

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
EPA NEW ENGLAND**

**PERMIT UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)  
AS AMENDED (42 U.S.C. SECTION 6901 ET SEQ.)**

General Electric Company  
159 Plastics Avenue  
Pittsfield, Massachusetts 01201  
EPA I.D. No. MAD002084093

The Permittee is required to conduct certain activities at areas affected by releases of hazardous waste and/or hazardous constituents from the General Electric Facility located in Pittsfield, Massachusetts, in accordance with Sections 3004(u), 3004(v), and 3005(c) of the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), as specified in the conditions set forth herein.

This Permit has been prepared for RCRA Corrective Action activities to be performed by General Electric pursuant to a final Consent Decree, United States, et al. v. General Electric Company (D. Mass.) ("Consent Decree"). The Consent Decree memorializes an agreement to address releases of Waste Materials, including hazardous substances, hazardous waste, and/or hazardous constituents from the General Electric Company's Facility in Pittsfield, Massachusetts, including, but not limited to, the releases of hazardous waste and/or hazardous constituents addressed in this Permit. This Permit, upon the effective date, shall replace the HSWA Permit previously issued to the Permittee, initially issued on February 8, 1991, modified effective January 3, 1994, reissued in October 2000 and reissued again, effective December 5, 2007. Upon the effective date of this Reissued Permit, the previously issued 2007 Permit hereby is revoked, and, pursuant to the Consent Decree, the Remedial Action set forth in the Permit shall be implemented pursuant to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Consent Decree.

Dated: \_\_\_\_\_

Signed: \_\_\_\_\_ DRAFT FOR PUBLIC COMMENT \_\_\_\_\_

James T. Owens III, Director  
Office of Site Remediation and Restoration  
U.S. Environmental Protection Agency, EPA New England  
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Boston, Massachusetts 02109-3912

This Reissued Permit will become effective 30 days after signature of the EPA New England (Region 1) Director of the Office of Site Remediation and Restoration, unless review is requested on the permit under 40 Code of Federal Regulations (C.F.R.) 124.19, in which case, the effective date will be established in the context of such review(s).

**GENERAL ELECTRIC CO. – PITTSFIELD, MA  
RCRA CORRECTIVE ACTION PERMIT**

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## DEFINITIONS

Unless otherwise expressly provided herein, terms used in this Permit, which are defined in the Consent Decree, or in CERCLA, RCRA, or in regulations promulgated under CERCLA or RCRA, shall have the meaning assigned to them in the Consent Decree, CERCLA, RCRA, or in such regulations.

1. “Act” or “RCRA” means the Solid Waste Disposal Act, as amended (also known as the Resource Conservation and Recovery Act), 42 United States Code (U.S.C.) §§ 6901 et seq.
2. “Backwaters” means the areas that are typically inundated or open water adjacent to the main channel of the river in Reaches 5, 6, and 7 that are generally depicted on Figure 3-17 of GE’s October 2010 Revised Corrective Measures Study.
3. “CERCLA” means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601 et seq.
4. “Consent Decree” or “CD” means the Consent Decree among the General Electric Company, the United States, Massachusetts and Connecticut state governmental agencies, the City of Pittsfield, Massachusetts, and the Pittsfield Economic Development Authority, which was entered by the United States District Court for the District of Massachusetts on October 27, 2000, in the case of United States et al. v. General Electric Company, Civil Action No. 99-30225-MAP and consolidated cases.
5. “Core Habitat Areas,” “Core Area 1,” “Core Area 2,” and “Core Area 3” mean the areas above Woods Pond in the Rest of River that Massachusetts Division of Fisheries and Wildlife (DFW) mapped to assist the governments in determining areas for habitat protection and the locations of habitats and state-listed species that might be particularly sensitive to impacts from remediation activities. These Core Habitat Areas are described in a letter transmitted from DFW to EPA on July 31, 2012 and shown in accompanying maps, which are included in Attachment B.
6. “EPA” means the United States Environmental Protection Agency, EPA New England, and any successor department or agency.
7. “Exposure Point Concentration” or “EPC” means the concentration of a contaminant that is used in the calculation of risk to humans or ecological receptors.
8. “Floodplain” is the area located within the floodplain of the Housatonic River to which hazardous waste and/or hazardous constituents originating at the GE Facility are migrating, have migrated, or may have migrated out to the 1 part per million (ppm) isopleth of PCB contamination in the Rest of River.
9. “Frequently Used Subareas” or “Heavily Used Subareas” means the areas subject to frequent use by humans, including, but not limited to, trails, access points, and known recreational areas that pose a direct contact risk, which generally include the areas shown in Figure 5.

10. “GE Facility” means, for the purposes of this Permit, the General Electric facility in Pittsfield, Massachusetts, as generally depicted on the map attached hereto as Attachment A.
11. “Hazardous Constituents” include those constituents listed in Appendix VIII to 40 C.F.R. Part 261 and Appendix IX to 40 C.F.R. Part 264.
12. “Hazardous Waste” means a solid waste or combination of solid wastes defined as a hazardous waste under 40 C.F.R. Part 261.
13. “HSWA” means the Hazardous and Solid Waste Amendments of 1984.
14. “Impoundment” means any area of sediment, soil, or water subject to the influence of a dam or dam component, including, but not limited to, sediment or soil present in spillways, sluiceways, channels, by-passes, conduits, ponds, settling basins, intake structures, or other structures used for collection, withdrawal, or use of water and any water withdrawn and used as process water, non-contact cooling water, etc.
15. “Monitored Natural Recovery” means a remedy for contaminated sediment that typically uses ongoing, naturally occurring processes to contain, destroy, or reduce the bioavailability or toxicity of contaminants in sediment, and requires monitoring the natural processes and/or concentrations of contaminants in surface water, sediment, or biota to see if recovery is occurring at the expected rate, and the maintenance of institutional controls until the necessary reductions in risk have occurred.
16. “PCBs” means polychlorinated biphenyls.
17. “Performance Standards” mean cleanup standards, design standards, and other measures and requirements identified in this Modification of the Reissued RCRA Permit or subsequently identified in the Rest of River Statement of Work (“Rest of River SOW” or “SOW”) that must be met.
18. “Permittee” means the General Electric Company.
19. “Reach” means the designation established by EPA in its 2000 Supplemental Investigation Work Plan for different segments of the East Branch and main stem of the Housatonic River shown in Figures 1 and 2.
20. “Release” includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, disposing, or migrating into the environment.
21. “Restoration” means the activities necessary during and following remediation to return, to the extent feasible and consistent with the remediation requirements, river and floodplain habitats to the functions, values, characteristics, species use, and other attributes existing prior to remediation.
22. “Solid Waste” means a solid waste as defined in 40 C.F.R. § 261.2.

23. “States” means the Commonwealth of Massachusetts and the State of Connecticut.
24. “Surface Water” means water occurring immediately adjacent to land as overland flow, open channel flow, closed conduit flow, and waters in lakes, ponds, and reservoirs.
25. “Vernal Pools” mean ephemeral fresh-water wetlands that meet the criteria specified in the Commonwealth of Massachusetts Natural Heritage & Endangered Species Program’s Guidelines for Certification of Vernal Pool Habitat (March 2009 publication, Sections I, II, and III).

## I. GENERAL PERMIT CONDITIONS

The Permittee shall comply with the following general permit conditions pursuant to RCRA, and 40 C.F.R. Parts 124 and 270, to the extent such conditions relate to the Permittee’s corrective action activities under this Permit. A number of the Permittee’s obligations set forth in this Permit are incorporated by reference in the Consent Decree, while other provisions of this Permit incorporate or cross-reference to provisions of the Consent Decree.

### A. Duty to Comply

The Permittee shall comply with all conditions of this Permit, except that the Permittee need not comply with the conditions of this Permit to the extent and for the duration that such noncompliance is authorized by an emergency permit (see 40 C.F.R. § 270.61). For purposes of enforcement, compliance with this Permit during its term constitutes compliance with Sections 3004(u), 3004(v), and 3005(c) of the Act. Except as provided in the Consent Decree or approved by EPA pursuant to the Consent Decree, the Permittee is also required to comply with 40 C.F.R. Parts 260, 261, 262, and 263, to the extent the requirements of those Parts are applicable, and with all applicable self-implementing provisions imposed by RCRA or the Part 268 regulations. Any noncompliance with the Permit, except under the terms of an emergency permit, constitutes a violation of the Act and is grounds for enforcement action; for Permit termination, revocation and reissuance, or modification; or for denial of a Permit renewal application; provided, however, that in the event of such noncompliance, enforcement of those requirements of this Permit which are incorporated in the Consent Decree or which incorporate provisions of the Consent Decree shall be in accordance with and pursuant to the Consent Decree rather than RCRA and this Permit. In no event shall the Permittee be liable for penalties or subject to other enforcement action under both RCRA and the Consent Decree for the same instance of noncompliance.

### B. Duty to Mitigate

In addition to the requirements of the Consent Decree, in the event of any noncompliance with the corrective action requirements of the Permit that results in a new release of hazardous waste and/or hazardous constituents to the

environment, the Permittee shall take all reasonable steps to minimize releases of hazardous waste and/or hazardous constituents to the environment, and shall carry out such measures as are reasonable to prevent its noncompliance from having significant adverse impacts on human health and/or the environment.

C. Permit Actions

This Permit may be modified, revoked and reissued, or terminated for cause as specified in 40 C.F.R. §§ 270.41, 270.42, and 270.43; provided, however, that notwithstanding the foregoing clause, this Permit shall not be modified or revoked and reissued prior to its expiration date except: (1) by written agreement of the Permittee and EPA; or (2) in the event of the Permittee's noncompliance with this Permit as provided in Section I.A of this Permit; or (3) upon transfer of this Permit as provided in Section I.J of this Permit. The filing of a request by the Permittee for a Permit modification, revocation and reissuance, or termination under this General Condition, or a notification of anticipated noncompliance under Section I.I, shall not stay any condition of this Permit.

This Reissued Permit, at the conclusion of dispute resolution proceedings under the Consent Decree and after the opportunity for challenges as specified in the Decree, shall be performed by the Permittee as a CERCLA remedial action pursuant to the Consent Decree. The Permittee shall develop and submit to EPA for review and approval a Rest of River Statement of Work (SOW) in accordance with the Consent Decree. Such Rest of River SOW shall include provisions and schedules for the subsequent development by the Permittee of Remedial Design Work Plan(s), Remedial Action Work Plan(s), and/or other appropriate associated plans to achieve the Performance Standards and other requirements set forth in this modification of the Reissued RCRA Permit, and in the Rest of River SOW, and (if applicable) reflecting the outcome of any completed dispute resolution proceeding.

Following EPA approval, disapproval, or modification of the Rest of River SOW, the Permittee shall develop and submit the necessary Remedial Design and Remedial Action Work Plans and other documents to EPA for review and approval<sup>1</sup> in accordance with the Rest of River SOW and Section XV of the Consent Decree and subject to Paragraph 39 of the Consent Decree.

As provided in Paragraph 22.z of the Consent Decree, the Permittee shall design and implement the Rest of River Remedial Action, and any required Operation and Maintenance (O&M), as a CERCLA remedial action pursuant to the Consent Decree, in accordance with EPA's final RCRA permit modification decision, the final outcome of any dispute resolution proceedings, the Rest of River SOW, and

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<sup>1</sup> For all submittals pursuant to this Reissued Permit, the approval, disapproval, or modification process, including reasonable opportunity for review and comment by, or consultation with, the States, shall be in accordance with the Consent Decree Section XV. "Approval" by EPA, as used in this Permit, represents this process.

any approved Work Plans thereunder. For purposes of the Rest of River Remedial Action and O&M, EPA's modification of the Reissued RCRA Permit to select such Remedial Action and O&M that is effective at the time of initiation of the Rest of River Remedial Design/Remedial Action shall be considered to be the selected remedial action pursuant to Section 121 of CERCLA and Section 300.430 of the National Oil and Hazardous Substances Contingency Plan (NCP). If such modification is changed by appeals and/or remands, the subsequent modification of the Reissued RCRA Permit shall be considered the selected remedial action pursuant to Section 121 of CERCLA and Section 300.430 of the NCP, and any and all performance or actions required of the Permittee under this Reissued RCRA Permit shall be incorporated into, and conducted pursuant to, the Consent Decree.

D. Property Rights

1. The issuance of this Permit does not convey any property rights of any sort, or any exclusive privilege to the Permittee.
2. The issuance of this Permit does not authorize any injury to persons or property or invasion of other private rights.

E. Duty to Provide Information

1. Within a reasonable time, the Permittee shall furnish to EPA any relevant non-privileged information which EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit in accordance with General Condition I.C, or to determine compliance with this Permit. Upon request, the Permittee shall also furnish to EPA copies of records required to be kept or prepared by this Permit and copies of other documents and information within the Permittee's possession or control relating to the implementation of this Permit, in accordance with and subject to Section XXX of the Consent Decree.
2. All information which the Permittee furnishes to EPA, either in the form of a request or a report pursuant to this Permit, shall contain or reference the sources from which the information was obtained.

F. Inspection and Entry

The Permittee shall provide EPA or an authorized representative, upon presentation of credentials and other documents as may be required by law, with access at reasonable times to the GE Facility or other property owned by the Permittee where any activity under this Permit is located or conducted, for the purpose of conducting, inspecting, or monitoring any activity pursuant to this Permit; inspecting or copying records required to be kept under this Permit; conducting sampling or other investigations related to implementation of this Permit; assessing the Permittee's compliance with this Permit; or conducting other

activities described in Paragraph 53 (access obligations) of the Consent Decree insofar as they relate to activities under this Permit. The Permittee's provision of such access to EPA or an authorized representative shall be in accordance with and subject to Paragraph 53 of the Consent Decree.

G. Monitoring and Records

1. Samples and measurements taken for the purpose of waste analysis shall be representative of the waste to be analyzed. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of 40 C.F.R. Part 261 or as provided in the approved and most recent edition of the Project Operations Plan described in Attachment C to the Statement of Work for Removal Actions Outside the River (which is Appendix E to the Consent Decree) and any amendments approved thereto.
2. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
3. The Permittee shall retain the records described in Paragraph 206.a of the Consent Decree, insofar as they relate to implementation of this Permit, for the time period specified in the second sentence of Paragraph 206.b of the Consent Decree.
4. Records of data obtained through monitoring shall include:
  - a. The date, exact place, and time of sampling or measurements;
  - b. The individual(s) who performed the sampling or measurements;
  - c. The raw data (e.g., chromatograms) collected and data reduction;
  - d. The date(s) analyses were performed;
  - e. The individuals(s) who performed the analyses;
  - f. The analytical techniques or methods used;
  - g. The result of analyses; and
  - h. The quality assurance/quality control data.

H. Signatory Requirements

All proposals, reports, and other documents submitted by the Permittee under this Permit shall be signed by an authorized representative of the Permittee, which may include the Permittee's Project Coordinator, designated pursuant to Section II.D.

I. Notice of Anticipated Noncompliance

The Permittee shall give advance notice to EPA of any planned changes in any corrective action activity under this Permit which may result in noncompliance with the requirements of this Permit.

J. Transfer of Permit

This Permit shall not be transferred to a new owner or operator except after notice to and approval of the planned transfer by EPA, which may require that the Permit be modified or revoked and reissued.

K. Twenty-Four-Hour Reporting and Follow-Up

The Permittee shall comply with the reporting requirements set forth in Paragraph 69 of Section XIV of the Consent Decree; provided, however, that the Permittee shall not be subject to multiple enforcement actions or liable for multiple penalties under the Consent Decree, CERCLA, the Emergency Planning and Right-to-Know Act, RCRA, and/or this Permit for the same instance of noncompliance with such requirements.

L. Other Notification and Reporting Requirements

1. The Permittee shall report to EPA all instances of noncompliance with the terms of this Permit in the monthly progress reports to be provided pursuant to Paragraph 67 of the Consent Decree. For each instance of noncompliance, such report shall contain the following information:
  - a. A description of the noncompliance;
  - b. The name and quantity of materials released, if any, as a result of such noncompliance;
  - c. The extent of injuries, if any, resulting from such noncompliance;
  - d. An assessment of actual or potential hazards to human health and/or the environment, where applicable, resulting from such noncompliance;
  - e. Any steps taken to mitigate the impact of such noncompliance or otherwise to correct such noncompliance; and
  - f. A description of the impact of such noncompliance on the performance and timing of other activities required under this Permit.
2. When the Permittee becomes aware that it failed to submit any relevant facts in a required report, or submitted incorrect information in a required report to EPA, it shall promptly submit the correct facts or information.

M. Computation of Time

1. For the purpose of compliance with this Permit, computation of time periods shall be made by the methodology specified in 40 C.F.R. 124.20.
2. Where this Permit requires the submission of written reports or notification to EPA, the report or notification shall be deemed submitted on the post-marked date.

N. Severability

The provisions of this Permit are severable, and if any provision of this Permit or the application of any provision of this Permit to any circumstances is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby.

O. Confidentiality of Information

In accordance with 40 C.F.R. Part 2, any information submitted to EPA pursuant to this Permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words Confidential Business Information on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 C.F.R. Part 2.

P. Interpretation of Migration from GE Facility

For purposes of this Permit, the Permittee agrees that, for hazardous waste and/or hazardous constituents in the Rest of River area which are also present both at the GE Facility and at the Former Oxbow Areas (as defined in the Consent Decree) and which could have migrated to the Rest of River area from either the GE Facility or the Former Oxbow Areas, the Permittee will not contend that such waste and/or constituents did not migrate from the GE Facility.

II. SPECIAL CONDITIONS

A. Introduction

The Special Conditions in this Reissued RCRA Permit for Rest of River describe the Performance Standards, and corrective measures necessary to attain such Performance Standards, that the Permittee shall perform, pursuant to the CD and this Permit, as modified.

As described in the CD and this Permit, all Permittee activities shall be conducted pursuant to such Permit and the Consent Decree under the oversight and approval of EPA. All EPA approvals, disapprovals, or modifications of plans and other submittals under such Permit will be pursuant to Section XV of the CD, including the reasonable opportunity for review and comment by the Commonwealth of Massachusetts (MA) and Connecticut Department of Energy and Environmental Protection (CT DEEP).

Any modification by EPA of a Performance Standard (e.g., work in a riverbank that modifies Performance Standards set forth in Sections II.B.1.b.(2) and II.B.1.c.(2)) would have to be based on EPA’s determination under Paragraphs 162-163 of the CD or based on agreement under Paragraph 217 of the CD.

**B. Description of Performance Standards and Corrective Measures**

The Permittee shall conduct all necessary corrective measures to meet the Performance Standards outlined below:

**1. River Sediment and Banks**

**a. General Performance Standards**

- (1) Downstream Transport –The Downstream Transport Performance Standard shall be the PCB flux over Woods Pond Dam and Rising Pond Dam as described in the table below.

<b>Woods Pond</b>		<b>Rising Pond</b>	
<b>Flow at Woods Pond Dam Gage (cubic feet per second (cfs))</b>	<b>Average PCB Flux (kg/yr)</b>	<b>Flow at Great Barrington USGS Gage (cfs)</b>	<b>Average PCB Flux (kg/yr)</b>
≤ 325	2.2	≤ 485	1.9
> 325 ≤ 395	2.8	> 485 ≤ 600	2.4
> 395 ≤ 1450	3.3	> 600 ≤ 2,670	4.0
> 1450	NA	> 2,670	NA

Note: The annual average PCB flux values that correspond to the associated flow ranges were determined as follows: The PCB fate and transport model (EFDC) results were used to generate average annual PCB fluxes at both Woods Pond and Rising Pond for the years following construction, which include a range of average annual flows. The model was run based on the sediment/bank remediation requirements, excluding the use of activated carbon in Reach 5B and the Backwaters, as set forth in this Permit. The average annual fluxes were segregated into the flow ranges shown in the table above and the maximum flux for each flow range was determined. To account for uncertainty, the value at the upper flow range for each flow-bin was selected from a 95% prediction interval of the regression of average annual flux versus flow.

An exceedance of the Performance Standard occurs when the average PCB flux is greater than the standard (at either Woods Pond or Rising Pond) in three or more years within any 5-year period following completion of construction-related activities outlined herein. Permittee shall propose in a plan, pursuant to Section II.B.11, a methodology to evaluate compliance with this Performance Standard.

In the event that this Downstream Transport Performance Standard is exceeded, the Permittee shall determine the cause of the exceedance and EPA may consider modifications to the Rest of River remedy in accordance with its authority under the CD and CERCLA.

(2) Biota

- (a) The Biota Performance Standard shall be an average PCB concentration of 1.5 milligrams per kilogram (mg/kg) wet weight, skin off, in fish fillet<sup>2</sup> in each entire reach of the river and Backwaters to be achieved within 15 years of completion of construction-related activities for that reach (or if the reach is subject to Monitored Natural Recovery (MNR), upon completion of the closest upstream reach subject to active remediation) under this Permit.
- (b) The Long-Term Biota Benchmarks shall be an average PCB concentration of 0.064 mg/kg, wet weight, skin off, in fish fillet<sup>3</sup> in each entire reach of the river and Backwaters in Massachusetts and 0.00018 mg/kg, wet weight, skin off, in fish fillet<sup>4</sup> in each entire reach of the river in Connecticut, and 0.075 mg/kg in duck breast tissue<sup>5</sup> in all areas along the river. The Permittee shall evaluate progress towards achieving these benchmarks.

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<sup>2</sup> Based on the probabilistic risk assessment central tendency exposure (CTE) adult exposure Hazard Index (HI) = 1.

<sup>3</sup> Based on the probabilistic risk assessment Reasonable Maximum Exposure (RME)  $1 \times 10^{-5}$  cancer risk.

<sup>4</sup> Based on CT DEEP consumption calculation assuming 365 fish meals per year and a  $1 \times 10^{-6}$  cancer risk.

<sup>5</sup> Based on the probabilistic risk assessment RME  $1 \times 10^{-5}$  cancer risk.

- (c) Monitoring to assess achievement of the Biota Performance Standard and progress towards the Long-Term Biota Benchmarks will be conducted in accordance with the Section II.B.4.

In the event that this Biota Performance Standard is exceeded in two consecutive monitoring periods after the 15-year period specified above, the Permittee shall determine the cause of the exceedance and EPA may consider modifications to the Rest of River remedy in accordance with its authority under the CD and CERCLA.

b. Reach 5A

- (1) River bed sediment shall be removed and an Engineered Cap as described below in Section II.B.1.j shall be placed throughout Reach 5A. Sediment removal and subsequent capping shall result in a final grade consistent with the original grade or with modifications, as approved by EPA, considering the principles of Natural Channel Design.<sup>6</sup> Performance of removal and capping shall generally use engineering methods employed from within the river channel or other methods approved by EPA.
- (2) Contaminated soil from eroding riverbanks in Reach 5A shall be removed, generally using engineering methods employed from within the river channel or other methods approved by EPA.

The location of contaminated eroding riverbanks shall be determined using a BANCS model<sup>7</sup> calibrated for the Housatonic River and the collection of additional riverbank soil PCB data. A bank shall be considered contaminated if it contains 5 mg/kg or greater of total PCBs measured in the surficial 0 to 12 inches as the average of three 12-inch cores taken at the toe, midpoint, and top of the bank at a maximum spacing of every 25 feet of linear bank. A bank shall be considered to be erodible if the Bank Erosion Hazard Index (BEHI) and Near Bank Stress (NBS) rating is

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<sup>6</sup> Natural Channel Design methods are described in Chapter 11, Rosgen Geomorphic Channel Design, of the Stream Restoration Handbook (Part 654) and in the Natural Channel Design Review Checklist Manual.

<sup>7</sup> A description of the BANCS or "Bank Assessment for Non-point source Consequences of Sediment" model can be found at [http://water.epa.gov/scitech/datait/tools/warsss/pla\\_box08.cfm](http://water.epa.gov/scitech/datait/tools/warsss/pla_box08.cfm) and in the River Stability Field Guide, David Rosgen, copyright 2008 by Wildland Hydrology.

classified in the BANCS model as “Moderate-High” or greater, at the same transect location as the PCB samples. The Permittee shall complete bank excavation for the Thiessen polygon<sup>8</sup> representing the sample transect that is contaminated and eroding.<sup>9</sup>

- (3) Excavated riverbanks shall be reconstructed to minimize erosion, considering the principles of Natural Channel Design, to result in a channel that is in dynamic equilibrium, balances flow and sediment loads, and reduces erosive forces. This will allow the maximum use of bioengineering methods in restoring riverbanks. Riverbank reconstruction shall follow a hierarchy of approaches as follows, with (a) being the most preferred:
  - (a) Reconstruct disturbed banks with solely bioengineering restoration techniques;
  - (b) Reconstruct disturbed banks with an Engineered Cap extending into the riverbank placed under a bioengineering layer; or
  - (c) Place rip-rap cap or hard armoring on residual surface of banks (e.g., where needed for protection of adjacent infrastructure).
- (4) The location of soil excavated per this Section II.B.1.b shall be determined based on the collection of the additional bank soil PCB data and bank erosion/shear stress data.

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<sup>8</sup> Thiessen polygon method is described in Technical Attachment E of Appendix E to the Consent Decree.

<sup>9</sup> EPA’s May 2012 status report entitled “Potential Remediation Approaches to the GE-Pittsfield/Housatonic River Site ‘Rest of River’ PCB Contamination” (the Status Report) highlighted the objectives of addressing the unacceptable risks posed by PCBs and of minimizing the amount of bank excavation to preserve the dynamic character and related biodiversity and habitats of the river. To that end, the Status Report proposed a remedial approach that, based on data collected prior to the issuance of the Permit, would result in an amount of bank excavation in Reach 5A of 3.5 miles, and an amount of bank excavation in Reach 5B of 0.2 miles. The actual remediation amounts will be determined during remedial design pursuant to the process described herein. If the new data to be collected identifies the need for greater bank excavation, then the foregoing amounts of bank excavation will change based on new data. Consistent with the remedial approach identified in the Status Report, the corrective measures for the riverbanks will be designed and implemented to achieve the Performance Standards while minimizing impacts on river dynamics and other ecological processes, and on the abundance of state-listed and other wildlife species and the diversity of their habitats that are supported by the existing river ecosystem.

c. Reach 5B

- (1) Four cores (thalweg, center, left, right) shall be collected from the surficial 0 to 12 inches of the river bed along transects at a spacing of every 25 linear feet of river channel. The river bed sediment in the Thiessen polygon for each sample  $\geq 50$  mg/kg shall be removed and backfilled. The backfill shall consist of material with characteristics similar to existing sediment and placed to original grade. Subsequent to excavation and backfill, Enhanced Monitored Natural Recovery (Enhanced MNR) shall be implemented throughout Reach 5B. Activated carbon shall be placed in Reach 5B to reduce the bioavailability of the remaining PCBs in the sediment bed, unless EPA approves of an alternative sediment amendment. The application method and specific amendment shall be the subject of a Pilot Study to determine the most effective approach.
- (2) The riverbank soil in a Thiessen polygon represented by a transect with a concentration exceeding 50 mg/kg total PCBs in any of three samples (bottom, midpoint, or top of the riverbank) collected from the surficial foot of the riverbank at an interval of 25 feet of linear bank shall be removed, and disturbed banks shall be reconstructed using bioengineering methods, as specified in Section II.B.1.b.(3)(a), to minimize erosion and reduce downstream transport of the residual PCBs in bank soil (see footnote 9).
- (3) The location of soil and sediment excavated per this subsection shall be determined based on the collection of the additional bank soil and sediment PCB data.

d. Reach 5C

River bed sediment shall be removed and an Engineered Cap as described below in Section II.B.1.j shall be placed throughout Reach 5C. River bed sediment shall be removed, generally using engineering methods employed from within the river channel with either dredging or wet excavation techniques to be approved by EPA. Sediment removal and subsequent capping shall result in a final grade consistent with the original grade or with modifications, as approved by EPA, considering the principles of Natural Channel Design.

- e. Backwaters adjacent to Reaches 5, 6, and 7
- (1) Permittee shall propose in a Pre-Design Investigation Work Plan (see Section II.B.11.c. below) additional sampling for PCBs in sediment, and a method for averaging surface and subsurface PCB concentrations using a 50-foot grid.
  - (2) For contaminated sediment in the portions of Backwaters located outside of Core Area 1 Priority Habitat (shown in Attachment B):
    - (a) For surface sediment (0- to 12-inch depth): remove sufficient sediment, including any areas exceeding 50 mg/kg PCBs, and replace with a contiguous Engineered Cap to achieve a spatially-weighted average concentration of 1 mg/kg PCBs in each averaging area. When calculating post-remediation surficial spatially-weighted average concentrations, a PCB concentration equal to 1% of the existing average surficial concentration shall be used as the PCB concentration in capped areas.
    - (b) For subsurface sediment: in areas outside the footprint of the Engineered Cap necessary to meet the requirements in Section II.B.1.e.(2)(a) above, remove sufficient sediment and replace with a contiguous Engineered Cap(s) to achieve a spatially-weighted average concentration of 1 mg/kg PCBs in subsurface sediment in each averaging area. For areas beneath an Engineered Cap, a PCB concentration equal to 1% of the existing average surficial concentration shall be used as the PCB concentration in spatial-weighting calculations.
    - (c) In lieu of the provisions in Sections II.B.1.e.(2)(a) and II.B.1.e.(2)(b) above, Permittee may propose to excavate sediments, including any areas exceeding 50 mg/kg PCBs, to achieve a spatially-weighted average concentration of 1 mg/kg PCBs in surface sediment (0- to 12-inch depth) and subsurface sediment in each averaging area. The placement of backfill shall not be factored in the spatially-weighted averaging calculations.
    - (d) All backfilling or capping shall result in a final grade consistent with the original grade.

- (3) In the portions of Backwater areas located within Core Area 1 habitat with discrete total PCB concentrations  $\geq 50$  mg/kg in surficial (0- to 12-inch) sediment, the sediment in the Thiessen polygon for each sample  $\geq 50$  mg/kg shall be removed to a depth of 1 foot followed by placement of an Engineered Cap to original grade.
  - (4) The Permittee shall evaluate the placement of an amendment such as activated carbon and/or other methods to reduce the bioavailability of contamination in areas defined as Core Area 1 habitat where total PCB concentrations are between 1 mg/kg and 50 mg/kg in the surficial 0 to 12 inches of sediment. The evaluation may include a Pilot Study. The Permittee shall submit this evaluation, along with the proposed action, to EPA for review and approval. The Permittee shall implement such actions as approved by EPA.
  - (5) The location of sediment excavated per this subsection shall be determined based on the collection of additional PCB data on a 50-foot sample grid.
- f. Woods Pond (Reach 6)
- (1) Sediment shall be removed throughout the pond and an Engineered Cap shall be placed over residual PCBs to result in a post-capping minimum water depth of 6 feet measured from the crest of the dam, except in near-shore areas where the slope from the shore to the 6-foot water depth shall be as steep as possible, while also being stable and not subject to erosion or sloughing. In areas deeper than 6 feet prior to remediation, sufficient sediment shall be removed to allow for the placement of an Engineered Cap so that the final grade is equal to or deeper than the original grade.
  - (2) If, during long-term monitoring following construction, EPA determines that significant concentrations and depths of PCB-contaminated sediment have accumulated above the Engineered Cap in Woods Pond, the Permittee shall remove such accumulated sediment while ensuring the integrity of the Engineered Cap.
- g. Columbia Mill Impoundment (Reach 7B), Eagle Mill Impoundment (Reach 7C), Willow Mill Impoundment (Reach 7E), and Glendale Impoundment (Reach 7G).

In these areas, the Permittee shall:

- (1) Propose in Work Plans separate averaging areas within each Impoundment, additional sampling for PCBs, and a method for averaging surface and subsurface PCB concentrations using a 50-foot grid. This plan shall include characterization for the three options in Section II.B.1.g.(2), (3), and (4) below. The submission of a Work Plan(s) for Reaches 7B and 7C shall be expedited per Section II.B.11.a.
- (2) Coordinate with any entity planning to use, maintain, or remove any Reach 7 dam or Impoundment. Such coordination shall include good-faith efforts to reach agreement with that entity(ies) on the scope and extent of costs attributable to the presence of PCBs in sediment and prompt payment by Permittee of these costs in advance of implementation of the necessary work on the dam or Impoundment once necessary approvals, including any necessary approval by EPA under this Permit, have been received. Such sediment-related costs attributable to the presence of PCBs may include, but are not limited to, increased costs of sediment sampling and analysis to assess the presence of PCBs, materials handling, engineering controls, disposal, or compliance with other regulatory obligations related to PCBs in sediment. Sediments requiring removal under this paragraph shall include soil or sediment that could be mobilized downstream as part of dam removal or maintenance activities and sediments greater than 1 mg/kg total PCBs in the river bed. For any floodplain area created as a result of dam removal (former impounded areas exposed due to removal of a dam), Permittee shall follow the process outlined in Section II.B.7.c.(7) (Future Use Scenarios for All Floodplain Areas).<sup>10</sup>
- (3) If there are no plans for dam removal at the time the Conceptual Remedial Design/Remedial Action Work Plan for the specific subreach is required to be submitted in

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<sup>10</sup>In addition to the requirements outlined above, at the time that the dam removal work is anticipated, EPA expects that there will be an agreement in place that, among other things, will ensure that the planned dam removal and sediment removal are conducted in accordance with applicable legal requirements, and that will ensure EPA review and approval of work plans and oversight of the sediment removal work.

accordance with Section II.B.11, the Performance Standards provided below shall apply:

- (a) For surface sediment (0- to 12-inch depth): remove sufficient sediment, including any areas exceeding 50 mg/kg PCBs, and replace with a contiguous Engineered Cap to achieve a spatially-weighted average concentration of 1 mg/kg PCBs in surface sediment in each averaging area. When calculating post-remediation surficial spatially-weighted average concentrations, a PCB concentration equal to 1% of the existing average surficial concentration shall be used as the PCB concentration in capped areas.
  - (b) For subsurface sediment: for areas outside the footprint of the Engineered Cap necessary to meet the requirements in Section II.B.1.g.(3)(a) above, remove sufficient sediment and replace with contiguous Engineered Cap(s) to achieve a spatially-weighted average concentration of 1 mg/kg PCBs in subsurface sediment in each averaging area. For areas beneath an Engineered Cap, a PCB concentration equal to 1% of the existing average surficial concentration shall be used as the PCB concentration in spatial-weighting calculations.
  - (c) Engineered Capping shall result in a final grade consistent with original grade.
- (4) In lieu of the provisions in Section II.B.1.g.(3) above, Permittee may propose to excavate sediments, including any areas exceeding 50 mg/kg PCBs, to achieve a spatially-weighted average concentration of 1 mg/kg PCBs in surface sediment (0- to 12-inch depth) and subsurface sediment in each averaging area. Backfilling may be required to ensure channel stability; however, the placement of backfill shall not be considered in the spatially-weighted averaging calculations.

h. Rising Pond (Reach 8)

In this Impoundment, the Permittee shall:

- (1) Propose in a Pre-Design Investigation Work Plan (see Section II.B.11.c below) separate averaging areas within the pond, additional sampling for PCBs on a 50-foot grid, and a method for averaging surface and subsurface PCB concentrations.

- (2) For surface sediment (0- to 12-inch depth): remove sufficient sediment, including any areas exceeding 50 mg/kg PCBs, and replace with a contiguous Engineered Cap to achieve a spatially-weighted average concentration of 1 mg/kg PCBs in surface sediment in each averaging area. When calculating post-remediation surficial spatially-weighted average concentrations, a PCB concentration equal to 1% of the existing average surficial concentration shall be used as the PCB concentration in capped areas.
- (3) For subsurface sediment: for areas outside the footprint of the Engineered Cap necessary to meet the requirements in Section II.B.1.g.(3)(a) above, remove sufficient sediment and replace with contiguous Engineered Cap(s) to achieve a spatially-weighted average concentration of 1 mg/kg PCBs in subsurface sediment in each averaging area. For areas beneath an Engineered Cap, a PCB concentration equal to 1% of the existing average surficial concentration shall be used as the PCB concentration in spatial-weighting calculations.
- (4) Engineered Capping shall result in a final grade consistent with original grade.
- (5) In lieu of the provisions in Sections II.B.1.h.(2), (3), and (4) above, the Permittee may propose to excavate sediments, including any areas exceeding 50 mg/kg PCBs, to achieve a spatially-weighted average concentration of 1 mg/kg PCBs in surface sediment (0- to 12-inch depth) and subsurface sediment in each averaging area. Backfilling may be required to ensure channel stability; however, the placement of backfill shall not be considered in the spatially-weighted averaging calculations.

i. Flowing Subreaches in Reach 7 and Reaches 9 Through 16

Monitored Natural Recovery (MNR) shall be implemented in these reaches. Institutional Controls and Baseline and Long-Term Monitoring of PCB concentrations in affected media (including surface water, sediment, and biota) shall be conducted in these reaches. See Sections II.B.4 and II.B.7 below.

j. Engineered Cap Design

In-situ Engineered Caps are intended to physically isolate contaminated sediments from potential ecological and human receptors, and minimize the transport of PCBs from the sediment beneath the caps to the bioavailable surface layer and the water

column, consistent with the principles presented in EPA's *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (EPA, 2005) and *Guidance for In-Situ Subaqueous Capping of Contaminated Sediments* (Palermo et al., 1998).

Engineered Cap designs generally specify mixing, chemical isolation, filter, erosion protection, and habitat layer(s). They also may specify the inclusion of an amendment such as activated carbon (AC) where necessary to minimize the flux of PCBs. Under some circumstances, a single layer of material may serve more than one purpose in achieving the Performance Standards below. Engineered Cap design must also take into account constructability concerns (e.g., placement tolerances, method of construction).

The Permittee shall apply the following Performance Standards in designing all Engineered Caps constructed as part of the corrective measures:

(1) Mixing Layer

The mixing layer shall be thick enough to prevent contamination of the chemical isolation layer due to mixing with underlying contaminated sediment during cap placement, taking into account geotechnical considerations, placement techniques, and other factors as appropriate.

(2) Chemical Isolation Layer

- (a) Modeling of the isolation layer shall be performed in general accordance with EPA's *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (EPA, 2005) and *Guidance for In-Situ Subaqueous Capping of Contaminated Sediments* (Palermo et al., 1998).
- (b) Modeling shall be conducted using site-specific data collected during the design process, as appropriate.
- (c) Modeling shall consider the processes of advection, diffusion, sorption, bioturbation, and exchange with the surface water, and sediment deposition consistent with current state-of-the practice for cap design.
- (d) Modeling shall be used to determine the thickness and composition (i.e., the amount of activated carbon/total organic carbon (TOC) or equivalent

sorptive amendment) of the chemical isolation layer sufficient to minimize (reduce by 99%) the flux of PCB concentrations through the isolation layer.

(3) Erosion Protection Layer

- (a) The stable particle sizes necessary to resist the erosive forces in the different reaches of the Housatonic River shall be computed consistent with EPA's *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (EPA, 2005) and *Guidance for In-Situ Subaqueous Capping of Contaminated Sediments* (Palermo et al., 1998), or other pertinent EPA or U.S. Army Corps of Engineers (USACE) guidance.
- (b) The design flow event for the erosion protection layer is a flow event up to and including the 100-year return interval event. However, consideration shall also be given during the cap design to the potential impact of climate change on cap performance, and including appropriate measures to mitigate the potential impacts.
- (c) Site-specific data and modeling will be used to determine the design velocities and associated bed shear stresses associated with various flow events.
- (d) In addition, other potential erosional forces, including, but not limited to, bioturbation, wind-generated waves, debris, motor boat wakes, and ice impacts will be considered.

(4) Geotechnical Filter Layer

The use of a geotechnical filter layer between the chemical isolation layer material and erosion protection layer material shall be evaluated and may be necessary for those areas requiring cobble or larger sized material in the erosion protection layer.

(5) Bioturbation Layer

The assemblage of species, bioturbation depth profile, and abundances of dominant organisms shall be evaluated to determine the need for and thickness of a bioturbation layer to be included.

(6) Habitat Layer

Engineered Caps shall include a habitat layer that provides functions and values equivalent to the pre-existing surficial sediment substrate.

(7) Other Design Considerations

- (a) Installation of the cap shall not result in a loss of flood storage capacity, and there shall be no increase in water surface elevations or velocities.
- (b) The geotechnical stability of the caps (e.g., bearing capacity, slope stability, ebullition) shall be evaluated.
- (c) The need for over-placement allowances with additional excavation for each layer shall be considered.
- (d) Engineered Caps shall be inspected, monitored, and maintained to ensure long-term protectiveness and to ensure that they continue to function as designed.

2. Floodplain and Vernal Pools

a. Floodplain Soil Adjacent to Reaches 5 through 8

For each Exposure Area (see Figures 3 and 4), excavate the top 12 inches of soil to achieve either the Primary or Secondary Cleanup Standards (which are both Performance Standards) contained in Table 1, as prescribed below. In addition, for each Frequently Used Subarea (shown in Figure 5), excavate and replace the top 3 feet of soil to achieve the Cleanup Standards presented in Table 2. Disturbed areas shall be restored pursuant to Section II.B.3. The Permittee shall achieve these Cleanup Standards in accordance with the following procedures:

- (1) The Permittee shall conduct additional sampling of Floodplain soil (as needed) to confirm the total PCB concentration and the exposure point concentration (EPC) for each Exposure Area using a Thiessen polygon approach.
- (2) The Permittee shall design a remediation plan based on meeting Primary Cleanup Standards for each Exposure Area and each Frequently Used Subarea using the following approach:

- (a) Remediation in Frequently Used Subareas to attain Primary Cleanup Standards in these subareas;
  - (b) A proposal for avoidance of Core Area 1 habitat for exposure areas other than Frequently Used Subareas, except in limited areas to meet Secondary Cleanup Standards<sup>11</sup> ;
  - (c) A proposal for minimization on a case-by-case basis<sup>12</sup> for Core Areas 2 and 3 (as shown in Attachment B); however, at a minimum, Secondary Cleanup Standards shall be attained.
- (3) Based on the outcome of Section II.B.2.a.(2) above, EPA shall identify any modification to areas proposed to be avoided, and the Permittee shall recalculate the EPC, to ensure that the resultant excavation plan meets, at a minimum, Secondary Cleanup Standards in the Exposure Area as a whole.
  - (4) To the extent that Secondary Cleanup Standards are not met in the Exposure Area as a whole, the Permittee shall propose additional areas to be excavated in order to meet, at a minimum, Secondary Cleanup Standards in the Exposure Area as a whole, repeating the steps in Sections II.B.2.a.(2) and II.B.2.a.(3) as needed.
  - (5) In conjunction with the steps in Sections II.B.2.a.(2) through II.B.2.a.(4), the Permittee shall also evaluate the presence of any areas of remaining PCB concentrations in Floodplain soil for erosion potential and the likelihood of future downstream transport at concentrations that could result in the exceedance of the Biota Performance Standard and the Downstream Transport Performance Standard specified in Section II.B.1.a. The Permittee shall

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<sup>11</sup> For example, a portion of Exposure Area (EA) 10 identified by the Commonwealth as a Core Area 1 habitat that should be avoided, while portions of Core 1 areas in EAs 19, 37a, and 62 could be excavated to meet Performance Standards. Other case-by-case determinations will be made by EPA in consultation with the States.

<sup>12</sup> Minimization of impacts from remediation of floodplain and vernal pool soil in Core Area 2 and 3 habitat means the implementation of a range of best construction practices that includes, but is not limited to, minimizing impacts when determining the location and scale of staging areas and access roads, phasing the work, use of time of year restrictions, tracking and/or exclusion of animals from work areas, plant transplantation. Minimization of impacts may also include the avoidance of remediation in certain areas where, e.g., the impact to state-listed species or their habitats of constructing an access road or a staging area to remediate such areas outweighs the benefits of remediation. GE may propose areas to avoid excavating based on this concept; however, final approval of any avoidance in Core Area 2 and 3 habitats will be made by EPA, after consultation with the States.

reevaluate, as needed, any area of proposed floodplain soil remediation, considering the erosion potential and the steps in Sections II.B.2.a.(2) through II.B.2.a.(4) above, and shall propose further action as necessary to reduce downstream transport of PCBs.

The Permittee shall submit the revised evaluation to EPA. Upon approval, disapproval, or modification by EPA, the Permittee shall implement the required actions.

b. Vernal Pools Adjacent to Reaches 5 Through 8

In addition to any remediation conducted in Vernal Pools in order to meet the Floodplain Cleanup Standards in II.B.2.a above, the Permittee shall implement the following:

- (1) The Permittee shall submit a plan to EPA and, upon approval, conduct one or more site visits to identify potential Vernal Pools. EPA, in consultation with the Commonwealth, will make the determination as to what constitutes a Vernal Pool.
- (2) The Permittee shall conduct additional sampling and characterization of Vernal Pools, to generate baseline data on the concentrations of total PCBs and health/abundance of animal species, including, but not limited to, state-listed species. The Permittee shall also conduct additional field reconnaissance as needed to quantify the potential effects of remediation of the Vernal Pools on any state-listed species. The Permittee shall conduct the above actions in accordance with a work plan approved by EPA, after consultation with the Commonwealth.
- (3) The Permittee shall identify vernal pools that exceed the Vernal Pool-specific soil/sediment Cleanup Standard of 3.3 mg/kg total PCBs (based upon risk to amphibians).
- (4) For Vernal Pools identified as requiring cleanup solely to meet the Vernal Pool-specific Cleanup Standard, EPA, after consultation with the Commonwealth, will make case-specific remedial decisions (including traditional excavation/restoration, alternative remedial strategies, deferment of remediation, and preservation of existing conditions) weighing field evidence of species health/abundance with the Vernal Pool-specific Cleanup Standard using the following approach:

- (a) EPA will select an initial number of approximately 8 to 10 pools for remediation by traditional means (excavation and reconstruction); pools within Core Area 1 habitat will be excluded from consideration from this initial set of Vernal Pools.
  - (b) EPA will select an initial number of additional Vernal Pools for pilot testing of an amendment such as activated carbon in lieu of excavation.
  - (c) EPA will select an initial number of additional Vernal Pools for pilot testing by a third remediation method to be proposed by the Permittee for EPA approval and/or additional pools to be monitored concurrently with remediated Vernal Pools as a “reference” group for comparison purposes.
  - (d) EPA will identify performance metrics and evaluation criteria to be used for comparison of the various remediation approaches. This will be coordinated with the requirements specified under Section II.B.3 below.
- (5) The Permittee shall complete the initial round of Vernal Pool remediation referenced above in Sections II.B.2.c.(4)(a) through II.B.2.c.(4)(d) and submit to EPA an evaluation of the success of remediation and restoration of each method.
- (6) Based on the evaluation of the initial round of Vernal Pool remediation and restoration and taking into the consideration the Core Area habitat, EPA, after consultation with the Commonwealth, will determine the preferred method/approach for remediation of each subsequent Vernal Pool and the Permittee shall implement this approach. In considering the Core Areas, the following approach will generally be used:
- (a) Avoidance of excavation in Vernal Pools within Core Area 1 habitat areas; and
  - (b) Minimization of impacts from remediation on a case-by-case basis for Core Areas 2 and 3.
3. Restoration of Impacted Areas

The Permittee shall conduct the following activities as components of a program that addresses the occurrence of state-listed species/habitat and

wetland habitat, the impacts of the corrective measures on the species and habitats, and the restoration of habitats in the areas affected by the corrective measures.

Either EPA or the Permittee may propose that select components of these Restoration Performance Standards be addressed independently prior to the development of the SOW.

- a. Perform a baseline assessment of pre-remediation conditions, functions, and values of river bottom, bank, Backwater, Floodplain, Impoundment, and vernal pool habitat, and the occurrence of state-listed species in the areas affected by corrective measures. This Baseline Restoration Assessment (BRA) shall include, but not be limited to:
  - (1) Identification of the presence and location of specific habitat types, including delineation of existing wetlands;
  - (2) Identification of the presence, location, abundance, and condition of state-listed species/habitat and other representative species;
  - (3) Identification of the presence, location, abundance, and condition of invasive species;
  - (4) Evaluation of vernal pool locations, hydrology, and species use; and
  - (5) Characterization of physical/biological attributes (e.g., substrate characteristics, water depth, velocity, temperature, elevation/bathymetry, species composition, density, percent cover, structural components).
  
- b. Develop Restoration Performance Objectives and Evaluation Criteria (RPOEC) to guide the design, remediation, restoration construction, implementation of corrective measures, and evaluation of restoration success. The RPOEC shall include, but not be limited to:
  - (1) Definition of restoration objectives, including without limitation:
    - (a) While achieving the Performance Standards, minimization of the impacts on all ecological resources and habitats, including the riverbanks and floodplain, resulting from the implementation of the corrective measures;

- (b) Restoration of all ecological resources and habitats, including the riverbanks and floodplain, impacted as a result of implementing the corrective measures;
  - (2) Identification of measurable evaluation criteria and applicable methods or specifications, including, without limitation, criteria and methods or specifications for evaluating the success in achieving the restoration objectives developed pursuant to Section II.B.3.(b)(1);
  - (3) Identification of stakeholder concerns;
  - (4) Preliminary Monitoring Program;
  - (5) Preliminary Maintenance Program; and
  - (6) Specification of corrective measures and circumstances.
- c. Develop a Restoration Corrective Measures Coordination Plan (RCMCP) to be performed during the implementation of the corrective measures. This RCMCP shall include, but not be limited to:
- (1) Integration of restoration activities with remediation activities (e.g., locations of access roads/staging areas, harvesting of material for subsequent use in restoration construction, habitat layer characteristics, bank stabilization methods, construction of bed/bank interface);
  - (2) Timing/phasing of remediation activities;
  - (3) Identification of restoration specialists, roles, and responsibilities;
  - (4) Specification of pre-construction preparation requirements (e.g., installation of silt fence or other protective/exclusion measures, propagation of materials, monitoring/relocation/propagation of species, field delineation of species occurrences/vernal pool boundaries); and
  - (5) Specification of protocols to be implemented prior to and during construction to minimize impacts to state-listed species, including elements discussed above as well as other measures such as seed-banking, transplanting, wildlife exclusion barriers, and turtle tracking.

- d. Design a Restoration Plan (RP) to return, to the extent feasible and consistent with the remediation requirements, the functions, values, pre-existing characteristics, species use, and other attributes. This RP shall include, but not be limited to:
  - (1) Identification of materials, sources, and specifications;
  - (2) Development of restoration construction plans;
  - (3) Identification of restoration specialists, roles, and responsibilities;
  - (4) Revised Monitoring Program; and
  - (5) Revised Maintenance Program.
- e. Nothing in Section II.B.3 shall be construed or deemed to satisfy the separate net benefit mitigation standard in the Massachusetts Endangered Species Act (MESA). See Section II.B.9.

4. Operation and Maintenance

a. Baseline and Construction Monitoring

A baseline and construction operations and monitoring program shall be implemented including, but not limited to, the following:

- (1) Prior to the commencement of construction activities, PCB data in surface water, sediment, and biota (and other data) shall be collected to serve as a baseline for the evaluation of the potential impacts of the corrective measures and project operations as well as to inform model parameterization in the model re-evaluation plan.
- (2) The Permittee shall propose a program to minimize adverse impacts of construction activities on the environment (e.g., resuspension) including:
  - (a) Measures to assess these impacts (e.g., establishing notification and action levels for PCBs measured in surface water);
  - (b) A monitoring plan to collect these data; and
  - (c) Establishing response actions (e.g., slowdown and evaluation of operations, stop work and modification of operations, etc.).

This program shall be designed to be consistent with an Adaptive Management framework, as outlined in Section II.B.10.a below.

b. Long-Term Operations, Monitoring, and Maintenance

A long-term operation, monitoring, and maintenance program shall be implemented to evaluate the effectiveness of the corrective measures in achieving Performance Standards, to evaluate MNR, and to conduct maintenance, repair, or other response actions necessary to achieve and maintain compliance with Performance Standards. In addition, the Permittee shall continue these activities necessary to maintain the effectiveness of the corrective measures until the Long-Term Biota Benchmarks have been achieved. This program shall be designed to be consistent with an Adaptive Management framework, as outlined in Section II.B.10.a below.

5. Sequencing Implementation of Corrective Measures

Implementation of the corrective measures shall begin concurrently in Reach 5A (sediment and floodplain) and Woods Pond. Corrective measures shall proceed downstream from Reach 5A and Woods Pond on a parallel track as shown in Figure 6. The final sediment caps in the Impoundments shall not be placed, however, until all remediation in the upstream reaches has been completed. Following the placement of the cap in Reach 7G, sediment removal and subsequent capping shall take place in Rising Pond (Reach 8). This approach shall be subject to review under an Adaptive Management framework to evaluate the effectiveness of sequencing.

If remediation in any part of Reach 7 is performed pursuant to Section II.B.1.g.(2), EPA may require an alternative sequencing to that described above. The corrective measures in the floodplain shall be performed by the Permittee while the adjacent sediment cleanup activities are taking place and shall share construction infrastructure to the maximum extent practicable to minimize the corrective measures footprint.

6. Off-Site Disposal of Contaminated Sediment and Soil

The Permittee shall dispose of all contaminated sediment and soil, as well as other waste material, off-site at existing licensed facilities that are approved to receive such waste material and are in compliance with EPA's off-site rule (40 C.F.R. 300.440.) The Permittee shall maximize the transport of such waste material to off-site facilities via rail.

The Permittee shall comply with Paragraph 41 of the CD.

During the implementation of the corrective measures, the Permittee may propose to EPA for approval innovative treatment technologies as part of Adaptive Management as outlined in Section II.B.10.a below.

7. Institutional Controls and Related Requirements

- a. The Permittee shall maintain biota consumption advisories until the Long-Term Biota Benchmarks are achieved. The Permittee shall cooperate with EPA and the States, and shall prepare, implement, and monitor educational and outreach activities, including the posting of signs, to improve public awareness of the advisories, and shall provide to hunting and fishing license distributors appropriate written notices regarding such advisories to be included with licenses.
- b. For the Housatonic River (including banks), Impoundments, and Backwaters in Reaches 5 through 16, the Permittee shall:
  - (1) Operate, inspect, monitor, and maintain Woods Pond and Rising Pond dams unless sediment concentrations behind the dams are 1 mg/kg total PCBs or less, even if the Permittee transfers ownership interest in the dams. Operation, inspection, monitoring, and maintenance activities shall be designed and implemented to prevent dam failure and unpermitted releases of sediment.
  - (2) Pay for all incremental costs associated with and attributable to the presence of PCBs, unless the Permittee can demonstrate that the PCBs are not attributable to the Permittee, for any legally permissible use that requires sampling, handling, or off-site disposal of sediment with total PCB concentrations greater than 1 mg/kg, including, but not limited to, activities related to dam maintenance or removal, flood management activities, road, infrastructure projects, and activities such as installation of canoe and boat launches, docks, etc., with respect to Reaches 5 through 16 in Rest of River, in any area regardless of whether it has been otherwise addressed by remedies prescribed by this Permit. Such sediment-related costs attributable to the presence of PCBs may include, but are not limited to, increased costs of sediment sampling and analysis to assess the presence of PCBs, materials handling, engineering controls, disposal, or compliance with other regulatory obligations related to PCBs in sediment.
  - (3) To the extent that any dam failure and/or unpermitted release occurs with respect to a dam in Reaches 5 through 16, pay for the costs associated with PCBs.

- (4) If, after completion of remediation, the Permittee or another entity chooses to remove any remaining dam in Reaches 6, 7, or 8, the Permittee shall proceed in accordance with Section II.B.1.(g)(2).
- c. For floodplain soils (inclusive of vernal pools), the Permittee shall, for all properties with data confirming that soil PCB concentrations exceed the Massachusetts Contingency Plan Method 1 S-1 Soil Standards in Massachusetts or the Connecticut Remediation Standard Regulations (RSR) Residential Direct Exposure Criteria in Connecticut, as applicable (see Table 3):
- (1) Prepare and record Environmental Restrictions and Easements (EREs) for properties owned by GE and for properties owned by the Commonwealth that are not protected by Article 97 of the Massachusetts Constitution which restrict soil handling and changes in current uses (e.g., prohibits conversion to agricultural or residential use). Prepare and record Notices of Environmental Restrictions and Easements (Notice EREs) for properties owned by the Commonwealth that are protected by Article 97 of the Massachusetts Constitution. These activities shall be conducted in accordance with Section XIII of the Consent Decree.
  - (2) Offer compensation for an ERE (or equivalent land use restriction) to non-residential property owners where there is reasonable potential for changes in future use to activities such as residential or agricultural. These activities shall be conducted in accordance with Section XIII of the Consent Decree.
  - (3) If the owner declines the ERE offer in Section II.B.7.c.(2) above, implement a formal Conditional Solution whereby the Permittee commits to perform additional response actions in the future, should the property owner commit to change the current use of the property. In addition, the Permittee shall pay for all incremental costs associated with and attributable to the presence of PCBs, unless the Permittee can demonstrate that the PCBs are not attributable to the Permittee, for property owners who elect to remove soil from their property for a legally permissible use.
  - (4) For the portions of residential properties subject to the Residential Floodplain Properties Located Downstream of the Confluence Removal Action Area that were determined

not to be the actual or potential lawn portion of these properties, the Permittee shall implement a Conditional Solution that obligates the Permittee to perform additional response activities, consistent with Section II.B.7.c.(7) below, should the type of use change to a residential exposure scenario or agricultural use. In addition, the Permittee shall pay for all incremental costs associated with and attributable to the presence of PCBs, unless the Permittee can demonstrate that the PCBs are not attributable to the Permittee, for property owners who elect to remove soil from their property for a legally permissible use. Alternatively, the Permittee may purchase all or part of the property and place EREs on the GE-owned property.

- (5) For non-residential properties where there is not a reasonable potential for a change in future use, the Permittee shall pay for all incremental costs associated with and attributable to the presence of PCBs, unless the Permittee can demonstrate that the PCBs are not attributable to the Permittee, for property owners who elect to remove soil from their property for a legally permissible use.
- (6) The Permittee shall conduct inspections every 5 years to determine whether or not property owners have changed the use of a property such that a re-evaluation is required of whether the remedy remains protective of human health and the environment. If so, the Permittee shall inform EPA, and EPA will determine if additional response actions are necessary. In addition, if EPA or the State notifies the Permittee of such conditions outside of the Permittee's 5-year review process and EPA determines that additional response actions are necessary, the Permittee shall conduct such response actions.
- (7) For floodplain areas where the use changes from current use, the Permittee shall:
  - (a) Determine the appropriate exposure scenario from Tables 4 and/or 5.
  - (b) Determine the EPC for the exposure area.
  - (c) Evaluate whether or not the EPC meets the Cleanup Standards in Table 4, where applicable, or the Primary Cleanup Standard listed in Table 5. For non-agricultural future uses, if the EPC exceeds the Primary Cleanup Standard, the Permittee shall

follow the procedures outlined in Section II.B.2.a above to determine if additional response actions are required.

- (d) The Permittee shall submit this evaluation to EPA. Upon approval, disapproval, or modification by EPA, the Permittee shall implement the required actions.

8. Review of Response Actions

In accordance with Paragraph 43 of the CD, the Permittee shall conduct studies and investigations as requested by EPA to permit EPA to conduct periodic reviews, consistent with Section 121(c) of CERCLA and any applicable regulations, of whether Remedial Actions are protective of human health and the environment. The Permittee shall also comply with any additional requirements pursuant to Section X of the Consent Decree with respect to periodic reviews.

9. Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered (TBC) Requirements

The federal and state laws and regulations that constitute applicable or relevant and appropriate requirements (ARARs) for the response actions for Rest of River and To Be Considered (TBC) requirements are identified in Attachment C.

The ARAR tables include a description of the listed ARARs and a determination by EPA as to whether the listed ARARs will be met, any ARARs waived and any modified performance requirements based on EPA's waiver determination, and all TBC requirements.

In addition, the technical Remedial Design/Remedial Action (RD/RA) submittals for response actions for the Rest of River shall, consistent with CERCLA, specify additional ARARs (not listed in such attachment), if any, for such response actions and shall contain a proposal as to how the response action will comply with such additional ARARs or if EPA determines, after reasonable opportunity for review and comment by the States, a waiver is appropriate, any modified performance requirement. The Permittee shall comply with and attain all such additional ARARs that EPA determines should be met by such response action.

10. Other Measures and Requirements

The Permittee shall design, construct, operate, inspect, monitor, and maintain the corrective measures in compliance with all applicable provisions of the CD and Permit (including all technical attachments and submittals thereunder) and in compliance with the Performance Standards

identified therein. This section sets forth a number of general requirements associated with the corrective measures for Rest of River.

a. Adaptive Management

An adaptive management approach shall be implemented by the Permittee in the conduct of the corrective measures to adapt and optimize project activities to account for “lessons learned,” new information, changing conditions, evaluations of the use of innovative technologies, results from pilot studies, and additional opportunities that may present themselves over the duration of the project, including during periodic reviews. The Permittee shall modify the implementation of the corrective measures, with EPA approval, after a reasonable opportunity for review and comment by the States, through this process to minimize the adverse impacts of the response action, expedite the response, improve the corrective measures, and to ensure compliance with, or continued progress towards, achieving Performance Standards.

The Permittee shall perform the corrective measures in accordance with any modifications that are identified by the Permittee (with EPA’s approval), or are required by EPA, including, but not limited to, applying an adaptive management approach to the Rest of River SOW, or any other plans, specifications, schedules, or other documents.

b. Coordination of Corrective Measures

Corrective measures associated with the Rest of River will require a significant level of project scheduling, coordination, and sequencing, which shall be addressed by the Permittee in the Rest of River SOW. As the corrective measures are expected to be implemented in a phased approach, it is expected that the work to be implemented in each phase will have its own set of deliverables, including several of the deliverables identified in Section II.B.11.

c. Water Withdrawals and Uses

The Permittee shall:

- (1) Identify all industrial, commercial and private withdrawals and/or uses of water from the Rest of River;
- (2) Identify requirements associated with these uses (including water quality and quantity) that may be affected by implementation of corrective measures; and

- (3) Propose methods to minimize/mitigate impacts during construction.

11. Requirements for the Rest of River Statement of Work (SOW)

Adherence by the Permittee to the procedures and protocols presented in the plans described below will provide a level of consistency and comparability for the evaluations and response actions conducted for the corrective measures, and will also establish minimum requirements concerning analytical and construction quality assurance, site security, and health and safety, and compliance with ARARs.

The Overall Strategy (see Section II.B.11.b) will present the Permittee's overall strategy for implementing the corrective measures that have been selected by EPA in this Permit, including the preparation of work plans, designs, and reports, completion of pre-design investigations, construction and implementation of the remediation, and long-term operation, maintenance, and monitoring. In addition, the Overall Strategy will describe the Permittee's project organizational structure, roles, and responsibilities, and lines of communication between the Permittee and EPA, and will include the project organization and a project implementation schedule.

As required in Paragraph 22.x of the CD, the Permittee shall submit a Rest of River SOW for the implementation of the corrective measures, including pre-design activities and the subsequent performance of corrective measures. In addition, the contents of the documents required in the SOW are subject to modification or adjustment based on specific activities for a given corrective measure and any site- or activity-specific considerations, including, but not limited to, resulting from an adaptive management approach. If deviations to such documents are proposed for a specific corrective measure, such proposals shall be presented for EPA approval in the technical deliverables specific to that corrective measure.

The SOW shall include a description of, and a submittal schedule for, at a minimum, the following documents:

a. Expedited Deliverables

The Permittee shall submit the following plans for EPA review and approval 30 days after submittal of the SOW:

- (1) Work plan for sampling of Reaches 7B and 7C described in Section II.B.1.g above.
- (2) Baseline Restoration Assessment (BRA) described in Section II.B.3.a above.

- (3) Work plan for Baseline Monitoring described in Section II.B.4.a.(1) above.
  - (4) Work plan for the siting of Sediment Processing/Transfer Facility(ies), including criteria to be used in making siting decision.
  - (5) Work plan for Phase 1B Cultural Resource Survey.
- b. Overall Strategy and Schedule for Implementation of the Corrective Measures
- (1) Coordination of floodplain and sediment remediation;
  - (2) Sequence of remediation;
  - (3) Methods to minimize impact to neighborhoods and general public and to limit use of certain roads; and
  - (4) Project management structure.
- c. Pre-Design Investigation Work Plans
- d. Pre-Design Investigation Summary Reports
- e. Plan for Measuring Compliance with Performance Standards
- f. Conceptual Remedial Design/Remedial Action Work Plans
- g. Final Remedial Design/Remedial Action Work Plans
- h. Supplemental Implementation Plans (e.g., contractor health and safety plans (HASPs), operations plan)
- i. Updated Project Operations Plan and Field Sampling Plan/Quality Assurance Project Plan for Rest of River-specific changes
- j. Sediment Processing/ Transfer Facility(ies) Work Plan:
- (1) Processes to be conducted at centralized facility(ies) for sediment processing and transfer for off-site disposal;
  - (2) Criteria to be used in the siting of sediment processing/transfer facility(ies);
  - (3) Process to coordinate with affected communities regarding the operation of the facility;

- (4) Evaluation of potential sites using the criteria; and
- (5) Development of site-specific construction plans.
- k. Off-Site Transportation Plan
- l. Quality of Life Compliance Plan:
  - (1) Noise, air, odor, light standards;
  - (2) Continued recreational activities;
  - (3) Road use, including restrictions on transport of waste material through residential areas; and
  - (4) Community Health and Safety
    - (a) The Permittee shall maintain a website (similar to <http://www.hudsonredging.com/>) to provide community access to information such as data, technical reports, work plans, and project fact sheets, as well updates on current and future project activities; and
    - (b) The Permittee shall establish and maintain a system to identify and address community complaints and concerns during construction activities.
- m. Pilot Study Proposals
- n. Restoration Plan
- o. Adaptive Management Plan
- p. Sustainability Plan
- q. Cultural Resource Plan
- r. Model Reevaluation Plan
- s. Dam Operation, Inspection and Maintenance Plan
- t. Dam Removal-Related Activities Plan(s), as necessary
- u. Completion of Work Reports

- v. Operation and Maintenance Plan:
  - (a) Baseline and Construction Operations and Monitoring Plan;
  - (b) Long-Term Operation, Monitoring and Maintenance Plan; and
  - (c) Invasive Species Control Plan
- w. Institutional Control Plan
- x. Plan for Further Response Actions, and any implementation of further response actions, in accordance with Section X of the Consent Decree (Review of Response Actions).

C. Schedule

As required under Paragraph 22.x of the CD, whenever the Permittee is required to design and implement the Rest of River remedial action or a portion thereof and the Permit becomes effective, the Permittee shall develop and submit to EPA for review and approval within 7 days, a schedule for the subsequent submission of the SOW. The schedule for the submittal for the SOW shall be no sooner than 90 days from the effective date of the permit. The SOW shall contain schedules for the subsequent development of Remedial Action activities.

D. Project Coordinators

1. Pursuant to the Consent Decree, EPA and the Permittee have each designated a Project Coordinator and an Alternate Project Coordinator.
2. EPA and the Permittee shall provide at least five (5) working days' written notice prior to changing Project Coordinators or Alternate Project Coordinators, unless impracticable but in no event later than the actual day the change is made.
3. The absence of EPA's Project Coordinator shall not be cause for stoppage of work by the Permittee.
4. Unless otherwise specified, reports, notices, or other submissions required under the Permit shall be in writing and shall be sent to:

**EPA's Project Coordinator**  
Rest of River Project Manager  
U.S. Environmental Protection Agency  
EPA New England  
5 Post Office Square Suite 100  
Boston, MA 02109-3912

**EPA's Alternate Project Coordinator**

Dean Tagliaferro  
U.S. Environmental Protection Agency  
EPA New England  
10 Lyman Street  
Pittsfield, MA 01201

**Permittee's Project Coordinator**

Andrew T. Silfer  
General Electric Company  
Corporate Environmental Programs  
319 Great Oaks Boulevard  
Albany, NY 12203

**Permittee's Alternate Project Coordinator**

Alternate Housatonic Rest of River Project Coordinator  
General Electric Company  
Corporate Environmental Programs  
159 Plastics Avenue  
Pittsfield, MA 01201

**Massachusetts Project Coordinators**

Michael Gorski  
Massachusetts Department of Environmental Protection  
436 Dwight Street - Fifth Floor  
Springfield, MA 01103

Mark Tisa  
Massachusetts Department of Fish and Game  
Division of Fisheries and Wildlife  
Field Headquarters, North Drive  
Westborough, MA 01581

**Connecticut Coordinator**

Connecticut Housatonic Rest of River Coordinator  
Planning and Standards Division  
Bureau of Water Management  
Connecticut Department of Energy and Environmental Protection  
79 Elm Street  
Hartford, CT 06103

E. Sampling Requirements

The Permittee shall provide the results of all sampling and/or tests or other data generated by the Permittee or on the Permittee's behalf with respect to the implementation of the Permit to EPA and shall submit these results to EPA, at a minimum, in monthly progress reports.

At the request of EPA, the Permittee shall allow split or duplicate samples to be taken by EPA and/or its authorized representative, of any samples collected by the Permittee or on the Permittee's behalf pursuant to the implementation of this Permit. The Permittee shall notify EPA not less than seven (7) days in advance of any sample collection activity.

EPA will notify the Permittee not less than seven (7) days in advance of any sample collection activity by EPA in connection with the implementation of this Permit. At the request of the Permittee, EPA shall provide to the Permittee, or allow the Permittee to take, split or duplicate samples of any samples collected by EPA or on EPA's behalf in conducting work in the Rest of River area.

F. Reservation of Rights

EPA and the Permittee reserve all rights and defenses that they may have, subject to the provisions of the Consent Decree.

G. Access to or Use of Property

1. To the extent that the work required of the Permittee under this Permit requires access to or use of property currently owned or under the control of persons other than the Permittee, the Permittee shall use its best efforts to obtain access in accordance with the provisions of Paragraph 59.a of the Consent Decree relating to access.
2. Except as otherwise provided in the Consent Decree or this Permit, nothing in this Permit shall be construed to limit EPA's authority to exercise its rights pursuant to Section 3007 of RCRA, 42 U.S.C. 6927, or to affect any rights of entry possessed by EPA pursuant to any applicable laws, regulations, or permits.

H. Dispute Resolution

Resolution of disputes arising from implementation of this Permit shall be resolved consistent with the provisions in the Consent Decree.

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## TABLES

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**Table 1 Cleanup Standards for PCBs for Floodplain Soil by Exposure Area – Current Use**

Exposure Areas	Cleanup Standard (in mg/kg)		Exposure Scenario Basis	
	Primary (RME 10 <sup>-5</sup> / Hazard Index (HI)=1)	Secondary (RME 10 <sup>-4</sup> / HI=1)	Exposure Scenario/Receptor	Assumed Frequency of Use (days per year)
10a, 70, 87	4.6	4.6	General Recreation, young child (high use)	90d/yr
10	4.6	6.9	General Recreation, young child (high use)	90d/yr
2b, 25, 78, 85b	27	27	General Recreation, older child (high use)	90d/yr
3, 11, 13-17, 19, 20, 24, 32, 33, 38, 44-46, 48, 54, 58, 67-69, 73-77, 79, 89	14	38	General Recreation, adult (high use)	90d/yr
2, 4, 5, 7, 12, 21, 22, 26a, 26F, 27, 28, 30, 31, 31a, 35, 35a, 37, 37b, 40, 40b, 55, 57, 59, 60, 90	14	27	General Recreation, adult/older child (high use)	90d/yr
1, 56	21	40	General Recreation, adult/older child (medium use)	60d/yr
23, 88	40	40	General Recreation, older child (medium use)	60d/yr
18, 34, 41, 42, 43	21	58	General Recreation, adult (medium use)	60d/yr
6, 49, 50, 51, 80a, 81, 82, 84	43	115	General Recreation, adult (low use)	30d/yr
2a, 9	80	80	General Recreation, older child (low use)	30d/yr
29	43	80	General Recreation, adult/older child (low use)	30d/yr
37a, 38a, 40a, 41a, 42a, 43a, 59a, 70a, 71,72, 87a	26	42	Bank Fishing adult/older child	30d/yr
22a, 27a, 28a	14	14	Dirt Biking/ATVing (older Child)	90 d/yr
8,47, 47F, 52, 53, 60a, 85a	12	28	Recreational Canoeist	Adult 60 d/yr Older child 30 d/yr

**Table 1 Cleanup Standards for PCBs for Floodplain Soil by Exposure Area – Current Use (Continued)**

Exposure Areas	Cleanup Standard (in mg/kg)		Exposure Scenario Basis	
	Primary (RME 10 <sup>-5</sup> / Hazard Index (HI)=1)	Secondary (RME 10 <sup>-4</sup> / HI=1)	Exposure Scenario/Receptor	Assumed Frequency of Use (days per year)
39	7.8	13	Marathon Canoeist	150d/yr
26b, 36b, 80b	12	43	Agricultural Use (farmer)	40d/yr
36a	89	126	Low-use Commercial (groundskeeper)	30d/yr
83, 86	18	25	High-use Commercial (groundskeeper)	150 d/yr
61-66	169	242	Utility Worker	5 d/yr
50a, 51a, 55a, 56a	90	140	Waterfowl Hunting	14 d/yr

**Table 2 Cleanup Standards for PCBs for Floodplain Soil Frequently Used Subareas – Current Use**

Exposure Area	Primary Cleanup Standard (in mg/kg)	Exposure Scenario Basis	
		Exposure Scenario/Receptor	Assumed Frequency of Use (days per year)
4, 12, 26a, 37b, 40, 58, 59	14	General Recreation, adult/older child (high use)	90 d/yr
39	7.8	Marathon Canoeist	150 d/yr
47, 52, 53, 60a	12	Recreational Canoeist	Adult 60 d/yr Older child 30 d/yr

**Table 3 Cleanup Standards for PCBs for Unrestricted Use – Floodplain and Riverbank Soil**

State	Source/Basis
Massachusetts	Massachusetts Contingency Plan (MCP) S-1 Method 1 Standard, 310 Code of Massachusetts Regulations (CMR) 40.0000
Connecticut	Remediation Standard Regulations (RSR) Soil Standards, Conn. Gen. Stat. 22a-133k-1 through k-3 Appendix A

**Table 4 Cleanup Standards for PCBs for Agricultural Uses in Floodplain Soil**

Because cleanup standards for future agricultural uses are expressed as diet, a formula back-calculating from the dietary concentrations to concentration of PCBs in floodplain soil is necessary for evaluating risk associated with future use of floodplain exposure areas. The calculation has to take into account the risk level for an exposure scenario, the exposure point concentration, and the fraction of the use conducted in the floodplain. The calculation below encompasses these factors.

$$C_t = C_{ea} \frac{R_t F_{ea}}{R_{ea} F_t}$$

where:

- $C_t$  = the target PCB concentration,
- $C_{ea}$  = the known or nominal concentration associated with a calculated risk,
- $R_t$  = the target risk level (HI = 1 or  $10^{-5}$  probabilistic risk),
- $R_{ea}$  = the risk calculated for the known or nominal concentration,
- $F_t$  = fraction in the floodplain for the target EPC, and
- $F_{ea}$  = fraction in the floodplain for the known or nominal EPC.

**Table 5 Cleanup Standards for PCBs for Floodplain Soil - Future Use**

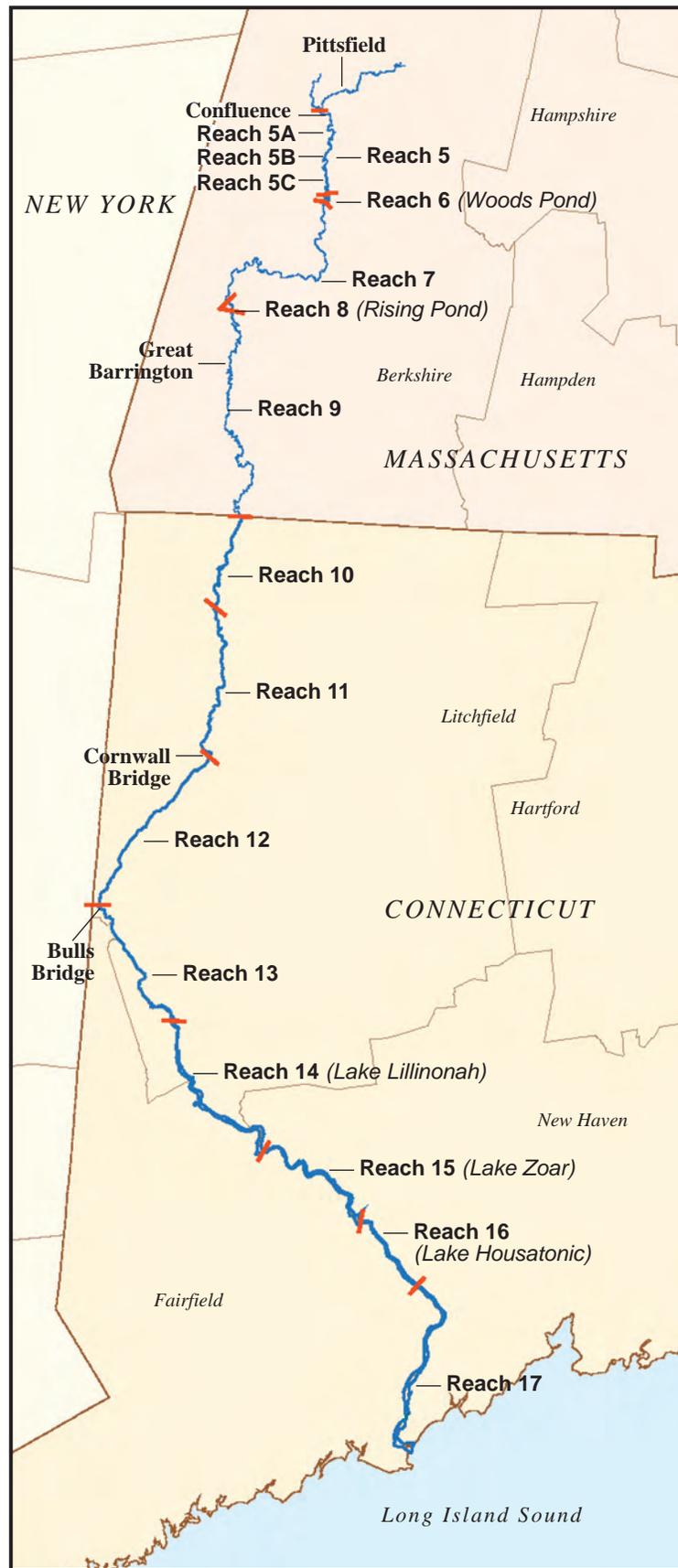
Type of Area/Exposure Scenario	Receptor	Assumed Frequency of Use	Cleanup Standards (in mg/kg)	
			Primary (RME 10 <sup>-5</sup> /HI=1)	Secondary (RME 10 <sup>-4</sup> /HI=1)
Residential	All	All	1	1
General Recreation	Young child	90 d/yr	4.6	4.6
		15 d/yr	27	27
	Older child	90 d/yr	27	27
		60 d/yr	40	40
		30 d/yr	80	80
	Adult	90 d/yr	14	38
		60 d/yr	21	58
30 d/yr		43	115	
Bank fishing	Older child	30 d/yr	42	42
	Adult	30 d/yr	26	56
Dirt biking/ATVing	Older child	90 d/yr	14	14
Marathon canoeist	Adult	150 d/yr	7.8	13
Recreational canoeist	Older child	30 d/yr	42	42
	Adult	60 d/yr	12	28
Waterfowl hunting	Older child	14 d/yr	140	140
	Adult	14 d/yr	90	196
Agricultural use (farmer) (See note)	Adult	40 d/yr	12	43
Commercial (groundskeeper)	Adult	150 d/yr	18	25
		30 d/yr	89	126
Utility worker	Adult	5 d/yr	169	242

Note: Values in this table for agricultural use represent human exposure to soil. For Cleanup Standards representing future agricultural use (protective of exposure through consumption of dietary items grown in the floodplain), see Table 4.

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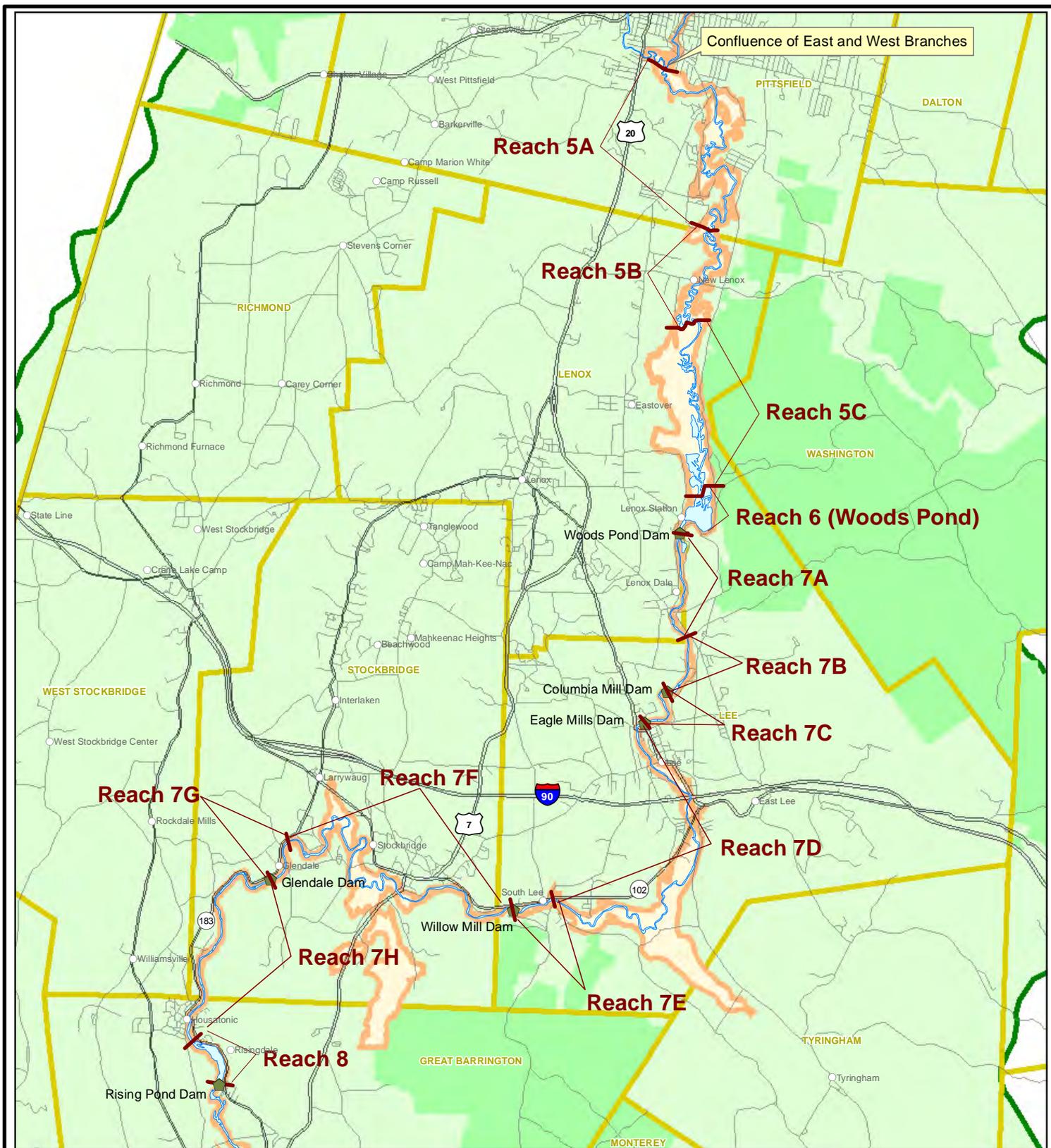
## FIGURES

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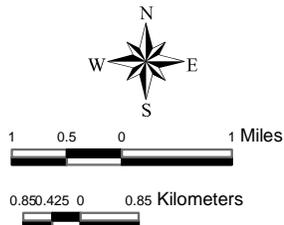
14P-0094-6

**FIGURE 1 HOUSATONIC RIVER, REACHES 5 THROUGH 17**



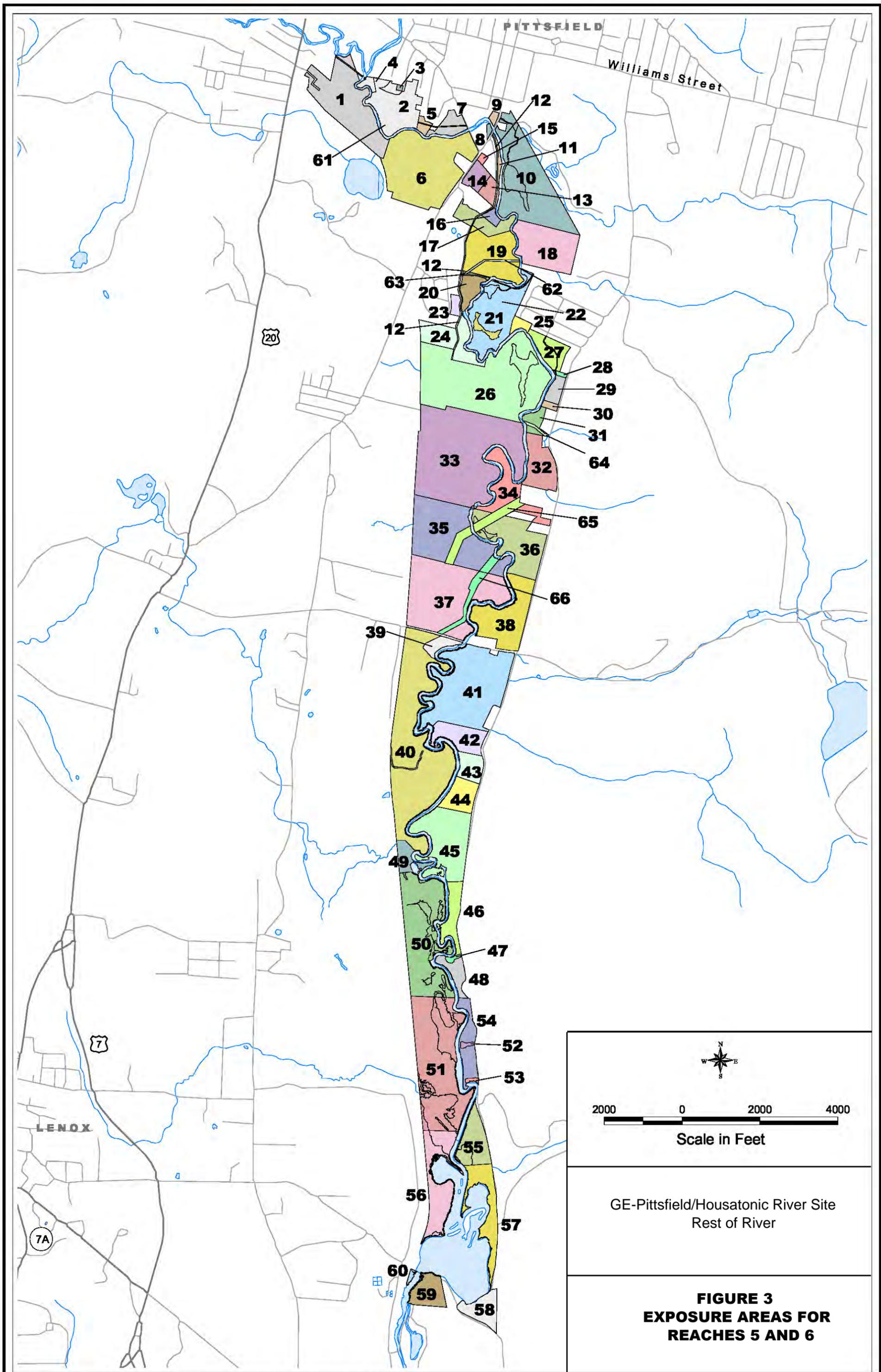
**LEGEND:**

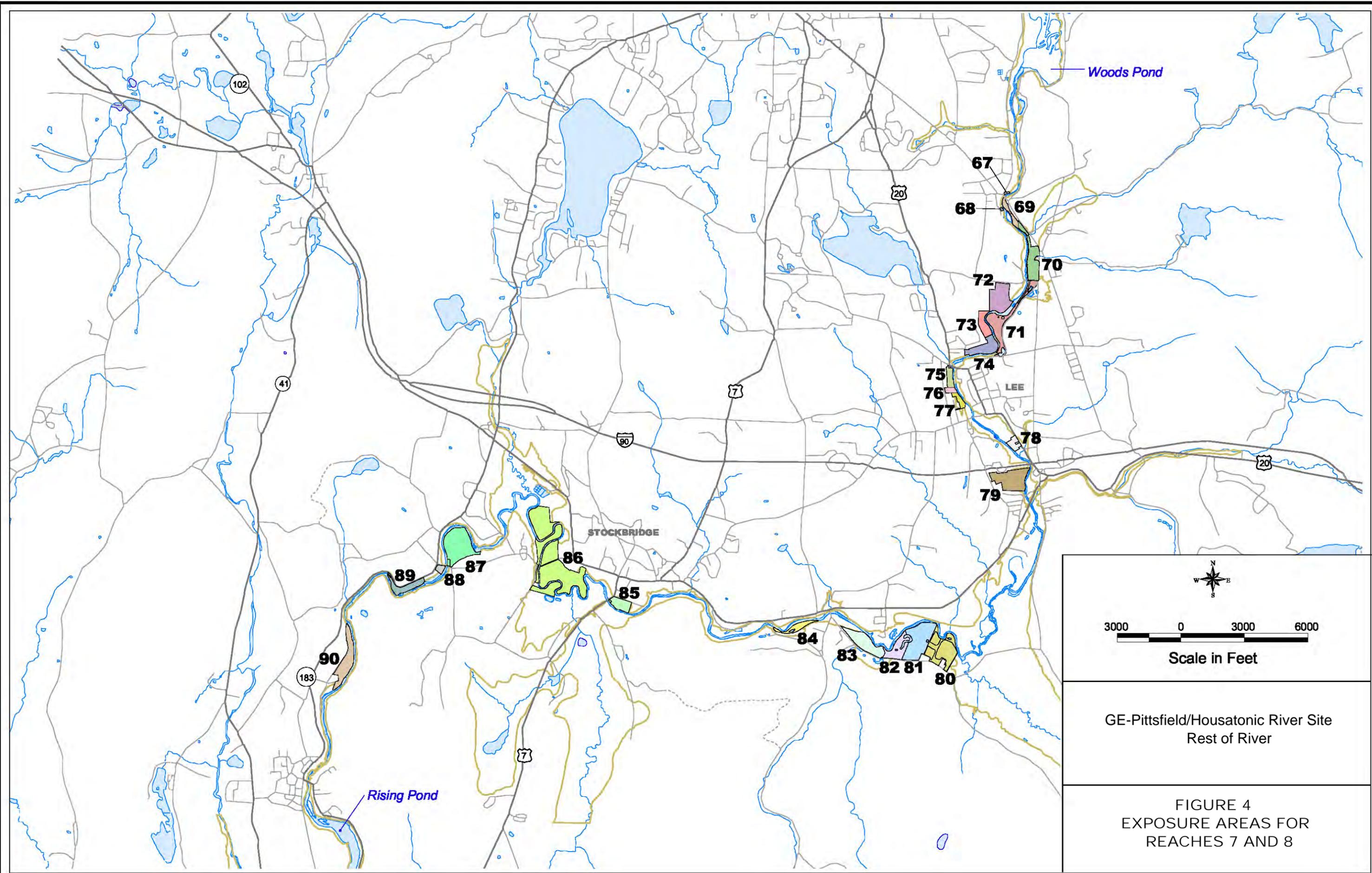
- Town/City
- Roads
- Reach Division Line
- Housatonic River
- State Park
- Municipal Boundary
- 10-Year Floodplain



GE- Pittsfield/Housatonic River Site  
Rest of River

**FIGURE 2**  
**HOUSATONIC RIVER,**  
**PRIMARY STUDY AREA**  
**(REACHES 5 AND 6) AND**  
**REACHES 7 AND 8**

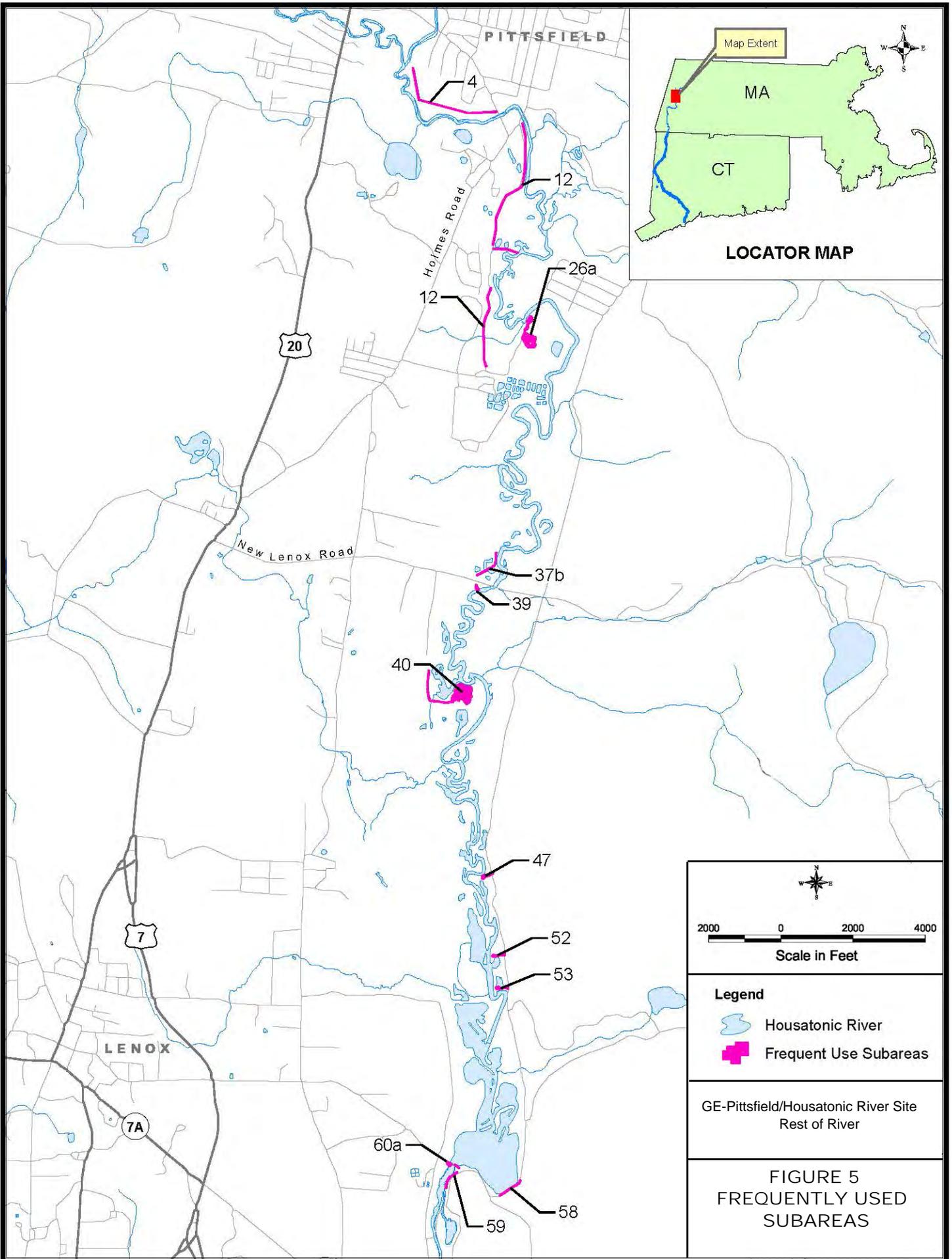


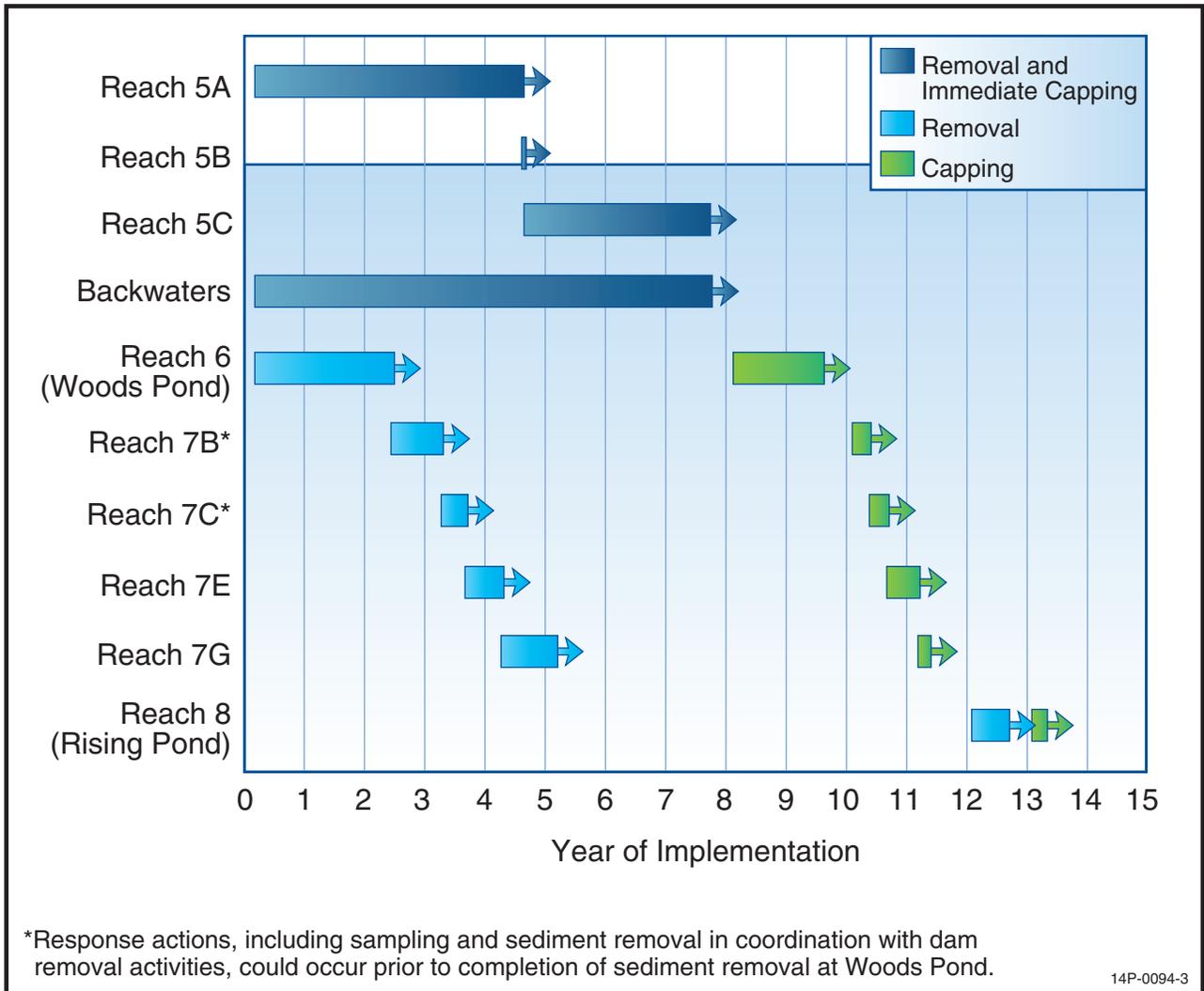


  
 3000    0    3000    6000  
 Scale in Feet

GE-Pittsfield/Housatonic River Site  
 Rest of River

FIGURE 4  
 EXPOSURE AREAS FOR  
 REACHES 7 AND 8



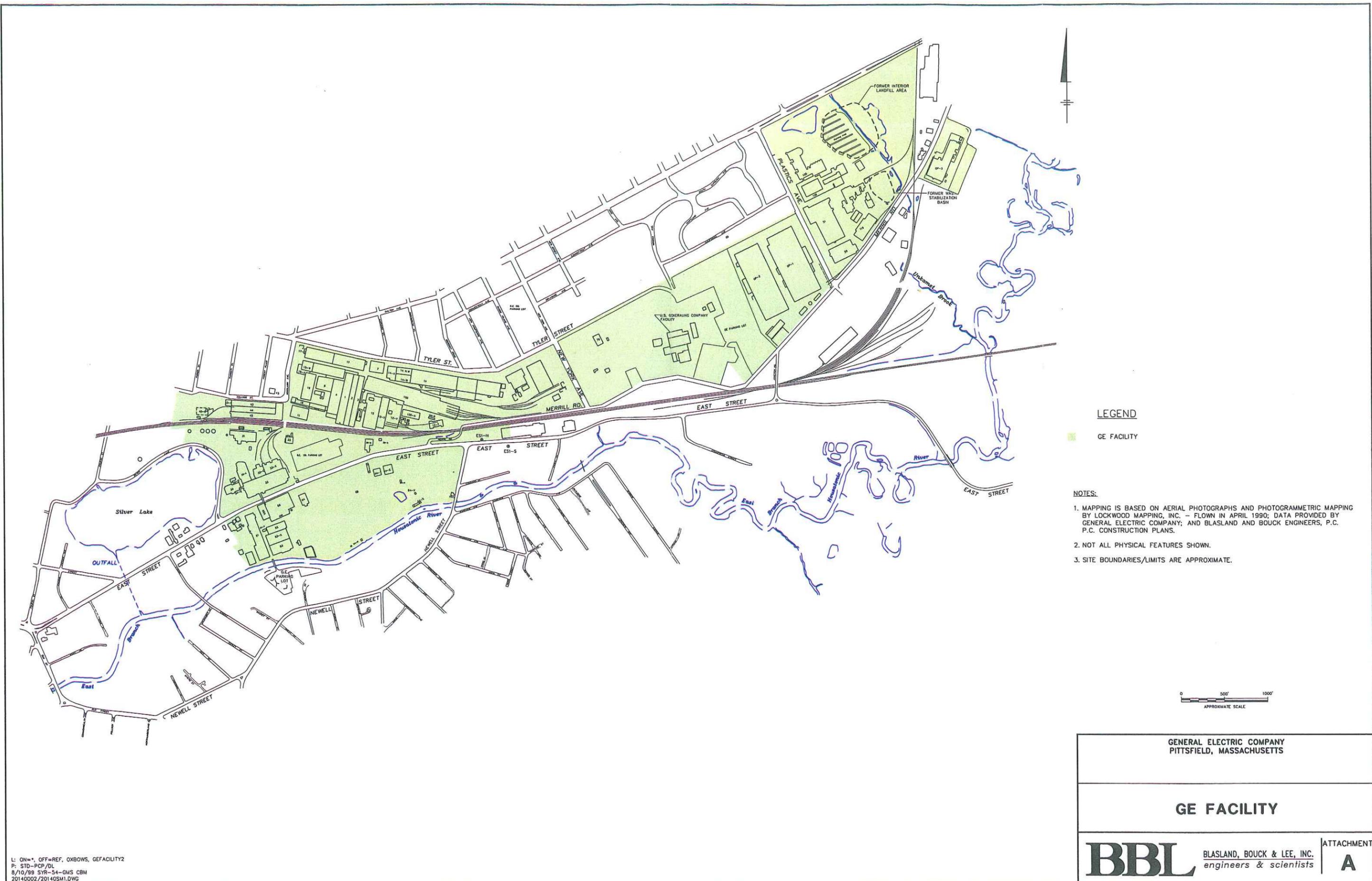


**FIGURE 6 ESTIMATED TIMELINE TO IMPLEMENTATION OF CLEANUP  
GE-PITTSFIELD/HOUSATONIC RIVER SITE  
REST OF RIVER**

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**ATTACHMENT A  
GE FACILITY MAP**

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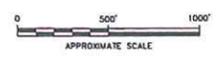


**LEGEND**

GE FACILITY

**NOTES:**

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. - FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY; AND BLASLAND AND BOUCK ENGINEERS, P.C. CONSTRUCTION PLANS.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARIES/LIMITS ARE APPROXIMATE.



GENERAL ELECTRIC COMPANY  
PITTSFIELD, MASSACHUSETTS

**GE FACILITY**

**BBL** BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

ATTACHMENT  
**A**

L: ON=\*, OFF=REF, OXBOWS, GEFACILITY2  
P: STD-PCP/DL  
8/10/99 SYR-54-GUS CBM  
20140002/20140SM1.DWG

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**ATTACHMENT B**  
**MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE CORE**  
**HABITAT AREA FIGURES, HOUSATONIC RIVER PRIMARY STUDY**  
**AREA (PSA), AND JULY 31, 2012 LETTER FROM MASSACHUSETTS**  
**DIVISION OF FISHERIES AND WILDLIFE**

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Commonwealth of Massachusetts

# Division of Fisheries & Wildlife

**MassWildlife**

Wayne F. MacCallum, *Director*

July 31, 2012

Robert G. Cianciarulo, Chief  
Massachusetts Superfund Section  
Office of Site Remediation and Restoration  
EPA New England (OSRR-07-01)  
5 Post Office Square  
Boston, MA 02109-3912

**Re:** Housatonic River, Core Habitat Areas in the Primary Study Area

Dear Mr. Cianciarulo:

As you are aware, the states of Massachusetts and Connecticut have been working cooperatively for the last several months to discuss potential approaches to clean up the Rest of River portion of the GE Housatonic site. These discussions have focused, in part, on the need to address the risks from polychlorinated biphenyls (PCBs) to humans, fish, and wildlife while avoiding, mitigating or minimizing the impacts of the cleanup on the unique ecological character of the Housatonic River. Minimizing impacts to habitat and, in particular, species listed pursuant to the Massachusetts Endangered Species Act, M.G.L. c. 131A ("MESA"), and 321 CMR 10.00 (the "MESA Regulations") presents unique challenges as almost the entire Primary Study Area (PSA) is mapped as Priority Habitat for state-listed species (for a description of Priority Habitat and its regulatory function please see:

[http://www.mass.gov/dfwele/dfw/nhosp/regulatory\\_review/priority\\_habitat/priority\\_habitat\\_home.htm](http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/priority_habitat/priority_habitat_home.htm). Therefore, in order to help identify the most important areas for habitat protection, as well as habitats and species that might be particularly sensitive to impacts from PCB remediation activities, the Massachusetts Division of Fisheries and Wildlife ("DFW") developed maps of "Core Habitat Areas." The purpose of this letter is to provide an overview of the approach we used to identify the Core Areas.

As part of our Priority Habitat mapping process, taxonomic experts from DFW's Natural Heritage & Endangered Species Program ("NHESP") routinely delineate habitat for each state-listed species, based on actual field-documented records, or "occurrences." There are four types of Housatonic Core Areas. Core Areas 1, 2, and 3 represent subsets of the delineated state-listed species habitat found in the PSA. Core Area 4 represents a subset of the documented and potential vernal pool habitat in the PSA. Please refer to the enclosed maps dated May 21, 2012 which depict the locations of these Core Areas, entitled "Core Habitat Areas, Housatonic River Primary Study Area (PSA)", "Core Habitat Areas (Core Area 2), Housatonic River Primary Study Area (PSA)", and "Part of the Housatonic River Showing Primary Study Area, High Species Richness, and Vernal Pools".

**Core Area 1** includes the highest quality habitat for species that are most likely to be adversely impacted by PCB remediation activities (Table 1). As can be seen in Table 1, most of these species are plants that are not mobile, and are very sensitive to the expected effects of soil remediation

[www.masswildlife.org](http://www.masswildlife.org)

Division of Fisheries and Wildlife

Field Headquarters, North Drive, Westborough, MA 01581 (508) 389-6300 Fax (508) 389-7891

*An Agency of the Department of Fish and Game*

activities. Core Area 1 also includes habitat for one state-listed moth species that inhabits mature floodplain forest, one habitat area for the Jefferson's Salamander, and Triangle Floater mussel beds. Some of the plant species found in Core Area 1 are located in floodplain forest, which is not readily restorable and would take decades to return to its current state, if ever. Finally, Core 1 includes areas that are excellent examples of two rare natural communities—High Terrace Floodplain Forest and Black Ash Bur Oak Hemlock Swamp.

**Core Area 2** includes the highest quality habitat for more mobile species that may be less vulnerable to remediation impacts, species where the habitat is likely to be somewhat more easily restored, and listed species that may be of a somewhat lower conservation concern, given their state-wide distribution (e.g. American Bittern; see Table 2). For example, the Mustard White is a Threatened butterfly species of significant conservation concern that uses a mix of natural areas along the river and old field habitat. It may be possible to remediate its habitat in phases, restoring and replacing host plants as the work is completed.

**Core Area 3** includes those areas with dense concentrations of state-listed species. Specifically, Core Area 3 includes areas where Division biologists have delineated overlapping habitat for eight (8) or more state-listed species.

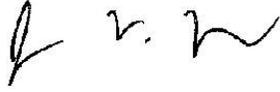
**Core Area 4** includes all certified vernal pools in the PSA as well as additional potential vernal pool habitat areas which, based on information provided by GE and EPA, are likely to meet the Massachusetts criteria for vernal pool certification based on the presence of "obligate" vernal pool breeding amphibians see:

[http://www.mass.gov/dfwele/dfw/nhosp/vernal\\_pools/vernal\\_pool\\_cert.htm](http://www.mass.gov/dfwele/dfw/nhosp/vernal_pools/vernal_pool_cert.htm).

These Core Areas played an important role during recent discussions between the EPA and the states of Massachusetts and Connecticut regarding potential remediation approaches to Rest of River. Consistent with the requirements of MESA and the MESA Regulations, the Core Areas are helping to guide efforts to avoid, minimize and mitigate impacts to state-listed species. Although a final MESA evaluation will not be completed until the remedy design phase, by focusing on the Core Areas, EPA and the Commonwealth believe that a framework has been established to achieve MESA permitting standards of assessing alternatives to both temporary and permanent impacts to state-listed species, and of limiting the impact to an insignificant portion of the local populations of affected species. See 321 CMR 10.23. For example, the parties focused on avoidance of some of the most important and sensitive rare species habitats in Core Area 1. Similarly, in Core Areas 2 and 3, avoidance of impacts when practical, careful consideration of PCB remediation methods and the sequence and timing of remediation activities, as well as after-the-fact habitat mitigation are all approaches that will assist in achieving the substantive requirements of MESA. Although the Core Areas play an important role in guiding avoidance and minimization of impacts to state-listed species, in some cases the "take" of state-listed species is likely to be unavoidable. In those cases, consistent with MESA's status as a location-specific applicable or relevant and appropriate requirement ("ARAR"), the Commonwealth will work with GE and the EPA to minimize impacts and to ensure that an adequate long-term net-benefit mitigation plan for the affected state-listed species is designed and implemented, as required by 321 CMR 10.23(2)(c).

If you have any questions about this letter, please don't hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. R. W.', with a stylized flourish at the end.

Jon Regosin, Ph.D.  
Chief of Conservation Science  
Natural Heritage & Endangered Species Program

Encl.: Table 1. Species and Natural Communities Included in Core Area 1 Delineation  
Table 2. Species and Natural Communities Included in Core Area 2 Delineation

cc: Mark Tisa, MA Division of Fisheries & Wildlife  
Richard Lehan, MA Department of Fish & Game  
Mike Gorski, MA Dept. of Environmental Protection  
Eva Tor, MA Dept. of Environmental Protection  
Traci Iott, CT Dept. of Energy & Environmental Protection

**TABLE 1. Species and Natural Communities Included in Core Area 1 Delineation**

<b>Common Name</b>	<b>Scientific Name</b>
Triangle Floater	<i>Alasmidonta undulata</i>
Crooked-Stem Aster	<i>Symphotrichum prenanthoides</i>
Wapato	<i>Sagittaria cuneata</i>
Bristly Buttercup	<i>Ranunculus pennsylvanicus</i>
Bur Oak	<i>Quercus macrocarpa</i>
Ostrich Fern Borer	<i>Papaipema sp. 2 nr. pterisii</i>
High-terrace floodplain forest	
Red Maple - Black Ash - Hemlock - Bur Oak Swamp	
Hairy Wild Rye	<i>Elymus villosus</i>
Intermediate Spike Sedge	<i>Eleocharis intermedia</i>
Narrow Leaved Spring Beauty	<i>Claytonia virginica</i>
Tuckerman's Sedge	<i>Carex tuckermanii</i>
Gray's Sedge	<i>Carex grayi</i>
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>

<b>Taxonomic Group</b>	<b>MESA Status</b>
Mussel	No Longer Listed
Plant	Special Concern
Plant	Threatened
Plant	Special Concern
Plant	Special Concern
Butterflies & Moths	Special Concern
Natural Community	
Natural Community	
Plant	Endangered
Plant	Threatened
Plant	Endangered
Plant	Endangered
Plant	Threatened
Amphibian	Special Concern

**TABLE 2. Species and Natural Communities Included in Core Area 2 Delineation**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Taxonomic Group</b>
American Bittern	<i>Botaurus lentiginosus</i>	Bird
Mustard White	<i>Pieris oleracea</i>	Butterfiles & Moths
Wood Turtle	<i>Glyptemys insculpta</i>	Turtle
Common Moorhen	<i>Gallinula chloropus</i>	Bird

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**MESA Status**

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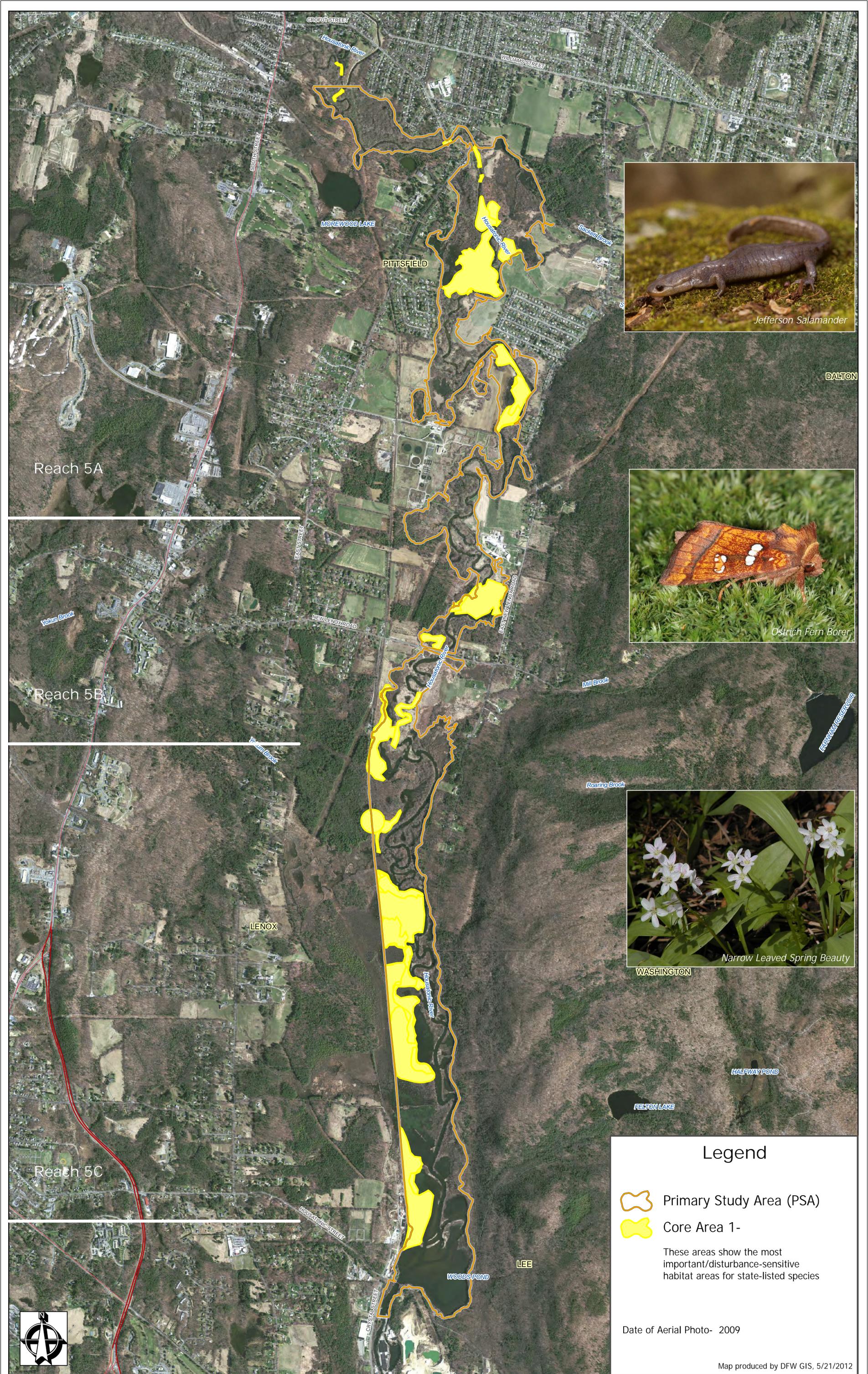
Endangered

Threatened

Special Concern

Special Concern

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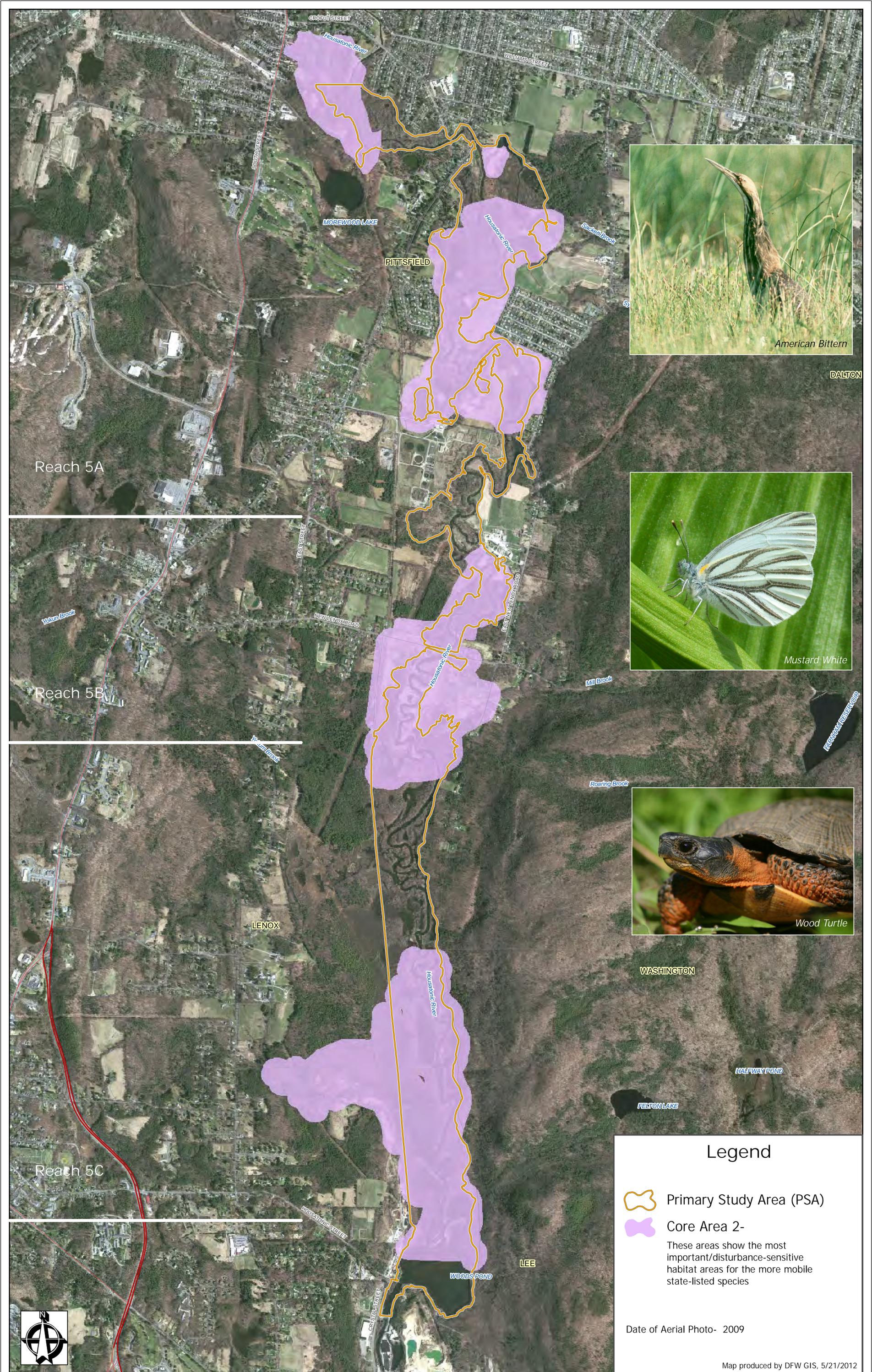
**Legend**

- Primary Study Area (PSA)
- Core Area 1-  
These areas show the most important/disturbance-sensitive habitat areas for state-listed species

Date of Aerial Photo- 2009

Map produced by DFW GIS, 5/21/2012

# Core Habitat Areas Housatonic River Primary Study Area (PSA)



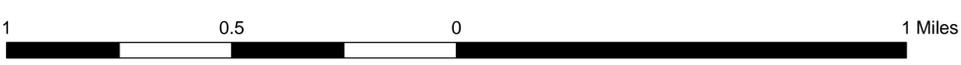
**Legend**

- Primary Study Area (PSA)
- Core Area 2-  
These areas show the most important/disturbance-sensitive habitat areas for the more mobile state-listed species

Date of Aerial Photo- 2009

Map produced by DFW GIS, 5/21/2012

## Core Habitat Areas (Core Area 2) Housatonic River Primary Study Area (PSA)





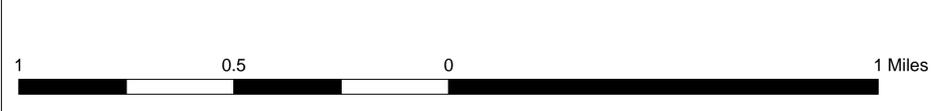
### Legend

- Primary Study Area (PSA)
- Core Areas- High Species Richness (8 or more state-listed species)
- Vernal Pool Core Areas

Date of Aerial Photo- 2009

Map produced by DFW GIS, 5/21/2012

Part of the Housatonic River  
 Showing Primary Study Area, High Species Richness, and Vernal Pools



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**ATTACHMENT C**  
**SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE**  
**REQUIREMENTS (ARARs)**

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**ATTACHMENT C**  
**SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)**  
Page 1 of 17

Statute/Regulation	Citation <sup>a</sup>	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs
<b>CHEMICAL-SPECIFIC ARARs</b>				
<b>Federal ARARs</b>				
Clean Water Act, National Recommended Water Quality Criteria for PCBs	National Recommended Water Quality Criteria: 2002, EPA-822-R-02-047, USEPA, Office of Water, Office of Science and Technology (Nov. 2002)	Freshwater chronic aquatic life criterion (based on protection of mink): 0.014 ug/L. Human health criterion based on human consumption of water and organisms: 0.000064 ug/L.	Relevant and appropriate	<p>The freshwater chronic aquatic life criterion of 0.014 ug/L will be met by the proposed alternative.</p> <p>Regarding the human health criterion based on human consumption of water and organisms of 0.000064 ug/L:</p> <p>In Massachusetts, the criterion is being waived on the grounds that achievement of this ARAR is technically impracticable, given that based on current data, it is not predicted to be met by this or any sediment alternative in Massachusetts. As a modified Performance Standard for this waived criterion, the remedy will be required to meet the Biota Performance Standard and Downstream Transport Performance Standards in the Permit. (For purposes of this Attachment C, “remedy” includes the corrective measures, remedial design and remedial action activities, and operation and maintenance activities undertaken pursuant to the Modification to the RCRA Permit.)</p> <p>In Connecticut, the remedy is intended to meet the standard. Current modeling shows the remedy will achieve attainment in at least 3 of the 4 Connecticut impoundments. However, the results from the Connecticut model are very uncertain due to the empirical, semi-quantitative nature of the analyses. As such, it is not possible to predict with certainty attainment or lack of attainment of the human health criterion based on human consumption of water and organisms of 0.000064 ug/L in Connecticut (Reaches 10-16). Thus, EPA does not believe that there is a basis to waive this criterion at this time.</p>

**ATTACHMENT C**  
**SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)**  
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Statute/Regulation	Citation <sup>a</sup>	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs
				In addition, this concentration (0.000064 ug/L) cannot be reliably measured using available analytical techniques. Until analytical techniques are available to measure to this concentration, the lowest available detection limit will be used to measure progress toward this standard over time throughout the Housatonic River.
<b>State ARARs</b>				
Numeric Massachusetts Water Quality Criteria for PCBs - Massachusetts Surface Water Quality Standards	314 CMR 4.05(5)(e)	Same as federal water quality criteria	Relevant and appropriate	Same as federal standard, see above.
Numeric Connecticut Water Quality Criteria for PCBs	Connecticut Water Quality Standards, Section 22a-462-1 to 22a-462-9	Same as federal water quality criteria	Relevant and appropriate	Same as federal standard, see above.
Connecticut Remediation Standards Regulations, Direct Exposure Criteria for Soil	Conn. Gen. Stat. 22a-133k-1 through k-3 Appendix A	Establishes soil cleanup standards, including those for residential or unrestricted use (“Residential Criteria”).	Potentially applicable	Performance Standards based upon unrestricted use or residential use in Connecticut are based upon the Residential Direct Exposure Criteria.
<b>To Be Considered</b>				
Cancer Slope Factors (CSFs)	EPA Integrated Risk Information System	Guidance values used to evaluate the potential carcinogenic hazard caused by exposure to PCBs.	To be considered	CSFs used to compute the individual cancer risk resulting from exposure to carcinogens in site media.
Reference Doses (RfDs)	EPA Integrated Risk Information System	Guidance values used to evaluate the non-cancer hazards associated with exposure to PCBs.	To be considered	RfDs used to characterize human health risks due to non-carcinogens in site media.

**ATTACHMENT C**  
**SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)**  
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<b>Statute/Regulation</b>	<b>Citation<sup>a</sup></b>	<b>Synopsis of Requirements</b>	<b>Status</b>	<b>Action(s) to be Taken to Achieve ARARs</b>
PCBs: Cancer Dose Response Assessment and Application in Environmental Mixtures (EPA, 1996).	EPA/600/P-96/001F (National Center for Environmental Assessment, Office of Research and Development, September 1996)	Guidance describing EPA's reassessment regarding the carcinogenicity of PCBs.	To be considered	The guidance has been used in characterization of site risks.
Guidelines for Carcinogenic Risk Assessment (EPA, 2005)	EPA/630/P-03/001F (EPA Risk Assessment Forum, March 2005)	Framework and guidelines for assessing potential cancer risks from exposure to pollutants and other environmental agents.	To be considered	Guidelines have been used in assessing risks.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA/630/R-03/003F (EPA Risk Assessment Forum, March 2005)	Guidance on issues related to assessing cancer risks associated with early-life exposures, including an adjustment for carcinogens acting through a mutagenic mode of action.	To be considered	Guidance has been used in assessing risks.
Massachusetts Fish Consumption Advisory	Massachusetts Department of Public Health, Freshwater Fish Consumption Advisory List (2007)	Advises that the public should not consume any fish from the Housatonic River from Dalton to Sheffield due to PCBs; also includes frogs and turtles.	To be considered	This advisory will be followed in reference to biota consumption and actions to reduce fish consumption risks, including Institutional Controls.
Massachusetts Waterfowl Consumption Advisory	Massachusetts Department of Public Health, Provisional Waterfowl Consumption Advisory (1999)	Advises that the public should avoid eating all mallards and wood ducks from the Housatonic River and its impoundments from Pittsfield to Rising Pond.	To be considered	This advisory will be followed in reference to waterfowl consumption and actions to reduce waterfowl consumption risks, including Institutional Controls.

**ATTACHMENT C**  
**SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)**  
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Statute/Regulation	Citation <sup>a</sup>	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs
Connecticut Fish Consumption Advisory	Connecticut Department of Public Health (CDPH), 2006 Advisory for Eating Fish from Connecticut Water bodies	Establishes advisories on consuming fish from the Housatonic River in Connecticut (above Derby Dam), including Lakes Lillinonah, Zoar and Housatonic, due to PCBs in fish. Advisories vary by species, location and group of consumers, ranging from “do not eat” to “one meal per week.”	To be considered	This advisory will be followed in reference to fish consumption and actions to reduce fish consumption risks, including Institutional Controls.
<b>LOCATION-SPECIFIC ARARs</b>				
<b>Federal ARARs</b>				
Clean Water Act – Section 404 and implementing regulations	33 USC 1344 33 CFR Parts 320-323, 325, 332 (ACOE) 40 CFR Part 230 (EPA)	Under these requirements, no activity that adversely affects a wetland, including vernal pools, shall be permitted if a practicable alternative with less adverse effect on the aquatic ecosystem is available; a discharge cannot cause or contribute to violation of any applicable water quality standard, violate an applicable toxic effluent standard, jeopardize existence of endangered or threatened species; contribute to significant degradation of waters of the U.S. Discharger must take appropriate and practicable steps to minimize potential adverse impacts of the discharge on the aquatic ecosystem. Mitigation/restoration required for unavoidable impacts to resources.	Applicable	Any remedy activities that will alter wetlands, including excavation of contaminated wetland soils and sediments, backfilling and capping, will be conducted in accordance with these standards. (For purposes of this Attachment C, compliance with ARARs or standards refers to compliance with the substantive requirements, criteria, or limitations of each provision). There is no practicable alternative with lesser effects on the aquatic ecosystem. The remedy will not cause or contribute to violation of any applicable water quality standard, violate an applicable toxic effluent standard, jeopardize existence of endangered or threatened species; contribute to significant degradation of waters of the U.S. Implementation of the remedy will include appropriate and practicable steps to minimize potential adverse impacts of the discharge on the aquatic ecosystem. Mitigation/restoration will be conducted consistent with these regulations.

**ATTACHMENT C**  
**SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)**  
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<b>Statute/Regulation</b>	<b>Citation<sup>a</sup></b>	<b>Synopsis of Requirements</b>	<b>Status</b>	<b>Action(s) to be Taken to Achieve ARARs</b>
Floodplain Management and Protection of Wetlands	44 CFR Part 9	Regulation sets forth policy, procedure and responsibilities to implement and enforce Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands.	Applicable	Executive Orders will be implemented and enforced consistent with the policy, procedure and responsibilities stated in these regulations.
Rivers and Harbors Act of 1899, Section 10	33 USC 403	U.S. Army Corps of Engineers approval is generally required to excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of the channel of any navigable water in the U.S.	Applicable	The remedy may alter or modify navigable waters as provided under the Act. Any remedy activities subject to this Act will comply with the substantive requirements of this provision. Remedy will be coordinated with the U.S. Army Corps of Engineers.
Fish and Wildlife Coordination Act	16 USC 662(a) 40 CFR 6.302(g)	Any modification to a body of water requires consultation with the U.S. Fish and Wildlife Service and the appropriate state wildlife agency to develop measures to prevent, mitigate, or compensate for losses to fish and wildlife.	Applicable	This remedy may modify a water body as provided under the Act. Any remedy activities subject to this Act will comply with the substantive requirements. These activities will be coordinated with U.S. Fish and Wildlife Service and other federal and state resource agencies.
Resource Conservation and Recovery Act (RCRA) requirements for hazardous waste facilities in floodplains	40 CFR 264.1(j)(7) 40 CFR 264.18(b)	Remediation waste management sites must be designed, constructed, operated and maintained to prevent washout of any hazardous waste by a 100-year flood, unless procedures are in effect to have waste removed safely before flood waters reach the facility or no adverse effects on human health or the environment will result if washout occurs.	Potentially relevant and appropriate	The remedy does not include disposal pursuant to these regulations, but to the extent that these materials are removed from the Area of Contamination and temporary movement of waste (stockpiling) during remediation occurs, measures will be taken to prevent washout.
National Historic Preservation Act and regulations	16 USC 470f 36 CFR Part 800	A federal agency must take into account the project's effect on properties included or eligible for inclusion in the National Register of Historic Places.	Applicable	If this remedy affects historic properties/structures subject to these requirements, activities will be coordinated with the Department of the Interior (DOI) and conducted in accordance with the substantive requirements of these regulations.

**ATTACHMENT C**  
**SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)**  
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<b>Statute/Regulation</b>	<b>Citation<sup>a</sup></b>	<b>Synopsis of Requirements</b>	<b>Status</b>	<b>Action(s) to be Taken to Achieve ARARs</b>
Archaeological and Historic Preservation Act	16 USC 469	When a Federal agency finds, or is notified, that its activities in connection with a Federal construction project may cause irreparable loss or destruction of significant scientific, prehistorical, historical, or archeological data, such agency shall notify DOI. Such agency may request DOI to undertake the preservation of such data or it may undertake such activities. If DOI determines that such data is significant and is being or may be irrevocably lost or destroyed, it is to conduct a survey and other investigation of the areas which are or may be affected and recover and preserve such data which are not being, but should be, recovered and preserved in the public interest.	Applicable	If during remedial design or remedial action, it is determined that this remedy may cause irreparable loss or destruction of significant scientific, prehistorical, historical, or archaeological data, EPA will notify DOI and comply with the substantive requirements in this statute.
Executive Order 11988 (Floodplain Management)	Executive Order	Federal agencies are required to avoid impacts associated with the occupancy and modification of a floodplain and avoid support of a floodplain development whenever there is a practicable alternative.	To be considered	In the remedy, activities will be performed in the floodplain. All activities will be conducted to ensure that they do not result in occupancy and modification of the floodplain.
Executive Order 11990 (Protection of Wetlands)	Executive Order	Federal agencies are required to avoid adversely impacting wetlands unless there is no practicable alternative and the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.	To be considered	Activities subject to this Executive Order will be conducted in accordance with the substantive requirements of these standards.
Endangered Species Act and Regulations	16 USC 1536(a)-(d) 40 CFR 6.302(h) 50 CFR Part 402, Subparts A&B	Must identify whether threatened or endangered (T&E) species or critical habitat is affected by proposed action, or take mitigation measures so that action does not affect species/habitat.	Applicable	These provisions will be complied with in regard to federally-listed threatened or endangered species and their critical habitat.

**ATTACHMENT C**  
**SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)**  
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Statute/Regulation	Citation <sup>a</sup>	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs
<b>State ARARs</b>				
Massachusetts Waterways Law and Regulations	MGL Ch. 91 310 CMR 9.00	Regulates construction, placement, excavation, alteration or removal of fill or structures in waterways below the high water mark.	Applicable	This remedy includes construction, placement, excavation, alteration and removal activities in the Housatonic River. Measures undertaken will meet the substantive environmental standards and limit impacts.
Massachusetts Clean Water Act – Water Quality Certification Regulations	314 CMR 9.01-9.08	For discharge of dredged or fill material: (a) no discharge is permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences; (b) no discharge is permitted unless appropriate and practicable steps have been taken which will avoid and minimize potential adverse impacts to bordering or isolated vegetated wetlands or land under water; (c) no discharge to Outstanding Resource Waters, other than specified exceptions; (d) no discharge without a variance to particular Outstanding Resource Waters listed in 9.06(4), including certain vernal pools; (e) stormwater to be controlled with best management practices; (f) no discharge shall be permitted in rare circumstances where the activity will result in substantial adverse impacts to the physical, chemical, or biological integrity of surface waters.	Applicable	The remedy includes discharge of dredged or fill material and dredging and dredged material management. All activities subject to these requirements will be conducted in accordance with these regulations.

**ATTACHMENT C**  
**SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)**  
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Statute/Regulation	Citation <sup>a</sup>	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs
		For dredging and dredged material management; (a) no dredging is allowed if there is a practicable alternative that would have less impact on the aquatic ecosystem; (b) appropriate and practicable steps must be taken to avoid, minimize or mitigate adverse effects on land under water; (c) dredging must be conducted to meet performance standards designed to minimize impacts on aquatic ecosystem and protect human health; and (d) placement of dredged material in an intermediate facility for sediment management prior to disposal or reuse must meet certain requirements.		
Massachusetts Wetlands Protection Act and Regulations	MGL c. 131, section 40 310 CMR 10.01-10.10, 10.51-10.60	These requirements govern removal, dredging, filling or altering of banks, riverfront areas, inland wetlands, land subject to flooding and other areas, including provisions on limited projects.	Applicable	Any remedy activities that remove, dredge, fill, or alter such areas will be conducted in accordance with these standards.
Massachusetts Dam Safety Standards	302 CMR 10.00	Regulations govern design and construction of new and existing dams, and removal of existing dams, and inspection of dams.	Potentially applicable	To the extent that these regulations are applicable to a Massachusetts dam which is in the area of remedy activity, the remedy will comply with these regulations.
Massachusetts Facility Location Standards	310 CMR 30.700 990 CMR 5.04	Location standards for hazardous waste management facilities in floodplains, including, but not limited to, Land Subject to Flooding and Areas of Critical Environmental Concern.	Potentially applicable or potentially relevant and appropriate	To the extent that non-PCB State hazardous waste is temporarily stockpiled in an area subject to these regulations within the Area of Contamination, the remedy will comply with these requirements. To the extent that the remedy requires activity outside the Area of Contamination in an area subject to these regulations and remaining on-site that requires temporary storage or treatment of hazardous waste, it would be conducted such that it would comply with these requirements.

**ATTACHMENT C**  
**SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)**  
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<b>Statute/Regulation</b>	<b>Citation<sup>a</sup></b>	<b>Synopsis of Requirements</b>	<b>Status</b>	<b>Action(s) to be Taken to Achieve ARARs</b>
Massachusetts Site Suitability Criteria	310 CMR 16.40(3)(4)	Site suitability criteria for solid waste facilities	Potentially applicable	To the extent that solid waste is managed outside the Area of Contamination but remaining on-site, the remedy will comply with these requirements.
Massachusetts Historical Commission Act and Regulations	MGL c. 9, section 27C  950 CMR 71.07	If a project has an area of potential impact that could cause a change in the historical, architectural, archaeological, or cultural qualities of a property on the State Register of Historic Places, these provisions establish a process for notification, determination of adverse impact, and evaluation of alternatives to avoid, minimize or mitigate such impacts.	Relevant and appropriate	If such properties are present in the area of remedy activities, the remedy will comply with these requirements.
Massachusetts Endangered Species Act (MESA) and Regulations	MGL c. 131A 321 CMR 10.00, Parts I, II, and V.  321 CMR 10.00, Part IV	A proposed activity in mapped Priority Habitat for a state-listed rare, threatened, endangered species or species of special concern, or other area where such a species has occurred may not result in a “take” of such species, unless it has been authorized for conservation and management purposes that provide a long-term net benefit to the conservation of the affected state-listed species.  Projects that will alter a designated Significant Habitat must be reviewed to ensure that they will not reduce the viability of the habitat to sustain an endangered or threatened species.	Applicable	The remedy will take place in priority habitat for one or more state-listed species. In implementing the remedy, impacts to state-listed species and their habitats will be avoided or minimized wherever possible. The processes outlined as part of the remedy for work in Core Habitat areas were developed in consultation with the Commonwealth and will satisfy these requirements.  To the extent that unavoidable impacts result in a take of state-listed species, a conservation and management plan providing for a long-term net benefit to the affected state-listed species will be implemented.  In a July 31, 2012 letter to EPA, the MA National Heritage and Endangered Species Program identified those state-listed species potentially affected in the project area. Note that since that date, Massachusetts has delisted particular species; in design and implementation of the remedy, EPA, in consultation with MA, will use the then-current listing of State-listed species.

**ATTACHMENT C**  
**SUMMARY OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)**  
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Statute/Regulation	Citation <sup>a</sup>	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs
				There are no designated Significant Habitats in the remedy area. To the extent that a Significant Habitat is designated in the remedy area, this provision will be complied with.
Massachusetts Area of Critical Environmental Concern (ACEC)	301 CMR 12.00	Provides for establishment of Areas of Critical Environmental Concern in the State	Applicable	An ACEC has been established in part of the Rest of River area. The remedy takes this designation into account.
Connecticut Dam Safety Regulations	CGS 22a-401 to 22a-411 Conn. Agencies Regs. Section 22a-409-2.	Regulations govern design and construction of new and existing dams, and removal of existing dams, and inspection of dams.	Potentially applicable	To the extent that these regulations are applicable to a Connecticut dam in the area of remedy activity, the remedy will comply with these regulations.
Connecticut Inland Wetlands and Watercourses Act and regulations	CGS 22a-36 et seq. Conn. Agencies Regs. Sec. 22a-39-4	Permit required for activities that remove material from inland wetlands or watercourses; Connecticut Department of Energy and Environmental Protection (CT DEEP) is allowed to issue general permit for minor activities with minimal environmental impacts, defined to include monitoring and sampling.	Potentially applicable	To the extent that the remedy includes activity in Connecticut that removes material from inland wetlands or watercourses, the remedy will comply with this provision.

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Statute/Regulation	Citation <sup>a</sup>	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs
Connecticut Endangered Species Act	Conn. Gen. Stat. 26-303 through 26-316	Requires state agency to: (a) ensure that any action authorized or performed by it does not threaten the continued existence of a listed endangered or threatened species or result in destruction or adverse modification of habitat essential to such species, unless an exemption is granted; and (b) take all reasonable measures to mitigate any adverse impacts of the proposed action on such species or habitat. Prohibits “taking” of endangered or threatened species, except where State determines that a proposed action would not appreciably reduce likelihood of survival or recovery of the species.	Potentially applicable	To the extent that any remedy activity takes place in Connecticut that is subject to these regulations, the remedy will comply with these regulations.
<b>To Be Considered</b>				
MassDEP Guidance	Dam Removal and the Wetland Regulations, 2007	Provides guidance on permitting issues and review considerations associated with dam removal projects, especially as it relates to the Massachusetts Wetlands Protection Act.	To be considered	To the extent that this guidance is applicable to a Massachusetts dam that is in the area of remedy activity, the remedy will comply with this guidance.
Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) Guidance	Dam Removal in Massachusetts: A Basic Guide for Project Proponents, 2007	Provides guidance through the initial conceptualization of a project, the feasibility studies, and the permitting process.	To be considered	To the extent that this guidance is applicable to a Massachusetts dam that is in the area of remedy activity, the remedy will comply with this guidance.
Massachusetts Department of Fish and Game Guidance	Impounded Sediment and Dam Removal in Massachusetts: A Decision-Making Framework Regarding Dam Removal and Sediment Management. 2003	Provides guidance on a decision-making framework regarding dam removal and in-stream management options for impounded sediment.	To be considered	To the extent that this guidance is applicable to a Massachusetts dam in the area of remedy activity, the remedy will comply with this guidance.

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Statute/Regulation	Citation <sup>a</sup>	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs
<b>ACTION-SPECIFIC ARARs</b>				
<b>Federal ARARs</b>				
Toxic Substances Control Act (TSCA) Regulations on Cleanup of PCB Remediation Waste	40 CFR 761.50 40 CFR 761.61	General requirements (761.50) and specific options (761.61) for cleanup of PCB Remediation Waste, including PCB-containing sediments and soils. Options include self-implementing provisions (not applicable to sediments) and risk-based approval by EPA. Risk-based approval is pursuant to 40 CFR 761.61(c) and requires demonstration that cleanup method will not pose an unreasonable risk of injury to health or the environment.	Applicable	The remedy will comply with these provisions.
TSCA Regulations on Storage of PCB Remediation Waste	40 CFR 761.50 40 CFR 761.65 40 CFR 761.61(c)	General and specific requirements for storage of PCB Remediation Waste. Regulations include specific provisions for storage of PCB Remediation Waste in piles at the cleanup site or site of generation for up to 180 days (761.65(c)(9)). Also allows for risk-based approval by EPA of alternate storage method (761.61(c)), based on demonstration that it will not pose an unreasonable risk of injury to health or the environment.	Applicable	The remedy will comply with these provisions.
TSCA Regulations on Discharge of PCB-containing Water	40 CFR 761.50(a)(3)	Prohibits discharge of water containing PCBs to navigable waters unless PCB concentration is <3 mg/L or discharge is in accordance with NPDES discharge limits.	Applicable	Any discharge to navigable waters will comply with this provision.
TSCA Regulations on Decontamination	40 CFR 761.79	Establishes decontamination standards and procedures for removing PCBs from water, organic liquids, and various types of surfaces.	Applicable	To the extent the remedy involves decontamination activities, this provision will be complied with.

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<b>Statute/Regulation</b>	<b>Citation<sup>a</sup></b>	<b>Synopsis of Requirements</b>	<b>Status</b>	<b>Action(s) to be Taken to Achieve ARARs</b>
Clean Water Act and National Pollutant Discharge Elimination System (NPDES) Regulations	33 USC 1342 40 CFR 122 including, but not limited to 122.3(d) and 122.44(a) & (e) 40 CFR 125.1-125.3	These standards include that point source discharge must meet technology-based effluent limitations (including those based on best available technology for toxic and non-conventional pollutants and those based on best conventional technology for conventional pollutants) and effluent limitations and conditions necessary to meet state water quality standards.	Applicable	These standards will be complied with if water from the remedy, such as from dewatering or other processing of sediment and wetland soils, is discharged to surface waters.
Clean Water Act – NPDES Regulations (stormwater discharges)	40 CFR 122.26(c)(1)(ii)(C) 40 CFR 122.44(k)	Best management practices (BMPs) must be employed to control pollutants in stormwater discharges during construction activities.	Applicable	These standards will be complied with during construction activities.
Clean Water Act, National Recommended Water Quality Criteria for PCBs	National Recommended Water Quality Criteria: 2002, EPA-822-R-02-047, USEPA, Office of Water, Office of Science and Technology (Nov. 2002)	Freshwater chronic aquatic life criterion (based on protection of mink): 0.014 ug/L. Human health criterion based on human consumption of water and organisms: 0.000064 ug/L.	Relevant and appropriate	The remedy includes remedial activities within a waterway. All remedial activities will be conducted so as to not contribute to an exceedance of Water Quality Criteria.
RCRA regulations on identification of Hazardous Waste	40 CFR 261	Establishes standards for identifying and listing hazardous waste under RCRA.	Potentially applicable	Under the remedy, testing of wastes subject to removal will take place consistent with these requirements during design/implementation of the remedy.
RCRA regulations for Generators of Hazardous Waste	40 CFR 262.30-33	Pre-transportation requirements for generators of hazardous waste.	Potentially applicable	If RCRA hazardous wastes are identified, and these materials are removed from the Area of Contamination during remedy implementation but remain on-site, the remedy will comply with these requirements.

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Statute/Regulation	Citation <sup>a</sup>	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs
RCRA regulations on less-than-90-day Accumulation of Hazardous Waste	40 CFR 262.34	Provides for on-site accumulation of hazardous waste in certain circumstances, provided compliance with other specified requirements.	Potentially applicable	If RCRA hazardous wastes are identified, and these materials are removed from the Area of Contamination during remedy implementation but remain on-site, the remedy will comply with these requirements.
RCRA Hazardous Waste Management Facilities —General requirements.	40 CFR 264.1(j)	General requirements for hazardous waste management facilities (waste analysis, security, precautions regarding ignition or reaction of wastes, preventing washout of units).	Potentially applicable	If RCRA hazardous wastes are identified, and these materials are removed from the Area of Contamination during remedy implementation but remain on-site, the remedy will comply with these requirements.
<b>State ARARs</b>				
Massachusetts Clean Waters Act – Water Quality Certification Regulations	314 CMR 9.01 -9.08	This includes provisions dealing with discharge of dredged or fill material: (a) no such discharge is allowed if there is a practicable alternative with less adverse impact on aquatic ecosystem; (b) appropriate and practicable steps must be taken to avoid and minimize adverse effects on land under water and on bordering or isolated vegetated wetlands, including 1:1 restoration or replication of such wetlands (unless waived); (c) there must be no discharge that would adversely affect estimated habitat of rare wildlife species under the Wetlands Protection Act or would be to certain designated “Outstanding Resource Waters,” including certified vernal pools, unless a variance is obtained; (d) stormwater discharges must be controlled with best management practices (BMPs); and (e) there must be no substantial adverse impacts to physical, chemical, or biological integrity of surface waters.	Applicable	The remedy includes discharge of dredged or fill material and dredging and dredged material management. All activities subject to these requirements will be conducted in accordance with these regulations.

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Statute/Regulation	Citation <sup>a</sup>	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs
		For dredging and dredged material management: (a) no dredging is allowed if there is a practicable alternative with less adverse impact on aquatic ecosystem; (b) appropriate and practicable steps must be taken to avoid, minimize, or mitigate adverse effects on land under water; (c) dredging must be conducted to meet performance standards designed to minimize impacts on the aquatic ecosystem and protect human health; and (d) placement of dredged material in an intermediate facility for sediment management (dewatering, processing, etc.) prior to disposal or reuse must meet certain requirements, including requirements governing method of placement/storage of dredged material and siting criteria.		
Massachusetts Clean Water Act and Wetlands Protection Act – stormwater management standards	310 CMR 10.05(6)(k) 314 CMR 9.06(6)(a)	Projects subject to regulation under the Wetlands Protection Act or that involve discharge of dredged or fill material must incorporate stormwater BMPs to attenuate pollutants in stormwater discharges, as well as to provide a setback from receiving waters and wetlands, in accordance with 10 specified stormwater management standards.	Applicable	The remedy will comply with stormwater requirements.
Numeric Massachusetts Water Quality Criteria for PCBs – Massachusetts Surface Water Quality Standards	314 CMR 4.05(5)(e)	Same as federal water quality criteria	Relevant and appropriate	Same as federal action-specific standard; see above.

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Statute/Regulation	Citation <sup>a</sup>	Synopsis of Requirements	Status	Action(s) to be Taken to Achieve ARARs
Massachusetts Hazardous Waste Regulations on Identification and Listing of Hazardous Waste	310 CMR 30.100	<p>Establishes criteria and lists for determining whether a waste is a hazardous waste under state law.</p> <p>Wastes that contain PCBs <math>\geq</math> 50 mg/kg (which are listed wastes) are exempt from the state hazardous waste management regulations so long as they are managed in compliance with EPA's TSCA regulations (40 CFR Part 761) (see 310 CMR 30.501(3)(a)).</p> <p>The state hazardous waste management regulations also exempt dredged material (even if it constitutes non-PCB state hazardous waste) that is temporarily stored at an intermediate facility (pursuant to 314 CMR 9.07(4)) and managed in accordance with a state water quality certification and §404 requirements under the Clean Water Act (see 310 CMR 30.104(3)(f)).</p>	Applicable	Wastes subject to removal will be tested consistent with these requirements during design/implementation of the remedy. Wastes that contain PCBs at levels greater than or equal to 50 mg/kg will be managed in compliance with EPA's TSCA regulations (40 CFR Part 761). Temporary facilities to manage waste materials will be managed in accordance with the substantive state and federal requirements.
Massachusetts hazardous waste regulations for generators	310 CMR 30.321-324	Pre-transport requirements for generators of hazardous waste	Potentially applicable	To the extent that non-PCB hazardous wastes are identified, and these materials are removed from the Area of Contamination during remedy implementation but remain on-site during remedy implementation, the remedy will comply with these pre-transport requirements.

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<b>Statute/Regulation</b>	<b>Citation<sup>a</sup></b>	<b>Synopsis of Requirements</b>	<b>Status</b>	<b>Action(s) to be Taken to Achieve ARARs</b>
Massachusetts hazardous waste management – general requirements	310 CMR 30.513, 514, 524, 560	General requirements for hazardous waste management facilities	Potentially applicable	To the extent that non-PCB hazardous wastes are identified, and these materials are removed from the Area of Contamination during remedy implementation but remain on-site during remedy implementation, the remedy will comply with these general requirements.
Massachusetts Hazardous Waste regulations - technical requirements for storage	310 CMR 602, 640, 580, 660.	Requirements related to storage of hazardous waste.	Potentially applicable	To the extent that non-PCB hazardous wastes are identified, and are moved out of the Area of Contamination but remain on-site during remedy implementation, the remedy will comply with the substantive requirements of these regulations.
Massachusetts Air Pollution Control Regulations	310 CMR 7.00	These provisions regulate air emissions, dust, odor, and noise, among other things.	Applicable	Remedy will comply with these provisions.
Connecticut Water Quality Standards for PCBs	Connecticut Water Quality Standards, Section 22a-462-1 to 22a-462-9	Criteria and standards for waters in Connecticut.	Relevant and appropriate	To the extent that remedy activities take place in a Connecticut waterway, such remedy activities will be conducted so as to not contribute to an exceedance of Water Quality Criteria. Remedy activities will contribute to the achievement of the State Water Quality Standards.
<b>To Be Considered</b>				
TSCA PCB Spill Cleanup Policy	40 CFR Part 761, Subpart G	Policy used to determine adequacy of cleanup of spills resulting from the release of materials containing PCBs at concentration of 50 mg/kg or greater.	To be considered	To the extent that such a spill occurs in the remedy, this policy will be considered in the response.

<sup>a</sup>The substantive requirements, including environmental performance standards, contained in the statutes, regulations, and other documents referenced in the column captioned “Citation” shall control to determine the requirements that must be met and the actions to achieve such requirements. Other references in the table that summarize the requirements of or action necessary to achieve ARARs are summary in nature, may not be all-inclusive, and are not controlling.

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**ATTACHMENT D**  
**TSCA 40 C.F.R. SECTION 761.61(C) DETERMINATION**

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## ATTACHMENT D

### TSCA 40 CFR SECTION 761.61(C) DETERMINATION

PCB-contaminated sediments and soils in the Rest of River likely meet the definition of PCB remediation waste as defined under 40 CFR Section 761.3 and thus are regulated for cleanup and disposal under 40 CFR Part 761.

EPA's Rest of River administrative record available for public review includes extensive information on the nature of the contamination, location and extent of the contamination, the procedures used relative to sampling, and Human Health and Ecological Risk Assessments. The Rest of River cleanup plan is specified in the Permit. In accordance with the requirements under the Toxic Substances Control Act (TSCA) and 40 CFR Section 761.61(c), EPA has made a finding that the manner of sampling, storage, cleanup, and disposal of PCB-contaminated sediment and soil as set out in this Permit, including attainment of the Performance Standards and associated corrective measures to meet the Performance Standards, will not result in an unreasonable risk of injury to human health or the environment as long as the following conditions are met:

- All contaminated sediment and floodplain soil that is removed will be disposed of off-site at an existing TSCA-approved disposal facility or RCRA hazardous waste landfill or a landfill permitted by the receiving state to accept PCB remediation wastes, depending on the contaminant levels and waste classifications.
- Several components of the Permit require construction of an Engineered Cap following sediment removal. Such Engineered Caps will be constructed in accordance with the Engineered Cap Performance Standards and design protocols identified in the Permit.
- Protocols, developed in accordance with TSCA, will be developed and maintained for the decontamination of all equipment used when handling TSCA-regulated material to ensure proper decontamination of equipment and to avoid mixing of TSCA-regulated material with non-TSCA material.
- The use of activated carbon or another amendment as part of Rest of River remediation will be implemented in accordance with the Permit to reduce the bioavailability of PCBs following remediation.
- Institutional Controls, Operation and Maintenance, and Periodic Reviews will be carried out as a component of the cleanup, both in the areas of sediment and floodplain removal, and in areas subject to Monitored Natural Recovery.
- Air monitoring and dust suppression measures for PCBs will be maintained until excavation and transport of PCB-contaminated soil and sediment, and capping of PCB-contaminated soil and sediment is complete.

- Temporarily stockpiled TSCA-regulated material will be bermed and properly covered to capture runoff in accordance with the requirements of §761.65. Runoff shall be collected and disposed of, as appropriate, in accordance with § 761.60 or § 761.79(b)(1), or as otherwise approved by EPA.
- A financial assurance provision is incorporated into the remedy via the Consent Decree.