra*).



Funnel traps set in Pool 2.

Pool 3

This pool is a relatively open, shallow basin depression surrounded by large white pines. Emergent herbaceous vegetation and medium-to-large woody debris are present within the pool basin. It was approximately 65 feet long by 45 feet wide, with a maximum depth of 10 inches. It has a narrow intermittent inlet and a channelized intermittent outlet which leads towards the Jones River.



Funnel traps set in Pool 3.

Pool 4

This wetland is a large shrub swamp, with hummock and hollow topography and scattered pockets of open water amongst a very dense shrub cover. The majority of the swamp is covered by highbush blueberry shrubs growing on sphagnum hummocks. Swamp rose (*Rosa palustris*) is also present in the shrub layer of the swamp, along with a few small Atlantic white cedar (*Chamaecyparis thyoides*) and red maple trees. The area of standing water during most of the survey extended to approximately 300 feet by 150 feet; the swamp continues to the west where it becomes a more forested red maple swamp. The interior of Pool 4 had the deepest water – up to 40 inches in its deepest pockets, however the outer edges were as shallow as 1-2 inches for most of the survey. Like Pool 1, on April 4 the river level had risen significantly such that the entire swamp was flooded, and average water depth rose by as much as a foot. The substrate of this pool was quite soft and mucky. A narrow culvert in the southeast end of the swamp provides a direct, permanent connection to the Jones River under a dirt trail.



Typical small pocket of open water in Pool 4.

METHODS

Funnel Trap Survey

A total of 30 un-baited funnel traps were set among the four wetland areas determined to contain potential blue-spotted salamander breeding habitat (Table 1). Traps were set each day prior to a forecasted rainy night, and checked and reset or removed the following day depending on the number of captured amphibians and/or the weather forecast for the subsequent evening. Traps consisted of metal funnel cylinders (aka “Gee Minnow Traps”) which were 16 inches long, with an 8.5-inch diameter and a 1-inch opening on both sides. Traps were attached by a rope to an oak stake, and spaced approximately 20-30 feet apart within the deepest pockets of open water within the

various wetlands, with flagging tape indicating each individual trap's identification number. In most cases, the water depth in the wetlands was sufficiently shallow so that at least the top 1-2 inches of the trap were above the water surface.

Weather conditions were carefully monitored during March and early April. The first rain of the season was forecast for the evening of March 18 and the funnel traps were set that afternoon. Traps were checked the following day (March 19), and temporarily removed due to dry weather. March 26 saw more rain forecast and the traps were reset and checked continuously from March 27 until April 4, when they were permanently removed from Pools 1-3. The traps remained set in Pool 4 for one additional night until April 5 when the survey was concluded. A total of 286 trap nights were accumulated during the course of the survey (Table 1).

Table 1 – Funnel Trap Survey Trapping Effort

Wetland ID	# of Funnel Traps	# of Nights	# of Trap-nights
Pool 1	6	10	60
Pool 2	5	10	50
Pool 3	6	9 ¹	54
Pool 4	13 ²	11	122
TOTALS	30	-	286

Egg Mass Search

Egg mass searches were conducted in all four pools on two occasions. The first search was conducted on April 5, after the funnel trapping was concluded and egg masses had been seen in Pool 4. The survey was performed on a clear, sunny day with perfect visibility into the water. The second search was conducted on April 24, another sunny, clear day with perfect viewing conditions.

RESULTS

Funnel Trap Survey

No blue-spotted salamanders were captured in the funnel traps in any of the four pools (Table 2). Spotted salamanders (*Ambystoma maculatum*) were captured in Pool 1 (one female) and Pool 4 (31 total captures). The only other amphibian species captured was the green frog (*Rana clamitans*), which was captured as tadpoles in Pool 1 and as a juvenile in Pool 4. One fish species, the redbfin pickerel (*Esox americanus*), was captured regularly in Pool 4 and once in Pool 1.

¹ Traps were mistakenly removed by the landowner on 3/26, but were replaced the following day.

² In Pool 4, 6 traps were initially set on 3/18, and reset on 3/26. Seven additional traps were added on 3/28 as water depth increased throughout the pool, bringing the total number of traps to 13.

The first seasonal captures were recorded on March 19, when a green frog tadpole and two pickerel were observed in traps. The greatest number of captures took place on March 30, when 12 spotted salamanders and 4 redfin pickerel were captured in Pool 4.

Table 2 – Summary of Funnel Trap Captures

Wetland ID	Blue-spotted Salamander	Spotted Salamander	Green Frog	Redfin Pickerel	TOTAL
<i>Pool 1</i>	0	1 (f)	2 (tadpoles)	1	4
<i>Pool 2</i>	0	0	0	0	0
<i>Pool 3</i>	0	0	0	0	0
<i>Pool 4</i>	0	31 (16m, 15f)	1(juv.)	28	60
Total	0	32	3	29	64

Egg Mass Survey

In Pool 4, 11 spotted salamander egg masses were counted on April 5, and 12 were seen on April 24. One spotted salamander egg mass was seen in Pool 1 on the second survey date. Neither Pool 2 nor Pool 3 had any amphibian egg masses.

CONCLUSIONS

There were no breeding adult blue-spotted salamanders captured in the funnel traps, nor any blue-spotted salamander egg masses observed, which indicates that the species does not breed in any of the surveyed wetlands. A total of 31 spotted salamanders were captured in Pool 4, and at least 12 egg masses were observed, indicating that the species breeds successfully in that wetland. Interestingly however, Pool 4 also contained a large number of redfin pickerel throughout the duration of the survey. Spotted salamanders and other vernal pool breeding amphibians typically do not breed successfully in wetlands with fish populations. The pickerel have year-round access to the pool via the small culvert in its southeastern corner, and because of this the pool may not qualify as a “certifiable” vernal pool under the NHESP “Guidelines for the Certification of Vernal Pool Habitat” despite the documented breeding by spotted salamanders.

Despite a lone spotted salamander capture and a single egg mass, Pool 1 does not appear to be a viable breeding habitat for mole salamanders (*Ambystoma spp.*), nor does it contain vernal pool habitat. Pools 2 and 3 do not contain breeding mole salamanders and are not vernal pools.

In conclusion, the area surveyed for blue-spotted salamanders as part of the Wapping Road Dam Removal Project does not contain a significant breeding population of blue-spotted salamanders therefore the species is unlikely to be affected adversely by alterations in water levels associated with the proposed dam removal.

SELECTED ANIMAL PHOTOGRAPHS



Male spotted salamander, captured 3-30-09.



Spotted salamander egg mass, photo taken 4-5-09.



Juvenile green frog in funnel trap, captured on 4-2-09.



Redfin pickerel in funnel trap, captured on 3-30-09.



Figure 1 - USGS Locus with NHESP Overlay
Wapping Road Dam, Kingston, MA



0 0.125 0.25 0.5 Miles

Scale = 1:25,000

GIS Data Source: "Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs"

Date:
5/11/2009



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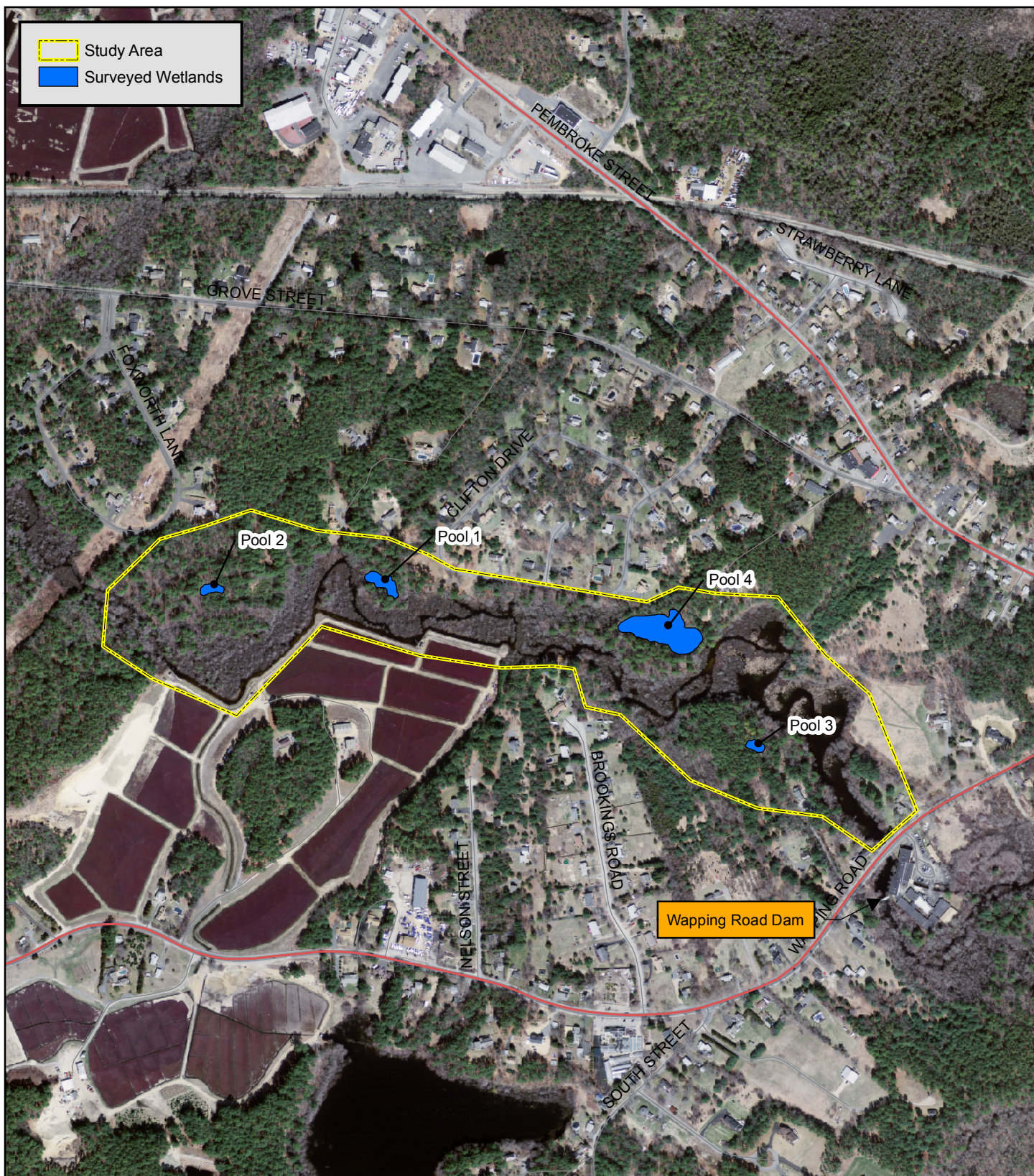


Figure 2 - Orthophoto View of Study Area



0 125 250 500 750
Feet

Scale = 1:8,000

GIS Data Source: "Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs"

Date:
5/11/2009

