Public Input on General Electric's September 28, 2023 Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A

February 2024

TOWN OF LEE
32 Main Street, Lee, MA 01238
www.lee.ma.us

R. Christopher Brittain,
Town Administrator

January 9, 2024

Mr. Dean Tagliaferro
EPA New England
10 Lyman Street, Suite 2
Pittsfield, MA 01201

The following is a list of comments from the Town of Lee regarding the Conceptual RD/RA Work Plan for Reach 5A

1. SKEO provided the following comment: Section 8 of the Conceptual RD/RA WP addresses sustainability considerations (pdf page 115). As part of this evaluation, the possible sources of greenhouse gases are to be described. TASC previously commented on the potential greenhouse gas emissions produced from the Upland Disposal Facility (UDF), which will contain disposed sediments and soils. Literature sources indicate that the anaerobic degradation of sediment organic matter leads to considerable gas production in landfills where contaminated sediments are disposed of; however, little is known about the magnitude of gas generation from dredged sediment (refer to Gebert et al., 2019; and Gebert and Knoblauch, 2017).

The town requests that the possible gas production from the UDF landfilled sediments and soils be included as part of the sustainability evaluation presented within the Conceptual RD/RA WP. In addition, the town does not feel that that current plan provided by GE provides enough consideration for climate change.

2. SKEO provided the following comment: The Upland Disposal Facility is appropriately addressed under separate documents. The Conceptual RD/RA WP provides estimates of sediment/soil removal volumes; however, it is difficult to determine if conservative estimation factors (such as a soil fluff factor resulting from excavation of dirt) were applied. In addition, it would be useful for the Conceptual RD/RA WP to mention whether the total (conservative) estimates of sediment/soil removal volumes can be addressed by the UDF capacity.

The town would like documentation to show that the estimates for managed sediment/soil waste have been conservatively estimated and can be accommodated by the UDF capacity. The town also requests clarity on where the dewatering will be conducted (on-site vs. UDF) and on the method of treatment/management of wastewater.

R. Christopher Brittain,
Town Administrator

CC:
His Excellency Joseph Biden, President of the United States
The Honorable Edward Markey, U.S. Senate
The Honorable Elizabeth Warren, U.S. Senate
The Honorable Richard Neal, U.S. House of Representatives
Her Excellency Maura Healey, Governor of Massachusetts
The Honorable Paul Mark, State Senator
The Honorable William “Smitty” Pignatelli, State Representative, 3rd Berkshire
Select Board, Town of Lee

Mass Audubon

February 9, 2024

Christopher Smith
EPA New England, Region I
Federal Facilities & Housatonic River Section
Superfund and Emergency Management Division
5 Post Office Square
Boston, MA 02109-3912

Via Email: R1Housatonic@epa.gov and smith.christopher@epa.gov

Re: **GE-Pittsfield/Housatonic River Site Rest of River (GECD850)**
Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A
Off-Site and On-Site Transportation and Disposal Plan

Dear Mr. Smith:

On behalf of Mass Audubon, I submit the following comments on GE's Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A, and the Off-Site and On-Site Transportation and Disposal Plan. As noted in our previous comments on this project, Mass Audubon is a directly affected landowner at our Canoe Meadows Wildlife Sanctuary in Reach 5A of the Rest of River area. Also, as a statewide conservation organization, we have a broader interest in the conservation and restoration of the Housatonic River Valley ecosystem for the benefit of people and wildlife.

Details Still to be Developed Regarding Mass Audubon's Property

Reach 5A encompasses Mass Audubon's property, and there are a number of important details that will need to be further addressed as the plans for the clean-up proceed. Those include improvements to the alternative access point for Mass Audubon operations; trails and signage; safety operations procedures and defining areas open or closed to public access as the work proceeds; avoidance of any impacts to the gas pipeline that runs through the property (should be mapped accurately on all plans); and restoration of trails, boardwalks, and any other Mass Audubon facilities impacted by the remediation work. These items and other details were discussed during the mediation process and are referenced in the Settlement Agreement, with provisions to be included in the Access Agreement. The plans for these items also need to be included in the final Work Plans for Reach 5A, at scales that are readable and actionable by the contractors who will be responsible for carrying out the work.

Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A

The Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A (Work Plan) weaves together decades of assessment and planning to present the most detailed picture to date of potential PCB remediation activities in a key section of the Housatonic River, including provisional plans for remediation of in-river sediment, backwater sediment, sediment in certain other waterbodies, riverbank soil, floodplain soil, and vernal pools. Detailed hydrologic modeling results and engineering considerations for cap design are also included. At last, the work ahead is coming into focus.

Mapping – Understanding all Work in Particular Locations: A substantial portion of the Work Plan is comprised of various map series, depicting pre-design investigation PCB concentrations and preliminary remediation needs to meet performance standards at different depths and locations throughout the Reach 5A portion of the Primary Study Area. Channel, bank, backwater, and floodplain areas (and others) are depicted in some detail in their respective maps, and all together in Figure 4-10 (Preliminary Remediation Areas for Reach 5A). The complexity and importance of the information presented in these maps (and associated data tables and documentation) is poorly served by its presentation as a static document. GE should develop a publicly accessible online map portal, providing all stakeholders with the ability to view exactly what remediation needs and activities apply to any subsection of the study area. Remediation activities are likely to proceed geographically, such that river channel and bank sediments, and adjacent floodplain areas, are addressed at roughly the same time before proceeding to the next area. A comprehensive, dynamic map (surely a key part of Arcadis' and GE's toolset in developing the Work Plan) would facilitate a public understanding of potential synergies (or conflicts) between planned channel, bank, and floodplain remediation activities, leading to an improved remediation result.

Additionally, the conceptual designs presented in the Work Plan are not sufficiently detailed to understand how any specific location might be affected by remediation activities. Will the work require upland construction access, and if so, how much? Are storm drains, septic systems, and/or other utilities (including the gas pipeline that traverses Mass Audubon's property) accounted for in designs? Topographical details may be relevant but aren't depicted on the conceptual plans. A full "30 percent" design plan set should include at least provisional depictions of these and other relevant attributes.

Amendment in BW5A-1

BW5A-1 is a backwater marsh in the southwestern corner of Canoe Meadows Wildlife Sanctuary. A biodiversity hot-spot on the sanctuary, BW5A-1 is designated as a Core Area. Remediation performance standards within Core Areas of rare species habitat as defined by the Massachusetts Division of Fisheries and Wildlife have been set to attempt to balance the interest of rare species population persistence against that of maximal PCB removal. As such, only a small portion (0.09 acres) of BW5A-1 is proposed to receive a standard excavation and capping treatment, while the remainder (~1.7 acres) is conceptually proposed to be treated with a broadcast, thin layer activated carbon (AC) amendment.

Based on the interior location of one of the excavation and capping sites, as shown on Figure 4-4a, it seems that heavy equipment may need to operate within the backwater area and surrounding floodplain to complete excavation and capping activities. In the interest of removing as much contaminated sediment from the area as possible, might GE also excavate and cap any area within the backwater affected by heavy equipment use? In recent years, much of BW5A-1 has remained inundated throughout much of the year, and excavation in standing water could pose challenges. If the area needs to be isolated and dewatered to work, anyway, it does not seem like a substantial additional risk to rare species populations to marginally increase the area of excavation and

capping. Additional fine-scale planning and consultation with Mass Audubon and the Natural Heritage and Endangered Species Program seems warranted in this area.

The Work Plan does not include many details on the AC amendment, but rather leaves final design to follow from the results of bench-scale testing (undertaken as part of the vernal pool remediation pilot study) and other analysis. Acknowledging that additional work is needed, Mass Audubon requests to participate in discussions related to the amendment design in BW5A-1. Mass Audubon's site-specific knowledge may add to that contributed by the consultant team as design decisions are made.

Invasive plants

Section 5.11, describing conceptual habitat impacts and restoration, notes in several places that remediated areas will be subject to invasive plant colonization, a particular concern on banks and floodplain areas. Japanese knotweed is identified as being already common in the area, and therefore represents a readily anticipated threat. From the information presented, though, it is difficult to understand the Work Plan's approach to and treatment of invasive plants. Will they be tolerated as inevitably dominating remediated areas, or recognized as an important point of failure for restoration? Although invasive plants are present, and in places abundant/dominant, within Reach 5A, disturbance related to remediation activities only exacerbates the area's vulnerability to invasion. GE should be responsible for ensuring that areas affected by remediation activities are restored with native plant communities. With "an ounce of prevention is worth a pound of herbicide" in mind, monitoring should be required to detect invasive plant occurrences early, and resources in place to remove them before they can become established in remediated areas. The final Work Plan should include detailed protocols for identification, removal, and disposal of invasive plants before and during remediation as well as during site restoration and post restoration monitoring.

Restoration of pre-remediation grades

Section 5.11.5 conceptually proposes using grade stakes to facilitate the re-establishment of approximate pre-remediation topography in floodplains during restoration activities. As described in a previous comment letter, Mass Audubon recommends a reconsideration of this design objective. The Work Plan states that efforts will be made to re-establish the "configuration of depressional areas and swales in forested areas that contribute to flood storage, surface water conveyance through the floodplain, soil moisture, and other habitat conditions," which is appropriate. However, generally lower post-remediation ground surface elevations relative to pre-remediation conditions would benefit the restoration in many ways: practically, it reduces the volume of imported sediment, lowering associated costs and logistical complexities, as well as lessening the risk of introducing invasive plant propagules; ecologically, lower floodplains function very differently from higher terraces that experience less frequent flooding. The lower a floodplain is, the more access it has to flooding, the process that drives floodplain ecosystems. Floodplain capping seems to be required in many cases to isolate residual PCB contaminated soils from the surface, but caps don't need to be feet thick to be effective. In these cases, the final grade could be lower than pre-remediation conditions, and ecological benefits would result.

"Permanence" of design

As described in Work Plan, Arcadis has put a commendable effort into hydraulic and hydrologic modeling and other analyses to fine tune cap performance parameters and other metrics, contributing to the design goal of long-term channel cap and bank stability. On the time frame of the potential activity of PCBs (in perpetuity, in practical terms), though, inevitably the Housatonic's channel will continue to migrate laterally across its floodplain, and aggrade and downcut vertically, as water flows through the years. Later, or sooner, the river will expose sediments intended to remain buried in the floodplain or riverbed. Proposed PCB flux monitoring at

Woods Pond Dam and other downstream locations would take at least three years of performance standard exceedance to trigger a response, during which time significant avulsion events could occur. As such, at this stage of project design, and within the terms of the Final Permit, Mass Audubon continues to encourage GE to take every opportunity to maximize the removal of contaminated sediments, even in locations along backwaters, abandoned meander channels, or other sites demonstrated to be stable in model analysis.

Off-Site and On-Site Transportation and Disposal Plan

As shown in Table 2-1 of the Off-Site and On-Site Transportation and Disposal Plan (T&D Plan), GE's preliminary, conceptual estimate of the volume of sediments removed from the Rest of River system is over 1 million cubic yards, apportioned between the proposed Upland Disposal Facility (UDF), to receive approximately 90 percent of contaminated sediments, and off-site disposal, accounting for the remainder. Estimates for Reach 5A alone are 130,200 cubic yards destined for the UDF, and 8,500 cubic yards to be sent to an out-of-state facility. The safe transportation of this volume of material within, and as applicable, beyond the Housatonic watershed is a monumental logistical challenge, with high stakes for the area's residents and their communities. This T&D Plan describes potential truck, rail, and hydraulic transport alternatives, and how they may be used in combination, if feasible, to facilitate local and off-site sediment disposal.

Public safety must be the paramount concern throughout the remediation and sediment transportation and disposal process, and affected residents, municipalities, and other stakeholders deserve every possible effort to avoid, minimize, and mitigate potential risks associated with this project phase. Yet the environmental consequences of the three sediment transportation alternatives described are also important, and on this topic the T&D Plan is largely silent. At this conceptual phase, perhaps it is premature to quantify environmental parameters related to the sediment transportation options, but such information, even qualitatively, would be helpful for understanding advantages of and tradeoffs between trucking, rail, and hydraulic transport alternatives. Information of interest should include the land area needed to operate new staging/loading/unloading areas, greenhouse gas emissions, noise, air water quality parameters, and/or potential effects on fisheries and wildlife.

Will the proposed transportation activities described in the Plan require a highway access permit through MassDOT and if so, will the access permit require an Environmental Impact Report or Notice of Project Change through the MEPA process?

The T&D Plan does not adequately describe the treatment process and transport of acquired decant water. For instance, we understand that a dewatering station may be constructed on Mass Audubon's property within the staging area of Reach 5A. Will the remaining contaminated water be transported south along Holmes Rd as depicted and where is its destination?

Overall, the T&D Plan lacks detailed depictions of traffic intersections along the transport routes. Of concern to Mass Audubon is the intersection where traffic will enter and exit Canoe Meadows Wildlife Sanctuary from the staging area on Holmes Road. The access driveway in its current condition would not accommodate trucks or other large vehicles. The plan lacks any detail about how the intersection would be constructed safely, including vegetation management and coordination with neighbors. In addition, the Plan should include information about the existing natural gas pipeline infrastructure, above and below ground, in the vicinity of the intersection and access driveway onto Holmes Rd.

Thank you for the opportunity to review these plans, and for your consideration of these comments.

Regards,

Stephen Hutchinson
Senior Regional Director
Mass Audubon
[redacted]

Citizens for PCB Removal Comments to EPA for Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A - GE-Pittsfield/Housatonic River Site Rest of River (GECD850)

Citizens for PCB Removal (CPR) demands that GE and EPA use the important survey technology of LiDAR Mapping prior to any activities beginning in Reach 5A. The Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A - Section 10.2 Supplemental Data Collection - lists many future surveys to be performed in preparation for actual remediation activities.

LiDAR Mapping will be a **cost effective** method to determine not only these geographic and other important characteristics of Reach 5A but for all of the future Rest of River work locations. Note especially the **Applications of LiDAR Mapping** below. These mappings will also be invaluable in identification of any sensitive Staging Area and Temporary Access Road Locations for Reach 5A and their restoration following activities. They may also provide identification of Cultural Resources Assessment, additional habitat assessment activities and cultural resources investigations.

It should be noted that GE's current contractor Arcadis, an international engineering company headquartered in the Netherlands, is familiar with LiDAR Mapping as shown here on two of their projects: https://www.arcadis.com/en/improving-quality-of-life/digital-twins-improving-how-people-move-through-a-large-city.

https://www.arcadis.com/en/projects/europe/belgium/artificiele-intelligentie-voor-patrimoniumbeheer-meise.

The following is a description of LiDAR from:

https://digitash.com/science/geology/how-does-LiDAR-mapping-work/

LiDAR is an acronym for "light detection and ranging". LiDAR mapping is a remote sensing method that uses laser light to measure variable distances (ranges) to the Earth. It works on the same principle of radar and sonar. Radar and sonar use radio and sound waves, LiDAR use light waves from a pulsed laser.

How does LiDAR mapping work?

A LiDAR instrument principally consists of a laser, a scanner, and a specialized GPS receiver. Aeroplanes and helicopters are commonly used for acquiring LiDAR data over large areas. LiDAR beams several thousand harmless light pulses every second from an aircraft to map the ground below in very high resolutions.

LiDAR mapping works by first illuminating the target area with pulsed laser light. The LiDAR system records how long it takes for light pulses to return to the aircraft after bouncing off the terrain below.

The distance to the object is then calculated by applying the velocity of light.

d=ct2 where "d" is the distance to the target area, "c" is the speed of light (299792458 metres per second), and "t" is the amount of time taken by light pulses to hit a target and reflect back to the sensor.

A computer then takes this data and creates a digital terrain model that mirrors the surface. The difference in return times and wavelengths of these light pulses, combined with other data recorded

by the airborne system is used to create a precise digital three-dimensional (3D) representation of the shape of the Earth and its surface characteristics.

There are two types of LiDAR, namely the topographic LiDAR and the bathymetric LiDAR. Topographic LiDAR uses near-infrared laser light to map the land. The map that you see in the cover image is a topographic LiDAR map. The bathymetric LiDAR uses water-penetrating green light to measure riverbed elevations and seafloor. LiDAR maps can be colored to reflect different altitudes.

Applications of LiDAR mapping

LiDAR mapping has its applications in surveying, archaeology, geology, geography, geodesy, geomatics, geomorphology, seismology, forestry, atmospheric physics, laser altimetry, laser guidance, and airborne laser with swath mapping (ALSM).

It can see through tree canopies and other vegetation to see features that would be hidden from traditional techniques such as aerial photography. LiDAR mapping can reveal earthworks that remain hidden under vegetation and helps in the identification and protection of archaeological sites and monuments.

LiDAR mapping allows mapping professionals and scientists to examine both manmade and natural environments with high accuracy, precision, and flexibility. It helps further our knowledge and understanding of the terrain's past.

Why is LiDAR mapping critical as work continues at the EPA GE-Pittsfield/Housatonic River Site.

For a relatively small investment, LiDAR mapping of the Rest of River portion of the Site can provide a much more comprehensive description and identification of the actual remediation activity locations for historic record and future examination. It will create a more complete **"snapshot in time"** that all the costly labor intensive surveys have attempted to provide. This information will be invaluable as the work and future monitoring continues.

Most specifically the location of the Upland Disposal Facility location should be first on the list of projects of LiDAR mapping and as stated can be done independently of other sections of Rest of River work areas.

It would as be important to perform similar LiDAR mapping of the entire Site including the GE plant, Unkamet Brook, Allendale School, Hill 78 and Building 71 On-Plant Consolidation Areas (OPCAs), Silver Lake and the first Housatonic River ½ Mile and 1 ½ sections that have received remedial work.

Importance of cultural resources

Extra special concern must be made for investigation and discovery of Native American areas of historic importance. As rivers everywhere were always locations of settlements for living and spiritual rituals, the Housatonic River area potential work areas must contain relics and even burial grounds. These sensitive areas MUST take precedence over the desire of GE to push forward their work plans. Previous use of any of the potential staging areas and temporary roadways should not preclude total investigation for cultural sensitivity. Again LiDAR may help in the analysis of these possibly sacred grounds.

Disagreement with proposed removal actions leaving health and safety concerns

CPR has ALWAYS disagreed with partial removal and capping of riverbed, banks and floodplains of the Housatonic River. Especially now with the increased dangerous weather conditions of climate change, the potential destructive floods and water flow damage erosion to these locations are not only possible but become a certainty. Additional removal of contamination will result in a safer health future to the Housatonic watershed and its inhabitants. This is our once chance to do this correctly. Failure to completely remove the PCB contamination will ultimately cause recontamination of these areas due to the severe weather that is predicted.

Treatment of water from Reaches 5A

CPR is also concerned that GE will send contaminated water from the Rest of River work locations to the Pittsfield GE facility location for treatment. **Any increased use of that facility could result IN OUTFLOWS TO AREAS OF THE HOUSATONIC RIVER, THAT HAVE ALREADY BEEN REMEDIATED, TO CONTAIN EXCESSIVE AMOUNTS OF PCBS TO BE RELEASED BACK INTO THE RIVER!** CPR also believes that use of that facility could violate the current NPDES permit related to that facility and the outflows to the river from that permit.

Respectfully,

Charles Cianfarini

Interim Executive Director

Citizens for PCB Removal

Thank you for the opportunity to comment on the report entitled Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A. CTDEEP offers the following comments:

- The work plan identifies the Downstream Transport and biota Performance Standards, but does not discuss how the proposed remedial approaches will support attainment of these standards. The work plan should be revised to include a discussion of how the proposed approaches will be consistent with these performance standards
- The table of ARARs does not identify any Connecticut-specific ARARs, such as the CT Water Quality Standards. Given the applicability of the Downstream and biota performance standards to Reach 5A, Connecticut-specific ARARs should be included in this table.

Thank you for the opportunity to comment on this document

Traci Iott

Traci Iott
Supervising Environmental Analyst
Water Quality Group
Bureau of Water Protection & Land Reuse
CT Department of Energy and Environmental Protection

Email: [redacted]
Phone: [redacted]

Hello,

As co-chair of the group, Lenox Against the Dump, I would like to submit my comment in support of/consensus with that provided by Citizens for PCB Removal (attached) for the "Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A" document.

I agree with everything outlined in this excellent submission. As Mr. Cianfarini writes, "Any increased use of that facility could result IN OUTFLOWS TO AREAS OF THE HOUSATONIC RIVER, THAT HAVE ALREADY BEEN REMEDIATED, TO CONTAIN EXCESSIVE AMOUNTS OF PCBS TO BE RELEASED BACK INTO THE RIVER! CPR also believes that use of that facility could violate the current NPDES permit related to that facility and the outflows to the river from that permit."

Sincerely,
Debra Kelly
Co-Chair Lenox Against the Dump

Hello,

On behalf of the Clean Berkshire Collective, I would like to submit our comment in support of/consensus with that provided by Citizens for PCB Removal (attached) for the "Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A" document.

We agree with everything outlined in this excellent comment submission, and especially wish to emphasize that we are also very concerned by the idea that GE plans to send contaminated water from the Rest of River work locations to the Pittsfield GE facility location for treatment. As Mr. Cianfarini writes, "Any increased use of that facility could result IN OUTFLOWS TO AREAS OF THE HOUSATONIC RIVER, THAT HAVE ALREADY BEEN REMEDIATED, TO CONTAIN EXCESSIVE AMOUNTS OF PCBS TO BE RELEASED BACK INTO THE RIVER! CPR also believes that use of that facility could violate the current NPDES permit related to that facility and the outflows to the river from that permit."

This is another aspect of GE's approach to the overall remediation across the Superfund site that feels particularly "Kafkaesque" and like whack-a-mole - just moving the contaminants around the system (and risking further exposure in the process) rather than actually getting rid of them.

Sincerely,
Julia Thomas
Co-Director, Clean Berkshire Collective

Dear Mr. Tagliaferro and team,

GE's Housatonic River plan for "Environmental Remediation" would be better described as a plan for "Environmental Injustice."

Injustice to the environment - injustice to citizens of the Berkshires who will feel the impact and suffer the consequences of a seriously flawed "cleanup" for years to come - and injustice to the people of Lee, and in the nearby areas, who were hoodwinked into agreeing to house a toxic dump in the south Berkshires without proper discussion, understanding or representation.

In the name of environmental justice, we ask that the EPA suspend their approval to date of GE's plan for dredging and trucking toxic waste. In addition the EPA should demand that the plan be reworked to eliminate a dump in the Berkshires, and employ more modern, effective and less hazardous means to clean up the rest of the river.

Please use this link: https://www.ejnet.org/ej/principles.html

to remind yourselves of the behavior we expect of you and the standards you should be holding yourselves, and General Electric, to with regards to the cleanup of the Superfund site they created in the Berkshires.

Re: Conceptual Remedial Design / Remedial Action Work Plan For Reach 5A (pdf) (183 MB)
Public input on this document should be sent to R1Housatonic@epa.gov by Monday, January 22, 2024.

Sincerely,
Barbara Woike and James McNamara
[redacted]

Sent from my iPhone

CITY OF PITTSFIELD

DEPARTMENT OF COMMUNITY DEVELOPMENT, CITY HALL, 70 ALLEN STREET, RM 205, PITTSFIELD, MA 01201

MEMORANDUM

To: Chris Smith, EPA Remedial Project Manager Housatonic Site
From: James McGrath, Park, Open Space, and Natural Resource Program Manager
Date: January 22, 2024
Subject: *Comments on GE-Pittsfield/Housatonic River Site Conceptual Remedial Design/ Remedial Action Work Plan for Reach 5A*

The City of Pittsfield has reviewed the document referenced above and - working with Skeo under a Technical Assistance Services for Communities (TASC) arrangement with EPA - we offer brief comments that summarize the findings and recommendations of the technical reviewers.

The purpose of the Conceptual RD/RA Work Plan is to present preliminary design information for the remediation of in-river sediment, backwater sediment, sediment in certain other waterbodies, riverbank soil, floodplain soil, and vernal pools within Reach 5A of the ROR. The work plan evaluates data collected during the Reach 5A PDI (and relevant historical data) and presents preliminary remediation areas for each of those media in accordance with the Performance Standards and other requirements specified in the Revised Final Permit.

The Conceptual Remedial Design/Remedial Action Work Plan (Conceptual RD/RA WP) represents a compilation of pre-design investigation results for polychlorinated biphenyl (PCB) sample analysis from historic and current sediment, riverbank and floodplain soil (residential and non-residential) investigations, as well as site-wide studies including the Baseline Restoration Assessment, Cultural Resources Assessments, Water Withdrawal and Climate Change documents addressing conditions within Reach 5A.

The document provides a sizable amount of information that is dependent on a considerable amount of previously summarized information. This document represents design activities that are approximately 30% complete, a very critical point in time in the Reach 5A RD/RA process for community review and involvement. At this critical point it is imperative to bring forth foundational issues such as possible floodplain soils being mobilized by river channel movement, sufficient cap design to contain residual subsurface sediment issues, constructability coordination of remedial actions and conservative construction footprint assumptions (as examples). Having thoroughly reviewed the recommendations, the City of Pittsfield offers the Skeo findings as our

comments on this document and would ask that EPA consider them as further review and comment incorporation takes place.

The Skeo comments focus on the following general topics:
1. Opportunities to connect and coordinate proposed remedy actions between the various media of riverbed sediments, riverbank soils and adjacent floodplain soils (from both residential and non-residential areas).
2. Riverbank armoring and proposed riverbed sediment Cap designs to control erosion.
3. Feature placement and sampling to address possible community quality of life considerations related to staging areas and temporary access roads.
4. Additional data needs identified by TASC based on the review of the PCB information for all media, and for baseline restoration monitoring to help define restoration goals and determine construction impacts.
5. Opportunities for coordination with the community to benefit GE, EPA and the community.

We appreciate the opportunity to provide comments on plans and studies associated with the Rest of River clean up and are grateful for the technical assistance provided by Skeo through EPA.

Sincerely,

James McGrath, CPRP
Park, Open Space, and Natural Resource Program Manager

Technical Assistance Services *for* Communities
GE-Pittsfield/Housatonic River Site
Comments on Conceptual Remedial Design/ Remedial Action Work Plan for Reach 5A
January 18, 2023

Contract No.: 68HERH21A0018
Call Order Number: 68HERH22F0082 (14.0.0 OSRTI – Regional & Headquarters TASC/CI Support)
Technical Direction: R1 2.9.14 GE Pittsfield

Technical Assistance Services for Communities (TASC)
Comments on Conceptual Remedial Design/Remedial Action
Work Plan for Reach 5A, September 2023

Introduction

This document provides TASC comments on the GE-Pittsfield/Housatonic River – Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A. This document is for the Berkshire Regional Planning Commission (BRPC), the city of Pittsfield, Massachusetts Audubon, Berkshire Environmental Action Team, the town of Lee and other entities to use as they develop comments to share with the U.S. Environmental Protection Agency (EPA). TASC does not make comments directly to EPA on behalf of communities. This document is funded by EPA's TASC program. The contents do not necessarily reflect the policies, actions or positions of EPA.

Pursuant to the Revised Resource Conservation and Recovery Act (RCRA) Permit Modification (Revised Final Permit) issued by EPA to the General Electric Company (GE) on December 16, 2020, for the Rest of River (ROR) portion of the GE-Pittsfield/Housatonic River site, GE developed and submit a Statement of Work (SOW) specifying the deliverables and activities that GE will conduct to design and implement the ROR Remedial Action. Section II.H.6 of the Revised Final Permit and Section 4.3.3.1 of the Final Revised SOW require GE to prepare a Conceptual Remedial Design/Remedial Action (RD/RA) Work Plan following completion of pre-design investigation (PDI) activities and related reporting for each Remediation Unit (RU).

Summary

The September 2023 Conceptual RD/RA Work Plan for Reach 5A has 12 sections:

- Introduction
- Reach 5A Performance Standards and Corrective Measures

- Reach 5A Characteristics and Existing Data
- Preliminary PCB Evaluations
- Remedial Design Process and Considerations
- Applicable or Relevant and Appropriate Requirements
- Quality-of-Life Considerations
- Sustainability Considerations
- Summary and Preliminary Evaluation of River Water Withdrawals and Uses
- Supplemental Data Collection and Treatability Testing
- Remedial Design Schedule
- References

The purpose of the Conceptual RD/RA Work Plan is to present preliminary design information for the remediation of in-river sediment, backwater sediment, sediment in certain other waterbodies, riverbank soil, floodplain soil, and vernal pools within Reach 5A of the ROR. The work plan evaluates data collected during the Reach 5A PDI (and relevant historical data) and presents preliminary remediation areas for each of those media in accordance with the Performance Standards and other requirements specified in the Revised Final Permit. The schedule for development of the Final RD/RA Work Plan for Reach 5A is dependent on the following activities and deliverables:

- EPA approval of the PDI Summary Report for Non-Residential Floodplain Exposure Areas (submitted concurrently with the Conceptual RD/RA Work Plan);
- EPA approval of the PDI Summary Report for Sediment and Riverbanks (submitted concurrently with this Conceptual RD/RA Work Plan);
- EPA approval of this Conceptual RD/RA Work Plan and other work plans provided as appendices to it, including the Supplemental Data Collection Work Plan (Appendix I) and the Treatability Study Work Plan for Reach 5A (Appendix H);
- EPA approval of the Reach 5A Baseline Restoration Assessment Report (submitted to EPA on August 25, 2023), completion of the associated supplemental BRA field activities, and EPA approval of the subsequent addendum to the Reach 5A BRA Report;
- EPA approval of the Restoration Criteria Report (submitted to EPA on August 25, 2023);
- Completion of supplemental data collection activities and EPA approval of the Supplemental Data Collection Summary Report;
- Completion of treatability testing and EPA approval of the Treatability Studies Summary Report;
- EPA approval of the Phase IB Cultural Resources Survey Work Plan (submitted concurrently with the Conceptual RD/RA Work Plan) and completion of the associated field surveys;
- EPA approval of the Phase IB Cultural Resources Survey Report;
- EPA approval of the Phase II CRA Work Plan (if determined to be necessary) and completion of the associated field activities;
- EPA approval of the On-Site and Off-Site Transportation and Disposal Plan (scheduled for submittal in October 2023); and
- EPA approval of the Quality of Life Compliance Plan (scheduled for submittal in December 2023).

TASC Comments

The Conceptual Remedial Design/Remedial Action Work Plan (Conceptual RD/RA WP) represents a compilation of pre-design investigation results for polychlorinated biphenyl (PCB) sample analysis from historic and current sediment, riverbank and floodplain soil (residential and non-residential) investigations, as well as site-wide studies including the Baseline Restoration Assessment, Cultural Resources Assessments, Water Withdrawal and Climate Change documents addressing conditions within Reach 5A. The document provides a robust amount of information that is dependent on a considerable amount of previously summarized information. This document represents design activities that are approximately 30% complete (SOW, pdf page 62). A "30% completion status" represents a very critical point in time in the Reach 5A RD/RA process for community review and involvement. At this critical point it is imperative to bring forth foundational issues such as possible floodplain soils being mobilized by river channel movement, sufficient cap design to contain residual subsurface sediment issues, constructability coordination of remedial actions and conservative construction footprint assumptions (as examples). Several TASC comments were made to capture opportunities where the community could contribute valuable recommendations to the eventual Final RD/RA.

In general, the Conceptual RD/RA WP fulfills the requirements set forth within the Statement of Work (SOW) and Revised Final Permit. As part of this review, TASC compared elements of the Conceptual RD/RA WP to the following documents and associated TASC comment reviews:

- AECOM, 2022. Revised Reach 5A Baseline Restoration Assessment Work Plan.
- AECOM, 2022. GE-Pittsfield/Housatonic River Site Supplemental Phase IA Cultural Resources Assessment Work Plan.
- AECOM, 2022. GE-Pittsfield/Housatonic River Site Rest of River Supplemental Phase IA Cultural Resources Assessment Report for the Housatonic Rest of River – Public Release Version.
- AECOM, 2023. Housatonic River Reach 5A Baseline Restoration Assessment Report, 2023.
- AECOM, 2023. Restoration Performance Objectives and Evaluation Criteria Report.
- AECOM, 2023. GE-Pittsfield/Housatonic River Site, Rest of River, Phase IB Cultural Resources Survey Work Plan for Reach 5A.
- AECOM, 2023. Pre-Design Investigation Summary Report for Reach 5A Sediment and Riverbanks. Housatonic River – Rest of River.
- Anchor QEA, LLC, 2021. Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas.
- Anchor QEA, LLC, 2021. Second Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas.
- Anchor QEA, LLC, 2022. Sustainability and Climate Adaptation Plan.
- Anchor QEA, LLC, 2022. Water Withdrawal and Uses Plan for the Rest of River Remedial Action.
- Anchor QEA and AECOM, 2017. Floodplain Pre-Design Investigation Work Plan Reach 5A.
- Anchor QEA and AECOM, 2021. Pre-Design Investigation Work Plan for Reach 5A Sediment and Riverbanks. Housatonic River – Rest of River.

- Anchor QEA and AECOM, 2023. GE-Pittsfield/Housatonic River Site. Vernal Pool Pilot Study Work Plan.
- Anchor QEA and Arcadis, 2023. Housatonic River – Rest of River. Pre-Design Investigation Summary Report for Reach 5A Non-Residential Floodplain Exposure Areas.

TASC comments focus on the following general topics:

1. Opportunities to connect and coordinate proposed remedy actions between the various media of riverbed sediments, riverbank soils and adjacent floodplain soils (from both residential and non-residential areas).
2. Riverbank armoring and proposed riverbed sediment Cap designs to control erosion.
3. Feature placement and sampling to address possible community quality of life considerations related to staging areas and temporary access roads.
4. Additional data needs identified by TASC based on the review of the PCB information for all media, and for baseline restoration monitoring to help define restoration goals and determine construction impacts.
5. Opportunities for coordination with the community to benefit GE, EPA and the community.

TASC Comments

<u>Connection and Coordination of Proposed Remedy Actions</u>

1. *Residential Floodplain Soils Connection and Coordination:* As stated in the Conceptual RD/RA WP (Section 5.5, pdf page 94), "riverbank soil in Reach 5A will be removed, and the riverbank will be reconstructed and stabilized to meet the Performance Standards summarized in Section 2.3. This will include a combination of removal to address PCB-contaminated eroding riverbanks and supplemental riverbank remediation based on constructability considerations. The latter, while not required by the Revised Final Permit, will include remediation of small sections of bank that do not require remediation but are situated between banks requiring remediation and of banks where the erosion potential is relatively high and the adjacent floodplain PCB concentrations are elevated." The Conceptual RD/RA WP goes on to state that "in general, the riverbank soil removal activities will be conducted concurrently with the adjacent in-river sediment removal activities, although in areas where riverbanks are easily accessible from the adjacent floodplain, they may be excavated from the top of bank." This latter statement indicates that the forthcoming remedy actions associated with riverbanks and riverbed sediments will be appropriately coordinated. It may also be possible to coordinate these efforts with adjacent floodplains soils removal activities (both residential and non-residential). Results of the total PCB Thiessen polygon interpretation for residential soils are shown in series of figures for each parcel. TASC overlayed the parcel figures identified in the below table with results from:
   - riverbank soils total PCBs and recommended remedial action areas (Figures 4-6a through 4-6i, pdf pages 194-202),
   - river channel conceptual Cap types by river segment (Figure 5-4, pdf page 230),

- presence of Core area habitats/vernal pools and backwater remedy areas (Figure 4-9, pdf page 73).

Results from these combined lines of information yielded the following recommendations to potentially combine remedial action activities:

Parcel	River Station	Observation	Recommendation
I6-3-33 (Figures 1-1 through 1-7)	~36+00 – 37+00	PCBs occur at depth close to riverbanks with erosive riverbanks on both sides.	The installation of riverbank armoring around river station 37+00 on the east side would assist to keep PCBs from eroding into the channel.
J6-2-3[(a)] (Figures 2-1 through 2-4)	~54+00 – 56+00	PCBs > 50 mg/kg occur 1-2 ft below ground surface (bgs) adjacent to erosive riverbank, and this is a stretch of the river proposed to have a Cap type C installed.	A Cap type C is selected for this channel segment and will substantially armor the river channel bottom thereby potentially routing erosive scour to the riverbanks. This area has an "extreme" Near Bank Stress (NBS) score. Installation of riverbank armoring at river station ~55+00 on the east side may assist to keep PCBs from eroding into the channel.
J6-3-1 (Figures 3-1 through 3-11)	~53+00 – 55+00	This property has significant PCBs (at depths down to 11 ft bgs) along the property boundary by the river. This riverbank is erosive and will have a supplemental riverbank remedial action (shown Figure 4-6c).	There are substantial PCBs at depth in the residential soils adjacent to the riverbanks that are to be removed. These efforts could be coordinated. If the deeper residential soils are not going to be removed, it may be appropriate to armor the riverbank on the west side to minimize erosion.
J3-1-11 (Figures 4-1 and 4-2)	~127+00	This property is very closely located to a backwater to be remedied (BW5A -3).	The remedial action efforts for these features could be coordinated.[(b)] As per footnote (b) below, the removal efforts will be coordinated but removal within the residential area will be lessened. This does not seem appropriate since the purpose is to achieve Performance Standards protective of human health within the residential area.
J3-2-4 (Figures 5-1 through 5-4)	~157+00	This property boundary appears to be a part of a proposed riverbank "supplemental" remedy. This property has PCBs > 50 mg/kg at 1-3 ft bgs.	It is difficult to determine if the riverbank "supplemental remedy" will remove these PCBs, therefore if this contaminated area were to remain in place, it would be beneficial to armor this riverbank (at river station ~157+00 on the east side) to ensure PCBs are not eroded into the channel.
K3-1-2 (Figures 6-1 through 6-3)	~173+00	This property is bounded at the river by a "supplemental riverbank remedy."	It appears the residential soils effort could be coordinated with riverbank soils removal shown on Figure 4-6g at river station ~173+00.
K2-1-10 (Figures 7-1 through 7-5)	~180+00 – 182+00	The proposed remedial action for this parcel appears to coincide with riverbank soils removal. This parcel has PCBs > 50 mg/kg at 0-3 ft bgs.	The residential soils are identified as requiring a "not to exceed" remedial action along the shoreline. It appears that this effort could be coordinated with riverbank soils removal shown on Figure 4-6g at river station ~181+00.
Notes:			

(a) PCBs exceed 50 mg/kg at the 1-2 foot depth interval as shown in Figure 2-3. The surface maps (Figures 2-1 and 2-2) show this area as a "not to exceed" remedial action area, therefore it is difficult to determine if the PCBs at the lower depth will be addressed. If they are not removed, then the recommended bank armoring may be applicable. (b) Footnote #2 on page 8 of Appendix E indicates the removal area for this property has been "reduced due to overlap with backwater BW5A-3 that is already being remediated to achieve an average PCB concentration of 1 mg/kg."

The community may want to ask EPA if the above summarized remedial actions between residential soils and riverbank soils could be coordinated.

2. *Non-Residential Floodplain Soils Connection and Coordination:* In order to address the Revised Final Permit performance standard (pdf page 27), which states "for Reach 5A banks that do not otherwise require remediation (pursuant to Sections II.B.2.a.(2)(a) through II.B.2.a.(2)(b)), the Permittee shall also evaluate the PCB data, erosion potential, adjacent floodplain removal (if any) constructability issues, and likelihood of future downstream transport at such concentrations should such banks erode, and based on these factors, shall consider supplemental riverbank removal, and shall propose any further action consistent with the evaluation above," GE should compile (by location using river stationing) PCB data for sediment, and riverbank soils, and floodplain soils as well as the erosive potential of the riverbanks, stream morphology considerations, and constructability concerns.

   Appendix F of the Conceptual RD/RA WP provides narrative and map summaries of PCB evaluations for floodplain soils within non-residential exposure areas. GE coordinates their proposed remedial action activities with other media remedial actions, however as stated within Appendix F "3x3 meter grid cell application optimizes removal area volumes to minimize removal footprint required to achieve the applicable performance standard" (Appendix F, page 7). This is an appropriate first step to help delineate areas requiring remedial action, however the grid approach produces "islands" of proposed removal activity. There may be opportunity to combine removal areas with adjacent riverbank soils to coordinate remedial action goals. TASC summarizes some observed possible opportunities for RA connection and coordination by EA in the below table. Furthermore, as shown in Appendix F, certain floodplain soils PCBs may not be removed, therefore there may be opportunity to better armor the riverbanks to help eliminate future erosion concerns related to these contaminated areas.

EA (Appendix F Figure)	River Station	Non-Residential Remedy Recommendation	Adjacent Riverbank Recommendation
EA 2 (Figure F-4a)	0+00 – 4+00	The two removal areas could be blended with adjacent supplemental riverbank soils removal.	Significant PCBs occur at depth. If these soils are not removed, then this bank could benefit from armoring.
	~17+00	The removal area could be conservatively blended with adjacent riverbank removal to address a larger PCB contamination area.	
	~30+00	The removal area is closely located to 5A-VP-9 which is not mentioned in the EA 2 discussion in	

		Appendix F. The removal actions for these two features could be coordinated.	
EA 4 (Figure F-4b)	~19+00 – 22+00	The shown removal areas are very small, isolated islands of material. It seems suitable to blend these areas together with removal areas shown for EA 2a.	
EA 4/61 (Figure F-4c)	~8+00 – 10+000	The removal area is immediately adjacent to a backwater/other water body removal area that could be combined.	
EA 5 (Figure F-4d)		The two removal areas are closely located and could be blended. These two areas touch upon vernal pool 5A-VP-13 which is a non-pilot pool with remediation needed, yet to be determined. This may be a proactive case where 5A-VP-13 should have a removal since it is surrounded by removal actions associated with EA 5 and residential (16-3-13) and non-residential removal areas to the east within EA 7.	
EA 7 (Figure F-4e)	~39+00	Refer to recommendation for EA 5. Riverbank soils are to be removed at ~ river station 39+00 which co-occurs with the removal area. These two actions could be coordinated.	The area at river station 39+00 is highly erosive. If PCB soils are not entirely removed, this bank may require armoring.
EA 8 (Figure F-4f)	~35+00	The removal areas are immediately south of removal areas planned for adjacent residential settings. These efforts could be combined.	
EA 10 (Figure F-4g)	~60+00	The removal area adjacent to vernal pool 5A-VP-19 occurs on a Canoe meadows trail. The removal could be blended with the additional removal shown on the trail, adjacent to the river, to create a uniform trail upon remedy completion. Vernal pool 5A-VP-19 occurs between two removal areas; it is a non-pilot pool with remediation needed, but yet to be determined. Its may be appropriate to conduct a removal at this pool because it is surrounded by other removal actions.	
	~85+00	A small removal area is shown adjacent to the river within an area that is highly erosive that will encompass an area where riverbanks are to be removed. These activities could be combined. There is no riverbank soil removal planned, however it may be prudent to do so.	The area from ~86+00 to 87+00 is highly erosive and contains significant PCBs. If these PCBs are not removed, then the banks could benefit from armoring.
EA 16 (Figure F-4i)	~78+00 – 81+00	The two removal areas occur in close proximity to each other and supplemental riverbank soils removal areas. These efforts could be combined. The northern removal area is closely located to 5A-VP-27, a vernal pool to be pilot tested for amendment treatment. It is important to minimize disturbance to this feature, therefore it may be appropriate to move the bulk of materials removal further south.	
EA 18 (Figure F-4j)	~99+00	The shown removal area is very small in relation to the amount of PCBs that occur in the floodplain soils and adjacent riverbank soils. This area may benefit from the soils removal to blend with the	This segment of river is highly contaminated and erosive. It would benefit from riverbank armoring if PCBs are to be left in place.

		riverbank soils removal and sediment removal of E-OWB3 Lower Sykes Brook.	
EA 20 (Figure F-4l)	~120+00 – 125+00	There are multiple soil removals that could be blended together. There is one small riverbank soil removal planned at river station ~ 121+00 that could be combined with the larger removal area.	The riverbanks at the lowest removal area are very erosive. If these materials are removed, the riverbank could benefit from armoring upon completion of the removal.
EA 22 (Figure F-4m)	~123+00	There are two vernal pools (5A-VP-50 and 5A-VP-49A) that are non-pilot pools with remediation yet to be determined; these pools are closely associated to the soil removal area. It may be prudent to choose removal for these two vernal pools.	
EA 24 (Figure F-4n)	~130+00 – 145+00	This EA encompasses multiple VPs with remedies yet to be determined, two VPs selected for removal pilot testing and several soil removals. This highlights a question as to whether 5A-VP-52 is an appropriate pilot test pool given its close proximity to removal actions. It may be more appropriate to choose 5A-VP-55, which is adjacent to another VP chosen for pilot removal testing (5A-VP-57). It may be appropriate to blend removals of the two soils areas in the south with the adjacent riverbank soils removal and possible sediment removals for 5A-VP-64 and 5A-VP-65 to achieve the combined EA Performance Standards.	
EA 33 (Figure F-4p)		Since the remedial actions for vernal pools 5A-VP-79, 5A-VP-80 and 5A-VP-81 have yet to be determined, it may be more appropriate to move the soil removal that exists between these pools to the south where there is a high PCB area adjacent to the river and in close proximity to BW5A-6, a feature to have a sediment removal and cap remedial action.	
EA 34 (Figure F-4q)	~205+00 – 209+00	This figure shows a very small soil removal area. This area is adjacent to riverbank soil removal segment. It seems appropriate to combine these two removals and thereby enhance the removal of PCBs.	The area chosen for soil removal is highly erosive and contaminated by PCBs. If some of the PCBs are to be left in place, this area would benefit from riverbank armoring.

The community may want to ask EPA if the above summarized remedial actions between non-residential soils, residential soils, vernal pool sediment and riverbank soils could be coordinated. GE should compile (by location using river stationing) PCB data for sediment, and riverbank soils, and floodplain soils as well as the erosive potential of the riverbanks, stream morphology considerations, and constructability concerns.

3. *Riverbank Soils Connection and Coordination:* Review of Appendix D Table D-1 identified several riverbank locations with elevated PCBs (> 20 mg/kg) that were not classified for any remedial action, and had Bank Erosion Hazard Index (BEHI) scores > 27 or a Near Bank Stress (NBS) of extreme. These locations were not pulled forward in the RD/RA process since they did not meet the performance criteria of having **both** BEHI

and NBS results with high scores. However, these locations should be reviewed to determine if potential future channel movement due to possible remedial action disturbance could place these areas as settings that would quality as having a likelihood of future downstream transport of PCB as described in Section II.B.2.a.(2)(c) (Permit pdf page 27). If these locations do not warrant further remedy consideration, then it may be prudent to armor the riverbank to protect the riverbank soils from future erosion. A summary of areas for possible additional remedial action consideration is provided in the below table.

Bank	Location ID	BEHI Rating	Total PCB (mg/kg)	Page within Table D-1
East	RB-E-009-20	30.3	236.0	1/24
East	RB-E-042-86	35.9	33.5	3/24
East	RB-E-044-03	28.3	44.2	3/24
East	RB-E-075-05	30.0	24.6	4/24
East	RB-E-113-04	30.1	24.5	6/24
East	RB-E-113-38	28.6	37.0	6/24
East	RB-E-115-80	28.9	39.5	6/24
East	RB-E-117-19	35.4	22.5	6/24
East	RB-E-144-76	35.8	25.3	7/24
East	RB-E-144-99	35.8	29.3	7/24
East	RB-E-145-20	35.8	35.2	7/24
East	RB-E-184-53	31.3	33.2	9/24
East	RB-E-186-83	35.4	21.6	9/24
East	RB-E-199-85	29.4	22.4	10/24
East	RB-E-243-65	31.3	20.4	12/24
West	RB-W-000-50	26.3	102.7	12/24
West	RB-W-006-58	37.7	45.8	13/24
West	RB-W-012-69	15.2, with an NBS of "extreme"	48.2	13/24
West	RB-W-161-46	30.8	30.3	20/24
West	RB-W-161-74	30.8	21.1	20/24
West	RB-W-180-63	33.1	32.0	21/24
West	RB-W-181-11	28.7	27.4	21/24
West	RB-W-226-36	27.1	171.3	23/24
West	RB-W-227-28	27.1	22.8	23/24
West	RB-W-235-10	Not rated	24.8	23/24
West	RB-W-242-37	31.1	52.3	24/24
West	RB-W-242-91	31.1	24.5	24/24

The community may want to ask EPA if certain portions of riverbanks with elevated PCBs co-located with potentially erosive materials (as shown with high BEHI measurements) could be considered for supplemental remedial action of amended sediment bed materials with aggressive erosion protection layers.

4. *Evaluation of Potential Future River Flow Pathways (use of Hydrologic Engineering Center River Analysis System [HEC-RAS] image):* The community has expressed concern that the dynamic flow pathway of the river may cause future issues by moving out of the current channel and scouring floodplain soils, or by following historic/abandoned meander flow pathways. Figure 3-8 (pdf page 31) of Appendix G depicts an example of the Terrain Data and River Path from the HEC-RAS Model near the downstream end of Reach 5A (with cross section locations). This information was

foundational to the hydrologic/hydraulic analysis and modeling of reaches 5 and 6. This image was quite compelling since it provides a visual understanding of the topography and possible flow pathways of the river channel. The image shows possible historic meander pathways of the river (starting at the top of the figure between the second and third cross section lines on both the east and west sides of the existing channel, and between the fourth to the seventh cross section lines). Some of these features are backwater habitats addressed as part of this RD/RA, while others are not. This information could be used to identify additional areas for remedial action due to possible future flow pathways if the river channel were to change course and realign with the historical flow pathway. Furthermore, the topographical relief shows other possible areas for future flow channel changes.

The community may want to ask EPA if the terrain data images could be reviewed to possibly identify areas that would be suitable for supplemental remedial action based on the potential for the river channel to change flow pathway in the future.

Riverbank Armoring and Riverbed Cap Comments

5. Section 5.5 of the Conceptual RD/RA WP describes the riverbank remediation/stabilization recommendations. The document goes on to describe the remedy approaches to be completed after riverbank soil removal. The document acknowledges that additional riverbank soils may be remedied to include "small sections of bank that do not require remediation but are situated between banks requiring remediation and of banks where the erosion potential is relatively high and the adjacent floodplain PCB concentrations are elevated" (pdf page 94). Section 5.5 focuses on returning the riverbank to its original slope. The document states "During final design, a slope stability evaluation will be performed, and details related to riverbank excavation design will be provided. Following excavation to the specified limits, the excavated riverbanks will be reconstructed to minimize erosion considering the principles of Natural Channel Design, as appropriate… The design for reconstruction of the riverbanks will be described in the Final RD/RA Work Plan for Reach 5A and may include revegetation, bioengineering, or armoring based on location-specific conditions." This final statement indicates a tremendous amount of design of riverbank reconstruction will be forthcoming. This is concerning because the riverbanks are erosion-sensitive areas that need to be carefully reconstructed to minimize exposure of adjacent contaminated soils. It seems appropriate to provide a thorough riverbank "Cap" design approach similar to the thorough riverbed sediment Cap design (Appendix A) which takes into account the river morphology, flow conditions, riverbank soils erosion characteristics, and adjacent soils PCB concentrations.

The community may want to ask EPA if the Final RD/RA could include conceptual diagrams depicting riverbank armoring design features, and to ask GE if the armoring can be designed to include special considerations for areas prone to erosion and areas located close to significant PCB contamination in riverbank soils.

6. In addition to the concern described in the previous comment, the document states, "Under those post-remediation conditions, the cross-sectional geometry of the river channel and banks will be different from current conditions, and there will likely be changes to the channel bottom roughness. These changes between pre- and post-remediation conditions could affect hydraulic characteristics in the river" (pdf page 77). This is an important consideration to be enveloped into the Final RD/RA riverbank Cap designs.

   The community may want to ask if the Final RD/RA will include riverbank Cap designs that accommodate the possible hydrologic changes that may occur as a result of remedial actions.

7. Figure 5-4 (pdf page 230 of the Conceptual RD/RA WP) provides the extents of conceptual cap types in Reach 5A. The footprint shown within the figure was founded on the results of channel modeling which incorporates measures of channel morphology and PCB occurrence. TASC reviewed the proposed Cap design elements in Figure 5-4 in coordination with sediment PCB data polygons shown in Figures 4-3a through 4-3i, riverbank measures of erosion potential using the BEHI and NBS results (Figures 4-6a through 4-6i), and Reach 5A vernal pool and core habitat areas (shown in Figure 4-9). When these layers of information are combined, river channel segments that could benefit from additional cap armoring become apparent. This additional armoring may serve to add a protective layer on top of substantial PCB-contaminated sediment, add armoring to protect an erosive area, and/or add armoring to help keep scouring flow away from adjacent sensitive habitats (vernal pools and/or Core habitats). The table below lists segments of the Reach 5A river channel that may benefit from placement of a more conservative Cap for these reasons. The segments are summarized by river station, associated concerns and recommendation for Cap changes.

River Station	Concerns	Recommendation	Sources of Information
62+00 – 69+00	Elevated PCBs	Consider Cap Type B instead of A	Figure 4-3a
76+50 – 82+00	Elevated PCBs, Adjacent to Core Area	Consider Cap Type B instead of A	Figures 4-3d and 4-9
91+00 – 98+00	Elevated PCBs, Adjacent to Core Area	Consider Cap Type B instead of A	Figures 4-3d and 4-9
156+00 – 168+00	Elevated PCBs, Adjacent to Core Area	Consider Cap Type B instead of A	Figures 4-3g and 4-9
171+00 – 174+00	Elevated PCBs, Adjacent to Core Area	Consider Cap Type B instead of A	Figures 4-3g and 4-9
180+00 – 185+00	Elevated PCBs, Adjacent to Core Area	Consider Cap Type B instead of A (which would blend with Cap planned at ~ river station 185+00)	Figures 4-3h and 4-9
214+00 – 235+00	Elevated PCBs, Adjacent to Core Area	Consider Cap Type B instead of A	Figures 4-3h and 4-9

   In addition to the above adjustments to the Cap, it is also assumed that cap placement would be contoured to assist with erosion control of adjacent riverbanks. As expected, the

outside bend of the river channel is often comprised of erosive riverbank materials. Erosive scour created by flows around a river bend could be dampened if the cap materials were to slope with the riverbank thereby creating assistance in the armoring (examples of segments of the river channel where sloping of the Cap to assist with riverbank armoring include between river stations 50+00 – 60+00 and 105+00 – 110+00 on the east side).

The community may want to ask EPA if additional consideration of applying conservative Cap amendments in the above identified river station segments could be completed as part of the forthcoming Final RD/RA. In addition, the community may want to ask EPA to clarify whether Cap installation will contour with the riverbed up to the adjacent riverbank to assist with armoring of erosive riverbanks.

8. Section 5.3 of the Conceptual RD/RA WP summarizes the engineered Cap design features. Text provided on page 81 states "it is anticipated that the erosion protection layer will also serve the function of the habitat layer… since.. remediation conducted previously in the upper two miles of the East Branch (where large armor stone was placed as erosion protection throughout the entire reach) has demonstrated that sediment transport and deposition will naturally return the surface of the cap to a condition that is consistent with the native riverbed over time… (GE 2012)." Learning from previous remedial actions of similar characteristics (Housatonic River, PCBs, similar morphology etc.) is a very compelling line of evidence for Reach 5A Cap considerations. It is strongly recommended that any evidence gathered from the 2012 Cap restoration process be summarized in the forthcoming Final RD/RA to understand effectiveness of Cap features (and issues) and possible restoration success timelines.

The community may want to ask EPA if results from previous Cap remedial actions upgradient in the Housatonic River can be summarized and described in the Final RD/RA to better understand if the proposed Cap designs are appropriate and how long restoration may take.

9. The Sediment and Riverbanks Summary Report (AECOM, 2023; Figures 2-11kk through 2-11bbb pdf pages 109 to 126) depict sediment PCB sample results at a depth of 2 to 3 feet. The results from these depth fractions identified elevated PCB concentrations at certain locations. Comparison of these locations to Conceptual Cap types shown in Figure 5-4 indicates that these high PCB areas will all be covered by "Cap A" which provides a gravel armor cap. Given that sediment removal may not eliminate consolidated/packed sediments at depth, there is the potential for these deeper sediments to remain in place. Therefore it seems appropriate to apply a more conservative Cap design to these areas. A summary of these areas includes:

- River station 78+00 has two samples with concentrations greater than 50 mg/kg (Cap A area),
- Between river stations 149+00 and 150+00 has one sample with a concentration greater than 25 mg/kg PCB (Cap A area),
- River station 91+00 has one sample with a concentration greater than 100 mg/kg PCB (Cap A area), and

- Between river stations 149+00 and 150+00 has one location with a concentration greater than 50 mg/kg PCB (Cap A area).

The community may want to ask EPA if a conservative Cap design should be applied to these areas where PCBs occur at depths that may not be removed using a remedy that relies on pumping of unconsolidated sediments.

10. Backwater BW5A-2 has significant PCB concentrations (>50 mg/kg) at depths from 2 to 3 feet (AECOM, 2023 Figure 2-12b pdf page 128). This depositional pattern raises questions about PCB deposition within backwater settings since this feature appears to be an abandoned meander of the river channel and represents a possible future flow pathway. Given the dynamic morphology of this river channel, it may again meander and potentially scour and expose contaminated sediments that are currently at depth. Similar possible settings occur at BWA-3 (AECOM, 2023 Figure 2-12c, pdf page 129) and BW5A-5 (at the confluence of the backwater with the river channel [AECOM, 2023 Figure 2-12e, pdf page 131]). The Conceptual RD/RA WP proposes Cap Type A with gravel armor cap components at the outfall to each backwater habitat (Figure 5-4 of the Conceptual RD/RA). Consideration of selection of a more conservative Cap design should be given to these features in order to protect any residual PCBs left in place at depth from being released during future scouring flow events.

The community may want to ask EPA if conservative Cap design features should be considered for backwater (and other water bodies that are treated similar to backwaters as part of the RD/RA process) to protect residual PCBs left in place at depth in case future scouring were to occur.

Support Area Comments

11. Figures 5-6a through 5-6e (pdf pages 232-236 of the Conceptual RD/RA WP) provide maps of recommended preliminary staging areas and temporary access roads to support the forthcoming remedial actions. TASC reviewed these maps and developed general and specific comments for the staging areas and access roads. These comments and recommendations are provided by figure in the below table.

Figure Reference and Topic	Staging Area # or River Stations	Comment/Question/Recommendation
Figure 5-6b		
General		This figure would benefit from an additional layer depicting the Core area habitats.
	~36+00 – 37+00	This area shows overlapping residential remedy area with a vernal pool remedial action (5A-VP-13). Is this overlap accurate?
Staging Areas	Staging Area 1	This area is closely located to a residential setting. Is it possible to move this feature to the west to an open area within EA 1?
Access Roads		Should an additional road be added at river station 10+00 or 15+00 to connect the access road to Staging Area 1?
		There are no access roads connected to vernal pools: 5A-VP-4, and 5A-VP-7.
		Vernal pool 5A-VP-1 is a long/large feature with minimal access. Is there a need to add an additional access road?

	15+00 – 45+00	This river channel segment has only two direct access roads and is closely located to an adjacent access road which may create an overlarge construction footprint from equipment activity. The lack of access could be addressed in part by moving Staging Area 1 to the west.
Figure 5-6c		
General		This figure would benefit from an additional layer depicting the Core area habitats.
		The designed supporting features were well chosen to minimize impacts to core area habitats.
Staging Areas	Staging Area 2	This area is very small in size and closely located to a residential area. Can this area be eliminated and have this support area accommodated by adding additional area to Staging Areas 3 and/or 4?
	Staging Areas 3 and 4	These areas could serve as possible future mitigation areas for impacts to core areas and non-residential soil removals south of BW5A-1. Staging Area 3 reclamation should be coordinated with the Canoe Meadows trustees.
Access Roads	~56+00 – 65+00, and 90+00 – 110+00	There is a significant length of river channel that does not have any access road. It was assumed that heavy equipment would use the channel itself to move materials to receiving haul trucks where access roads are denoted. This means that there will be a lot of back and forth driving of equipment within the channel itself unless additional secondary access roads are linked to the main river channel.
		There is a secondary road co-located with an exposure area (EA 11). This identifies a possible concern that remedial action traffic may erode the soils causing PCB exposure and movement through dust.
Figure 5-6d		
General		This figure would benefit from an additional layer depicting the Core area habitats.
Staging Areas	Staging Area 5	This area would be a good area for mitigation of Core area 3 type habitats.
	Staging Area 8	Is it possible to decrease the footprint of disturbance (which is adjacent to a main road and residential settings) by increasing area in Staging Area 7?
Access roads		The access road located south and east of Staging Area 4 is adjacent to a residential area. Is it possible to move the road alignment to the north (coming off the east border of the staging area)?
		There are no connective access roads to 5A-VP-50 and 5A-VP-49A (and a non-residential floodplain soil removal area in between these two VPs).
		There are no connective access roads shown to 5A-VP-72, 5A-VP-73 and 5A-VP-73A, which may be due to their location within Core 1 and 3 habitats. It may be appropriate to place access roads to these features from the primary access road to the west that extends to Staging Area 7.
		There are no connective access roads shown to 5A-VP-64 and 5A-VP-65, and a non-residential floodplain soil remedy area to the north. Perhaps access to these features was assumed to come from the river channel?
		Vernal pool 5A-VP-60 occurs within core habitat. It is recommended that access occur from the main river channel.
Figure 5-6e		
General		GE may want to consider the benefits of working cooperatively with the city of Pittsfield Wastewater Treatment Plant (WWTP) to manage traffic. Perhaps GE could route traffic using WWTP point discharge access road and facility perimeter roads and provide enhanced road features in return.
Staging Areas	Staging Area 10	This area is the last support area prior to Segment 5B. Is it possible to size this feature accordingly in order to be used for the next segment of work?
Access Roads		The 5A-VP-77 feature is large with only one access road to East New Lenox Road. Is this enough access for this feature or should this feature be connected via an access road to the main river channel and to Staging Area 9?

The Preliminary Staging Area and Temporary Access Road Locations for Reach 5A shown on Figures 5-6a through 5-6e show conservative estimates of construction footprints. The document assumes a conservative road width of 20 feet (Footnote #57 pdf page 107). Heavy equipment and haulage traffic tend to exceed conservative estimates. It seems appropriate to include equipment and vehicle turn out areas to allow for traffic. In addition, there may be a need to expand the staging areas to accommodate topsoil and materials staging areas. Special consideration of staging areas should also accommodate equipment parking and storage, which can often lead to fuel and oil spill releases.

The community may want to ask EPA if the forthcoming Final RD/RA could include conservative support area estimates to address equipment and vehicle traffic, storage and potential measures to reduce fuel and oil releases.

12. Many of the features shown within Figures 5-6a through 5-6e of the Conceptual RD/RA WP occur within the 1 mg/kg isopleth and within non-residential exposure areas (EAs). The Conceptual RD/RA WP does not state whether these support areas will be prepared with placement of road-base/overburden materials to prevent surface soil PCBs from being released through dust created by equipment traffic (which is an Applicable or Relevant and Appropriate Requirement [ARAR] acknowledged within the document). It seems appropriate to describe the design of the working surfaces for the staging areas and roads to understand how underlying soils will be minimally disturbed and ultimately reclaimed to existing topographic contours. GE may also want to coordinate the construction of these areas with surrounding municipalities (or others) to determine if there are any future reuse or continued use considerations to be accomplished by these features.

The community may want to ask EPA if the Final RD/RA should include a description of the constructed support area surfaces to understand how these areas will minimize dust from underlying soils potentially burdened with PCBs.

<u>Additional Data Collection Recommendations and Comments</u>

13. The Conceptual RD/RA WP includes a Supplemental Data Collection Work Plan for the collection of additional data necessary for the final design. This additional sampling includes non-residential floodplain exposure area sampling in areas with high PCB concentrations adjacent to the 1 mg/kg isopleth. GE determined that additional soil sampling for PCBs is warranted at two EAs given that concentrations at several locations in those EAs near the 1 mg/kg isopleth exceed 10 mg/kg. TASC reviewed the Pre-Design Investigation Summary Report for Reach 5A Non-Residential Floodplain Exposure Areas (Section 3.4 pdf page 25) and identified additional EAs that may need further sampling. A summary of possible EAs is included in the below table with reference to figures provided in the Reach 5A Non-Residential Floodplain Exposure Areas document (Anchor QEA and Arcadis, 2023).

EA	**Figure/pdf page** (Anchor QEA and Arcadis, 2023)	**Description**
1	Figure 3-2, pdf page 43	Areas > 50 mg/kg or 25 mg/kg adjacent to the 1 mg/kg isopleth in southeast corner of map
6	Figure 3-6, pdf page 47	Areas > 25 mg/kg adjacent to the 1 mg/kg isopleth within the eastern sliver of the EA (just south of the river)
18	Figure 3-18, pdf page 59	Area > 25 mg/kg adjacent to the 1 mg/kg isopleth in the northern center of the map (adjacent to EA 12)
26	Figure 3-19, pdf page 60	Area > 50 mg/kg on both depth-specific maps on the south side of the river (in the southwestern portion of the maps, adjacent to the Housatonic River label) that is not shown in the interpolated map
31	Figure 3-22, pdf page 63	Area > 25 mg/kg adjacent to the 1 mg/kg isopleth in the northeastern corner of the map
32	Figure 3-23, pdf page 64	Areas > 50 mg/kg and 25 mg/kg adjacent to the 1 mg/kg isopleth in the southern strip adjacent to the river
34	Figure 3-25, pdf page 66	Areas > 50 mg/kg and 25 mg/kg adjacent to the 1 mg/kg isopleth along the river

Review of the preliminary remediation areas for Reach 5A Figures 4-10a through 4-10d (pdf pages 222-225) reveal certain riverbank areas with elevated PCBs adjacent to the 1 mg/kg isopleth as summarized in the below table.

Figure	**River Station Location**	**Side of River**
Figure 4-10b	24+00 – 26+00	West
Figure 4-10c	39+00 – 40+00	West
	49+00 – 50+00	West
Figure 4-10d	109+00 – 110+00	East
Figure 4-10e	187+00 – 188+00	West
	194+00	West
	196+00	West
	218+00 – 219+00	West
	224+00	West
	205+00 – 208+00	East
	228+00 – 229+00	East
	238+00 – 240+00	East

The community may want to ask EPA if the Supplemental Data Collection Work Plan provided within the Conceptual RD/RA WP should include the above identified areas within the EAs and along the riverbanks for additional sampling since elevated total PCBs have been identified immediately adjacent to the 1 mg/kg isopleth.

14. Review of the amended Appendix B figures (provided via email from EPA on 12/4/2023) identified sediment areas at depth of potential concern; these are summarized in the following table.

Figures	**River Stations**	**Concern**
B-5d	73+00 – 82+00	PCB concentrations are > 50 mg/kg at a depth of 2-2.5 ft bgs.

B-6d	85+50 – 93+50	PCB concentrations are > 100 mg/kg at a depth of 2.5-3 ft bgs.
B-5f and B-6f	149+00 – 150+00	These two figures show an increasing concentration of PCBs at depth with concentrations > 25 mg/kg at 2-2.5 ft bgs, and > 50 at 2.5-3 ft bgs.

The occurrence of these significant PCB-contaminated areas raises several questions. It is acknowledged that all sediments are to be removed within Reach 5A; however, "sediment" is not clearly defined in the Permit or SOW. Sediments are typically identified as being underwater, saturated, loose, unconsolidated materials that are easily removed by disturbance created by pumps or equipment. If these PCB results are associated with subsurface materials that are associated with dense bedrock type materials that elicit a "refusal" to pumps or equipment then these residual PCBs may be left at depth. As such, these temporarily exposed (during sediment removal efforts) subsurface sediments present a potential concern if the construction best management practices do not contain these materials. The Conceptual RD/RA WP does not describe any specific best management practices (BMPs) to be employed to control releases of significantly contaminated materials.

The community may want to ask EPA if there is any need to further evaluate these significant PCB-contaminated areas that occur at depth, and if there are any special construction BMPs to be considered when working within these contaminated areas.

15. The Reach 5A BRA Report presents an abundance of baseline data that captures a spectrum of seasonal conditions that can serve as the foundation for future restoration goals; however, it is unclear in the Conceptual RD/RA WP if monitoring will continue up until the point when construction begins. Climate changes and significant seasonal variations affecting stream flow are ongoing and need to be monitored.

The community may want to ask EPA if continued monitoring throughout the ROR area can occur in order to capture ongoing climate and seasonal conditions to river flows, and observe achievement of Performance Standards over time.

16. The Conceptual RD/RA WP provides a summary of proposed support areas including temporary access roads and staging areas. Concurrent with this document, the On-Site and Off-Site Transportation and Disposal Plan (Arcadis Inc., 2023) has been provided for review. There are community concerns associated with traffic patterns and possible impacts to the environment. It may be prudent for GE to collect surface soil samples for PCB analysis from proposed staging areas and access roads to achieve two goals:

1. To determine if dust generated during support area construction and use would yield PCB exposure issues to surrounding communities, and
2. to characterize baseline conditions prior to Reach 5A remedial action activities.

It is recommended that composite surface soil samples from proposed staging areas and access roads be gathered at the time of the supplemental data collection activities (described in Section 10 and Appendix I) to achieve these goals. Appendix I provides a description of supplemental data collection efforts to achieve geotechnical data needs. These approaches (such as the proposed boring locations) could be amended to gather

surface soil samples. The results of these samples may help address public concerns surrounding traffic issues to the community and could be incorporated as part of the forthcoming Quality of Life plan. The data could also establish baseline soil PCB concentrations in areas that may become contaminated over time during the Reach 5A remedial action activities. These baseline concentrations will help determine if any significant contamination occurred as a result of RA efforts and could be used for reclamation goals upon project completion.

The community may want to ask EPA if forthcoming supplemental data collection activities could include the surface soil samples for PCB analysis to help address concerns surrounding traffic issues to the public and to help define baseline PCB conditions in support areas that may become contaminated during remedial action activities.

Coordination with the Community and Quality of Life considerations

17. During previous GE document reviews (for instance, review of the Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas, June 2021), the city of Pittsfield identified a potential Frequently Used Subarea associated with Exposure Area 27 (EA 27). As determined by the city of Pittsfield, EA 27 may encompass an area associated with recreational water access. EA 27 correlates to river stations 160+00 through 170+00. EA 27 was never addressed as a Frequently Used Subarea; therefore, the proposed RD/RA represents a less-conservative remedy approach. Exposure point concentrations for Frequently Used Subareas are to be calculated using 0-3-foot soil results as a conservative method. The forthcoming Final RD/RA should treat EA 27 as a Frequently Used Subarea in order to ultimately develop an appropriate remedy protective of intensive human exposure and use.

The community may want to ask EPA if EA 27 is to be evaluated as a Frequently Used Subarea in the Final RD/RA.

18. The community may want to closely review the PCB results provided within Figure F-2s within Appendix F (pdf page 51) since it provides an indication of areas containing elevated PCBs. EA 27 has not been evaluated as a Frequently Used Subarea; therefore, conservative assumptions regarding possible PCB exposure have yet to be applied. There may be a need to conduct a remedy within this EA to address intense recreator activity. Any necessary remedy action (such as riverbank removal) may present a possible coordination between GE and the community to achieve a land reuse goal (excavation of the riverbank for possible placement of footers or piers for a boat launch facility). The community may want to proactively work with GE to achieve a mutually beneficial goal for land reuse to be accomplished, in part, by the remedy.

The community may want to continue coordination with EPA and GE in regard to next steps to be taken for EA 27 since the city has an interest in eventual land reuse opportunities for the area.

19. Figures 5-6a through 5-6e (pdf pages 232-236) of the Conceptual RD/RA WP depicts the proposed comprehensive remedial action (inclusive of support areas and all types of RA activities). Review of these maps identified areas where additional consideration of impacts to residential areas would be of benefit given the close proximity of Reach 5A remedial action efforts. For instance, the installation of conservative erosion control features, placement of quality of life monitoring features and control of certain issues such as noise, may be appropriate within the following areas due to proximity to adjacent residential (areas identified by river station):

- 50+00 – 55+00 (East side)
- 105+00 – 110+00 (East side)
- 125+00 – 130+00 (West side)
- 155+00 – 160+00 (East side)
- 170+00 – 175+00 (East side)

The community may want to ask EPA if GE will consider the above river segment areas for possible control or mitigation of construction impacts to communities since these segments are located near residential areas.

20. The Conceptual RD/RA WP states that "GE is developing a separate Quality of Life (QOL) Compliance Plan to be released for review December 2023" (pdf page 16). This QOL Compliance Plan is not included in this Conceptual RD/RA WP. The SOW (pdf pages 48-49) states that the "specific measures for complying with the noise, air, odor, and light standards at the individual Remediation Areas will be developed during remedial design and provided in the Conceptual RD/RA Work Plans and/or Final RD/RA Work Plans…", and "more specifics regarding the impacts of remediation on recreational activities and methods to minimize or mitigate such impacts will be provided on a Remediation Area-specific basis in the Conceptual and/or Final RD/RA Work Plans." The Conceptual RD/RA WP represents an important point in the Reach 5A RD/RA process where the community can communicate with EPA and GE about the QOL locations and measurements of standards, and possible mitigation of recreational activity impacts. The community may be the best resource to identify suitable sampling/monitoring locations for QOL standard measures (noise, air, odor and light) and this coordination would be appropriate to continue through the development of the ROR transportation plan as well. In addition, the communities would be able to describe the possible impacts to recreational uses along Reach 5A in order to coordinate possible mitigation opportunities (posting signage to recreational uses regarding alternative areas available for use etc.).

The community may want to ask EPA if there is an opportunity for the community to assist with the development of the QOL Compliance Plan.

21. As a general reviewer observation, there are numerous documents linked to this Conceptual RD/RA WP. The comments provided by the community to EPA for this document are of particular importance. It would be of benefit to the community if GE could provide a "response to comment" component in the Final RD/RA in order for the community to track the progress of comments.

The community may want to ask EPA if the forthcoming Final RD/RA could include a response to comments component to enable community reviewers to track the progress that GE is making toward addressing community concerns.

22. Monitoring of restoration success may provide unique opportunities for GE to partner with stakeholders and interested community groups to gather and interpret the monitoring data. For instance, the Massachusetts Division of Fish and Wildlife (MassDFW) may conduct creek surveys that could assist GE in understanding fisheries restoration. MassDFW has a vernal pool certification process and vernal pool tracking (geospatial) program that may be of interest to community members. These community members may be willing to conduct vernal pool monitoring on their own behalf. Audubon has areas within the Rest of River footprint of particular interest to their ongoing bird inventories (Canoe Meadows and other eBird identified hotspots). In addition, consideration could be given to area schools enabling students to partake in biological measurement collection to understand restoration impacts.

The community may want to ask EPA if GE plans to reach out to stakeholders and interested community groups to solicit assistance or coordination of restoration data collection in order to make the restoration process more visible and accessible to the public.

23. Community notification and communication is an important aspect described throughout the Revised Final Permit and Statement of Work. The Water Withdrawal and Uses Plan (AECOM, 2023) explains the methods that will be used to develop a database of water users (refer to Section 2.2 of the Water Withdrawal and Uses Plan) that will help track and identify users that need to be forewarned of pending ROR remedy action. TASC recommends that GE expand this list to include adjacent landowners and other closely located residents that are concerned with Reach 5A activities. These residents could be included in an "email or phone call alert" notification system that actively alerts these residents about Reach 5A activities they need to be aware of. These active communication alerts will likely be a valuable outreach to the community.

The community may want to ask EPA if GE can create an electronic alert notification system in order to proactively notify area residents about Reach 5A activities of possible concern to them.

24. The proposed RA efforts on the residential properties represent a unique opportunity for GE to coordinate their construction work to benefit each property owner. It would be beneficial if GE were to discuss their remedy action with each owner to see how best to accommodate any specific homeowner's needs (such as returning removal area to grade, or armoring the adjacent channel, or address any disturbance to fencing etc.).

The community may want to ask EPA if GE will coordinate their remedy actions on each private parcel to provide an overall benefit to each owner as an acknowledgement of the disturbance to their property.

25. Figure 5-6c depicts the Canoe meadows trails which are relied upon for a portion of the proposed primary upland access roads. This coordination of the roads with the trails seems like a positive and possible beneficial arrangement for both GE and the meadows trustees. GE and the trustees may want to coordinate further mutually beneficial opportunities to achieve Reach 5A remedial action goals and enhancement of meadows recreational opportunities.

The community may want to ask EPA if GE will coordinate with Canoe meadows trustees to develop a mutually beneficial relationship to address both Reach 5A remedial action goals and meadows recreational opportunities.

26. The City of Pittsfield owns many stormwater pipes with outfalls to Reach 5A of the River. It is not clear within this Conceptual RD/RA Work Plan if GE is going to address these outfalls, or how these flows will be managed. There are two outfalls in particular near Joseph Drive, where the community has observed issues. They deliver large amounts of trash and sediment to the river. It is recommended that GE assist with these concerns proactively by routing stormwater flows for possible infiltration and beneficial use.

The community may want to ask the EPA if GE can coordinate with the City of Pittsfield to address the stormwater conveyance concerns associated with city-owned stormwater outfalls for possible water infiltration and beneficial use.

27. The forthcoming Final RD/RA will present a voluminous amount of geospatial information describing the Reach 5A remedial action. The community would appreciate it if GE could make the geospatial information available to the public in a format enabling people to view the layers of remedy action throughout the Reach. Additionally, the preparation of something like a Story Map could be beneficial to assist in community members understanding of the upcoming remediation.

The community may want to ask the EPA if GE could provide the Final RD/RA geospatial information to the public in a format allowing the public to view the various remedial actions to be accomplished within Reach 5A, as well as something like a Story Map to assist community members understanding of the upcoming remediation.

<u>Comments Related to Construction</u>

28. Viewing the different lines of evidence that have led to RD/RA decisions is extremely important yet tedious given the data formats provided within the Conceptual RD/RA WP. It is recommended that smaller portions of Reach 5A be depicted in construction sheet formats (using the scale relied on for Residential PCB evaluations such as the scale shown in Figure 1-1). This will enable planners and reviewers to see the connection between each type of remedy action.

The community may want to ask EPA if the Final RD/RA document could provide remedy design figures that combine all remedy actions within a single, focused view (numerous sheets will be needed to capture all of Reach 5A) at a scale where the reviewer can envision the connectivity of the remedy actions, access roads, supporting areas, etc.

29. The preliminary remedial design information provided within the Conceptual RD/RA WP does at times show that GE is planning a combined media approach and a conservative construction strategy, as shown for example in their selection of additional riverbank segments for supplemental remediation (Section 4.3.2 pdf page 61) which states "GE has… selected additional bank segments for supplemental remediation based on constructability considerations (e.g., small sections of bank that do not require remediation but are situated between banks where remediation is required) and banks where erosion potential is relatively high… and the adjacent floodplain PCB concentrations are elevated." This statement addresses one of TASC's predominant concerns regarding the need to connect and coordinate remedial action efforts. The difficulty in understanding if GE completed this coordination lies in the lack of information in the document describing these coordinated approaches. It is suggested that forthcoming Final RD/RA efforts include the above-mentioned construction sheets (see Comment #26) combined with a tracking database that depicts type of media remediated (using river stationing as a basis), volumes of material removed (and associated PCB concentrations), coordination and rationale for blending certain remedial actions (such as extending a riverbank soils removal to capture adjacent contaminated residential soils).

The community may want to ask EPA if the Final RD/RA can include a proposed method to track coordinated remedial actions between media by a standard basis unit (such as river stations).

30. Section 5.4.1 of the Conceptual RD/RA WP (beginning on pdf page 89) describes the conceptual sediment remediation approach. Footnote #49 on pdf page 91 states "Ultimately, the remediation contractor(s) will be responsible for selection of equipment, means, and methods for sediment removal and capping to be performed in the river channel. The equipment or methods used by the contractor(s) could vary from those described herein." Given that this document represents a 30% conceptual design, it may be prudent to begin soliciting contractors for this work. It would be useful to understand if potential contractors will alter the assumed methods for remediation activities and if these methods will affect estimates of materials to be removed.

The community may want to ask EPA if it would be appropriate for GE to begin coordinating with potential contractors in order to be able to definitively identify materials removal methods to be designed in the Final RD/RA.

31. Section 2.5 of the Conceptual RD/RA WP (pdf page 27) provides a brief summary of the inspection monitoring and maintenance to be completed before and during construction. Details describing inspection monitoring and maintenance are deferred to separate documentation provided within a series of Baseline Monitoring Plans (refer to footnote 15 on pdf page 27 referencing the Second Revised Baseline Monitoring Plan provided on January 30, 2023). It would be useful if the community were able to review the baseline monitoring plans in order to determine if their concerns are being addressed. TASC has previously commented on inspection monitoring recommendations including:

- Defining oversight waste material sampling for PCBs (frequency and methods for sample collection and analysis coordination) with EPA,

- Conducting water quality monitoring during construction for total dissolved solids (TDS), dissolved oxygen and other parameters such as alkalinity to help address downstream impaired water quality conditions, and
- Potential collection of fish for fish tissue samples that may be useful for measurement of the general biological Performance Standards (since construction activities will likely impact resident fish populations).

The community may want to ask EPA if it would be appropriate to review the baseline monitoring plans, which define construction inspection monitoring and maintenance plans.

32. Review of the Housatonic River water quality management plans (MassDEP-DWM, 2007) indicates that segments of the river are impaired with low dissolved oxygen concentrations, elevated nutrient concentrations and the presence of invasive macrophytes. The proposed water diversion activities may adversely affect or compound these existing impairment conditions. The Conceptual RD/RA WP indicates that monitoring of construction activities will be accomplished; however, it does not indicate how the proposed remedial action activities will be controlled to minimize contribution to existing impairment issues.

The community may want to ask if the proposed water management activities will be designed to minimize any contribution to downstream water quality impairment conditions.

33. As per the results of the Toxicity Characteristic Leaching Procedure (TCLP) analysis provided in the PDI Summary Report for Sediment and Riverbanks (AECOM, 2023; pdf pages 1624-1626); the sediment and riverbank materials do not show characteristics of hazardous waste. However, these initial samples capture a snapshot in time prior to construction activities. Disturbance from construction may affect sediment chemical concentrations; therefore, it is recommended that additional samples be collected as materials (sediment, riverbank soil and floodplain soils) are collected for disposal on a routine frequency.

The community may want to ask EPA if collected waste materials (including riverbed sediment, riverbank soil and floodplain soils) could be collected on occasion for additional TCLP analysis to ensure proper disposal of materials.

34. As stated within the Revised Final Permit, GE is obligated to comply with Applicable or Relevant and Appropriate Requirements (ARARs) including, but not limited to, any activities to satisfy the separate net benefit mitigation standard in the Massachusetts Endangered Species Act (MESA) described in Section II.E of the permit (pdf page 104 of the Permit), which states that the Commonwealth will work with GE and 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) of the MESA. Now that an understanding of the baseline conditions describing both the ecological setting and the proposed RD/RA strategy is known, it

seems prudent for GE and the Massachusetts Division of Fisheries and Wildlife (MassDFW) to proactively coordinate to identify suitable mitigation strategies for habitats of concern since substantial portions of Reach 5A encompass NHESP (Natural Heritage and Endangered Species Program) Priority Habitats including important Core areas (shown in Figure 4-9 pdf page 221 of the Conceptual RD/RA WP) and vernal pools. In addition, the proposed access roads and support areas are now known and can be layered onto the habitat maps to determine mitigation needs. Furthermore, an inventory of disturbed areas has been accomplished which may serve as suitable mitigation settings that will compensate for habitat loss, or it may be possible to reclaim support areas (staging areas and access roads) to achieve mitigation goals. Given that the next step in the Reach 5A process is to document the final remedial design, it may be prudent to identify possible hydrologic linkages to be created or enhanced to create a suitable mitigation area during Reach 5A remedy installation.

The community may want to ask EPA if coordination with MassDFW could occur proactively to determine if any delineated disturbed areas may be useful for mitigation of impacts to important habitats. This coordination may be timely and important to the next Reach 5A step to document remedial design components that may need to incorporate any hydrologic linkage needed to create the mitigation area.

35. Although Reach 5B RD/RA efforts are years away, it may be appropriate to design certain features such as connective access roads and support areas to benefit the next segment of ROR work.

The community may want to ask EPA if any consideration of using Reach 5A features (such as roads and supporting areas) was considered to overlap and address Reach 5B RD/RA efforts.

Comments Related to Previous/Linked Document Reviews

36. The Reach 5A Baseline Restoration Assessment (BRA, AECOM, 2022) report provides a detailed baseline ecological inventory and assessment of pre-remediation conditions and functions of the affected habitats within Reach 5A. This information will serve as the foundation for meeting the restoration Performance Standards and captures conditions of a watershed contaminated by PCBs. If restoration is based on baseline conditions measured at PCB areas that are significantly contaminated, restored conditions will ultimately reflect an impacted natural setting unless available PCB data could help identify portions of habitat areas that have low contamination. Now that this Conceptual RD/RA WP has compiled the PCB data, it would be appropriate to also compile baseline ecological information from unimpacted (or low impact) areas to serve as baseline. This information could then be used to identify appropriate biological measures to serve as restoration goals.

The community may want to ask EPA if the Reach 5A BRA information can be re-evaluated to summarize ecological conditions in areas unimpacted by (or with low

impact from) PCB occurrence, and if this information can serve as the basis for restoration goals.

37. The Restoration Performance Objectives and Evaluation Criteria Report (RPOEC Report, AECOM, 2023) is linked to the Reach 5A BRA by identifying potential coordination of measurable criteria (referred to as "measures") to determine the effectiveness of a ROR Remediation Unit (RU) restoration effort. However, the RPOEC document only briefly acknowledges quantifiable biological measures (such as plant community species richness and diversity, or benthic macroinvertebrate community measures as summarized in the Reach 5A BRA) to be used as tools to determine effectiveness of achieving performance standard restoration goals. If the Baseline Restoration Assessment information is revisited to isolate data representative of areas with low PCBs, then appropriate quantifiable measures to be used to determine restoration success can be identified.

The community may want to ask EPA if the RPOEC can be revised to include quantifiable biological measures to define restoration success since baseline ecological information gathered from low PCB contaminated areas is now understood as shown in the Conceptual RD/RA document.

38. The Restoration Performance Objectives and Evaluation Criteria Report (AECOM, 2023) describes the proposed restoration monitoring frequency and duration upon completion of the Reach 5A RA efforts. The document describes:

- Post-installation monitoring and site visits over a seven-year period to include two monitoring visits per year for the first three years after completion of restoration actions, and one monitoring visit per year in the fourth, fifth and seventh year after completion of restoration, and
- Monitoring to assess ecological function to occur on one occasion during the seventh year (the final year) to assess ecological function.

This proposed approach seems minimal and may miss the opportunity to observe seasonal real-time issues that may require action. It seems important to capture all four seasons during the first few years after completion of construction in order to capture seasonal biological measures of importance (presence or absence of key species such as vernal pool species). A more aggressive monitoring schedule will allow for the timely detection and response to observed issues. In addition, since the proposed remedial action schedule for Reach 5A will begin at the furthermost upgradient point and progress downstream, it may be prudent to begin monitoring as soon as a given portion of the Reach is completed (for instance, once the entire area surrounding and including the river channel beginning from river station 0+00 to 10+00 as an example).

The community may want to ask EPA if the proposed monitoring defined within the Restoration Performance Objectives and Evaluation Criteria Report should be amended to capture seasonal observations and should begin in a more timely manner as soon as defined portions of Reach 5A have their cleanup completed.

39. The Phase IB Cultural Resources Survey Work Plan (and previous documents such as the Supplemental Phase IA Cultural Resources Assessment Report) state that "the area around the Confluence of the West and East Branches and the confluence of the Housatonic with Sackett Brook has one of the highest densities of previously recorded prehistoric sites in the region… For example, within a mile upstream of the Confluence on the West Branch (but outside the ROR), there are six recorded prehistoric sites, and two sites are located near Morewood Lake just south of the Archaeological Area of Potential Effects (APE)" (AECOM, 2022, pdf page 69). The proposed footprint of the "area subject to archaeological survey" at the confluence of the West and East Branches (shown on Figure 6, Map 1 of 4 pdf page 22 of the Phase IB CRS WP; AECOM, 2022) shows a focused APE along access roads and around the perimeter of non-residential floodplain remediation. Now that this Conceptual RD/RA WP has identified the potential footprint of remedial action activity (using Figure 5-6a, pdf page 232) it seems appropriate to revisit this area with an expanded APE since access roads traverse this area. If this area is truly inhabited by a substantial number of cultural resources, it seems prudent for the APE to encompass the confluence area more thoroughly as compared to the narrow focus shown in this map. Given that the purpose of the Cultural Resources Survey Work Plan is to further investigate areas that have high potential for cultural resources and given the density of resources within this area, it seems appropriate to expand the APE in this area.

The community may want to ask EPA if the area around the confluence of the West and East branches of the Housatonic River should be thoroughly reviewed during the forthcoming Phase IB cultural resource assessment activities in order to completely evaluate all possible Reach 5A remedial action impacts (such as the proposed access roads) to cultural resources.

40. Section 2.2 of the Phase IB Cultural Resources Survey Work Plan (AECOM, 2023) describes the proposed delineation of APE areas. The APE appears to appropriately encompass all areas proposed for remedial activity as defined in the Conceptual RD/RA WP; however, the proposed areas subject to archaeological survey (Figure 6, Maps 1 through 4 in the Phase IB CRS WP, beginning on pdf page 22) are very tightly focused around remedial action areas (support areas and access roads). It seems prudent to allow for a larger buffer zone around the perimeter of remedy features to allow for construction activities.

The community may want to ask EPA if the outlined areas subject to Phase IB CRA archaeological survey (shown in Figure 6, Maps 1 through 4 of the Phase IB CRS WP; AECOM, 2023) should include a buffer area around the remedy features to provide a larger area for construction activities, and if the survey of these areas could be included as part of the planned Phase IB survey efforts.

41. Section 4.1.1 of the Phase IB Cultural Resources Survey Work Plan describes the aquatic field investigations to be conducted during the forthcoming Phase IB surveys. This section introduces the assumption that "backwaters and vernal pools in Reach 5A are not included in the Phase IB survey program" because "inundated and seasonally wet areas

are not themselves considered to have high archaeological sensitivity" (pdf page 21 of the Phase IB Cultural Resources Survey Work Plan, AECOM, 2023). The ROR area has been shown to demonstrate a dynamic hydrology. The river channel can meander and "jump" away from old channels, creating abandoned meanders and isolated pools. As a result of this continuous change, certain vernal pools and backwater areas may be young and may have been created on top of archaeological resources. Therefore, the introduction of this assumption may potentially put resources at risk to the remedial action activities. At this stage it is prudent to ensure that the construction activities encompass conservative treatment of any encountered resource especially during remedial activities in vernal pools, backwaters and any other inundated features.

The community may want to ask EPA if the forthcoming construction specifications can encompass conservative treatment of encountered archaeological resources, including backwaters and vernal pools, in order to address the appropriate treatment of important resources encountered during remedial actions.

42. The Sustainability and Climate Adaptation Plan acknowledges that drought may be an impact related to climate change. Local habitats such as the vernal pools may be affected. The Reach 5A RD/RA is at a unique stage to be able to foresee and potentially design remedial action efforts to circumvent concerns such as climate change impacts on vernal pools. It may be useful to review the proposed remedial action footprints shown within Figures 5-6a through 5-6e on pdf pages 232-236 of the Conceptual RD/RA WP (which includes the preliminary staging area and temporary access road locations) to consider stormwater controls that could route surface water to vernal pools potentially impacted by drought. Similar habitats such as Core area habitats and wetlands may also benefit from these future stormwater management strategies.

The community may want to ask EPA if the forthcoming Final RD/RA document could consider evaluating the management of stormwater as a resource to safeguard sensitive habitats such as vernal pools and wetlands.

43. Section 8 of the Conceptual RD/RA WP addresses sustainability considerations (pdf page 115). As part of this evaluation, the possible sources of greenhouse gases are to be described. TASC previously commented on the potential greenhouse gas emissions produced from the Upland Disposal Facility (UDF), which will contain disposed sediments and soils. Literature sources indicate that the anaerobic degradation of sediment organic matter leads to considerable gas production in landfills where contaminated sediments are disposed of; however, little is known about the magnitude of gas generation from dredged sediment (refer to Gebert et al., 2019; and Gebert and Knoblauch, 2017).

The community may want to ask EPA if the possible gas production from the UDF landfilled sediments and soils should be included as part of the sustainability evaluation presented within the Conceptual RD/RA WP.

44. The Upland Disposal Facility is appropriately addressed under separate documents. The Conceptual RD/RA WP provides estimates of sediment/soil removal volumes; however, it is difficult to determine if conservative estimation factors (such as a soil fluff factor resulting from excavation of dirt) were applied. In addition, it would be useful for the Conceptual RD/RA WP to mention whether the total (conservative) estimates of sediment/soil removal volumes can be addressed by the UDF capacity.

The community may want to ask EPA if the estimates for managed sediment/soil waste have been conservatively estimated and can be accommodated by the UDF capacity.

45. The vernal pool pilot test relies on testing and monitoring amendments (and controls) in 10 vernal pools over the course of several years, described in the Vernal Pool Pilot Study Work Plan. The Conceptual RD/RA WP summarizes this schedule by stating "GE will conduct post-remediation monitoring of the pilot study vernal pools for a period of three years, which is anticipated to be ongoing while remediation is occurring in other areas of Reach 5A" (pdf pages 96-97). It is imperative that additional stressors to the vernal pool pilot study environments be held to a minimum in order to accurately review amendment effects to vernal pool water quality chemistry and ecology. GE should acknowledge this issue in the Final RD/RA by minimizing Reach 5A remedial actions in the immediate area until pilot studies are completed.

The community may want to ask EPA if the vernal pool pilot study schedule is being accommodated as part of the Final RD/RA and Reach 5A RA activities.

46. Section 10.3 of the Conceptual RD/RA WP describes the proposed treatability studies. Footnote 68 on pdf page 132 states "The treatability testing to evaluate amendment placement for backwater BW5A-1 is proposed to be conducted at the same time as the similar bench-scale treatability testing to be conducted as part of the vernal pool pilot study described in GE's June 2023 Vernal Pool Pilot Study Work Plan, as conditionally approved by EPA on September 12, 2023." TASC previously provided comments on the Vernal Pool Pilot Study Work Plan that would apply to the BW5A-1 treatability study. A summary of those comments are as follows:

- Section 3.1.1.2 of the Vernal Pool Pilot Study Work Plan plans to evaluate the use of biochar as a possible amendment. Several recent studies illustrated that biochar addition can decrease dissolved oxygen (DO) (Kong et al., 2021, and Berger et al., 2019). This is an important consideration for vernal pools and backwaters since these features may not be able to recycle water and may become anoxic with the addition of biochar. The measurement of dissolved oxygen is an important parameter that should be integrated into the study design.
- Section 4.3 of the Vernal Pool Pilot Study Work Plan describes the proposed pilot study monitoring and evaluation methods. This section states that the treatment pools will "be monitored one to two months following amendment application, and then annually for three years following amendment application." Since the activated carbon and biochar amendments may have considerable impact to the pool water quality and pool hydrology periods are brief in duration, it may be prudent to monitor conditions more frequently at the start of the activated carbon application (for

instance weekly). In addition, if the pools are deep, it may be important to test for thermal stratification to identify any depth-specific water quality conditions.

The community may want to ask EPA if the effects of biochar on dissolved oxygen should be considered in the pilot study design (that now includes an assessment of BWA5-1) and whether the proposed pilot study monitoring could be amended to increase the frequency of monitoring at the beginning of the test, and to also test if the pools and backwaters are stratified by depth.

47. Within the SOW, Section 4.2.4, which describes the vernal pool pilot study deliverables, states that the selected pools for the pilot study will "be submitted to EPA within 30 days following EPA approval of the PDI summary report on floodplain non-residential EAs, which will include the Reach 5A vernal pool soil PCB data" (pdf page 44 of the SOW). However, the Vernal Pool Pilot Study Work Plan (Anchor QEA and AECOM, 2023) was released prior to the release of this document (in order to likely achieve the ROR schedule), and the Conceptual RD/RA WP now identifies areas surrounding various vernal pools that may require remedial action. Based on the conclusions drawn from these two documents, the selection of the vernal pools for pilot study may need to be revisited.

The community may want to ask EPA if the proposed vernal pools to be used for the vernal pool pilot study need to be revisited based on the information provided within the Conceptual RD/RA WP.

48. TASC review of the Water Withdrawal and Uses Plan and the Conceptual RD/RA WP indicates that GE recognizes the need to determine important groundwater use (nonpoint or indirect intake sources) that may be affected by Reach 5A remedial action activities. The interruption of a surface water supply that may feed a groundwater resource relied upon for domestic or agricultural use is an important consideration for the water withdrawal planning portion of the RA activities. As part of the Conceptual RD/RA WP outreach process, GE contacted the City of Pittsfield and the Berkshire Regional Planning Commission to request any available information on known groundwater extractions and uses within 500 feet of the river (Section 9.2 Summary of Outreach Activities and Information Obtained, pdf page 126). Results of GE's analysis indicates that "no river water or groundwater withdrawals within 500 feet of the river were identified in Reach 5A" (pdf page 129). It is not clear as to why the 500-foot spatial separation was considered adequate when groundwater movement and depletion may be more far-reaching depending on groundwater movement rates. There are proposed seepage rate studies to be performed as part of forthcoming data collection efforts, however it is difficult to determine if this information will be used to determine impacts to any surrounding aquifers used for potable supplies.

The community may want to ask EPA if evaluation of groundwater movement to possible potable supply well fields for domestic or agricultural use is a concern and should be evaluated further as part of the forthcoming Final RD/RA.

49. The results of the water withdrawal evaluation indicates that the RD/RA activities will have minimal impact to Reach 5A surface water users, with the exception of the Pittsfield Wastewater Treatment Plant (WWTP). However, there are several stormwater drains identified along the length of Reach 5A. It is not clear if these possible utilities are comprehensively understood and evaluated. Furthermore, there is no mention in this document as to how the RD/RA design will "minimize and mitigate impacts" as required by the SOW (SOW page 45).

The community may want to ask EPA how GE intends to maintain the WWTP point of discharge during the Reach 5A RA efforts, and whether the other outfalls have been addressed in order for GE to mitigate possible impacts.

50. The water withdrawal impacts of Reach 5A remedial action activities to entities reliant on drawing water from, or releasing water to, the river channel have been described. Review of the aerial information provided in Figure 5-6e raises a question regarding remedial action water management activity effects to natural features such as the other water body/abandoned meander shown at river station 245+00 that occurs at the beginning of Reach 5B. It is assumed that GE will take measures to recover from impacts and return natural hydrologic connections to features such as the one shown at this location.

The community may want to ask EPA if GE will maintain hydrologic connections to natural water features that may be affected by adjacent remedial action activities.

51. Previously reviewed Preliminary Design Investigation summary reports provided a summary of validated data, including a discussion of any quality assurance/quality control (QA/QC) issues with the data, associated data validation and laboratory data reports. These reports provided a summary of data validation results, which mention split samples collected by EPA taken as part of regulatory oversight in order to test the precision and accuracy of both field and analytical procedures. TASC raised data quality concerns from the review of these data sets that did not necessarily signify overarching concerns with the quality of the current data set; however, these observations indicate the possible need to focus QA/QC procedures for the forthcoming sampling to be completed during and after remedial action to verify construction completion. There is no mention of EPA oversight or sample verification analysis of PCBs as part of the Conceptual RD/RA WP.

The community may want to ask EPA if the Conceptual RD/RA WP should include a description of the proposed oversight sampling program to be conducted to ensure precise and accurate analysis of PCB remedy verification sampling to ensure remedy Performance Standards are met.

<u>General Comments</u>

52. As per the SOW, the Conceptual RD/RA WP is to provide "an evaluation of issues that may affect the type and extent of remediation activities" (pdf page 63) such as acquisition of necessary easements, management of water withdrawals and releases, and utilities.

Identification of riparian property ownership is described in Section 3.10 (pdf page 48) and shown in Figures 3-5a through 3-5e (pdf pages 166-170) indicating that GE has accomplished considerable coordination with landowners. However, there is no indication that cooperation with Reach 5A remedial actions has been accepted by these landowners, or if issues surrounding utilities within the Reach 5A construction area footprint have been addressed. Private property easement acquisition can be a lengthy and potentially litigious process. Furthermore, utility issues can also require significant coordination. In addition, as per the SOW (footnote 17, pdf page 63) the Conceptual RD/RA WP is to "reference the access agreement with Mass Audubon for a staging area, which is provided for in Section V.E of the Settlement Agreement"; TASC could not locate this access agreement within the Conceptual RD/RA WP. It is not clear if the Reach 5A schedule has taken these coordination activities into account.

The community may want to ask EPA if potential issues of time have been considered for the acquisition of easements (including the agreement with Mass Audubon), and whether coordination of water discharge management and utilities impacts have been adequately addressed.

53. An identification of Applicable or Relevant and Appropriate Requirements (ARARs) for the remediation and restoration work (SOW pdf page 63) is a required component of the Conceptual RD/RA WP. This review is to be "consistent with CERCLA, and to specify additional ARARs (not listed in Attachment C of the Permit)" (pdf page 217 of the Permit). GE did not identify any new ARARs of potential applicability to the Reach 5A RD/RA process in the Conceptual RD/RA WP. However, it may be prudent to have additional regulatory review of this document in order to be sure all ARAR possibilities have been identified. While it is acknowledged that the foundational Total PCB Performance Standards are based on conservative risk assessment assumptions, it may be appropriate to revisit the Human Health Risk Assessments to review any uncertainties that have evolved over time in response to human health risk assessment process changes. Furthermore, it is acknowledged that the ROR remedial action preempts standard regulatory requirements set forth in certain environmental regulations such as the Clean Water Act. However, it is not clear whether the Conceptual RD/RA WP is being shared with regulatory oversight authorities such as State of Massachusetts Department of Environmental Protection (MassDEP), U.S. Army Corps of Engineers and others in order to maintain open/transparent communication with these entities. This document represents the 30% conceptual design which is a crucial point in the Reach 5A RD/RA process where oversight from regulatory agencies would be prudent and beneficial. In addition, agency coordination is required in certain instances as per the Permit (coordination with NHESP to determine if existing Priority Habitat maps are applicable).

The community may want to ask EPA if it is appropriate to revisit the ARARs woven into the Human Health Risk Assessment (risk assessment exposure and toxicity assumptions), and if the review of this document is being coordinated with state and federal regulatory agencies who have authority over certain ARAR regulations (such as the Clean Water Act).

54. Primary Performance Standards include flood storage capacity, and tissue analysis of fish fillets and duck breast. It appears that a considerable amount has been accomplished to lay the foundation for the collection of data necessary to determine accomplishment of these Performance Standards. However, the communities have not had access to review of these data collection efforts. The original scope of work was described in the "Housatonic River - Rest of River RCRA Facility Investigation Report Volume 1 Report" (QEA and BBL, 2003); however, there have been no results provided for review. These results are integral to two of the three General Performance Standards (and the appropriate Corrective Measures necessary to meet the Performance Standards, pdf pages 17-21 of the Permit). They include Biota (pdf pages 19 and 20) which include a Short-Term Biota Performance Standard: average total PCB concentration of 1.5 mg/kg wet weight, skin off, in fish fillet in each entire reach of the river and Backwaters to be achieved within 15 years of completion of construction-related activities for that reach and a "Long-Term Biota Monitoring Performance Standard which is an average total PCB concentration of 0.064 mg/kg, wet weight, skin off, in fish fillet in each entire reach of the river, 0.00018 mg/kg in Backwaters, and 0.075 mg/kg in duck breast tissue." The collection and interpretation of tissues to reflect Rest of River restoration goals needs to be guided carefully. Waterfowl species are far ranging with large spatial life history habitat requirements. As a result, they will integrate exposure over large areas and their accumulated tissue burdens will reflect an integration of exposure over larger areas beyond the ROR boundaries. The tissue burden PCB concentrations gathered from wild waterfowl species will yield uncertain results and may not accurately reflect ROR remedy success. Section 10 of the Conceptual RD/RA WP describes the forthcoming supplemental data collection and treatability testing to be accomplished. Footnote #66 on pdf page 130 indicates that the anticipated data collection activities will include "(d) the fish community survey to be conducted along with the first round of fish tissue sampling in the baseline monitoring program."

The community may want to ask EPA if the results from the biological sampling of duck breast and fish tissues can be reviewed to understand the baseline condition of these two general Performance Standards.

55. The ROR Performance Standards are based on measurements of total PCBs. Total PCBs can be calculated as the sum of all Aroclors found in a sample (Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262 and 1268 must all be evaluated), or may be calculated as a sum of congeners if PCB congener analysis is conducted. The 2021 Pre-Design Investigation Work Plan for Reach 5A Sediment and Riverbanks collected paired Aroclor and congener PCB results to provide the data necessary to develop a relationship that can be used to convert the larger sediment Aroclor PCB data set to homolog concentrations. Results are incorporated into the chemical barrier design process for cap designs and are summarized in Appendix A, Section 3.2.3 within Step 4 "Apply Aroclor to Congener Conversion Factor" (pdf page 40 of Appendix A), which states "The data collected as part of the PDI partitioning study indicates that congener-based total PCB concentrations in sediment samples are generally higher than those measured by Aroclor method. The central tendency value of the ratio of paired congener-based to Aroclor-based PCB concentrations is approximately 1.7, when calculated using both log-

transformed and untransformed data. Thus, the Aroclor-based PCB sediment concentration data were multiplied by a factor of 1.7 for converting to sediment PCB homolog concentrations."

This indicates that a conversion factor of 1.7 is used to convert Aroclor-based Total PCB results to congener-based results. This is an important consideration when applied to the Total PCB disposal standards for on- and off-site consideration since "GE will segregate and dispose of off-site (out-of-state) soils containing high concentrations so that the remaining floodplain soil to be disposed of in the Upland Disposal Facility averages less than 50 mg/kg PCBs" (Revised Final Permit, pdf page 140, Attachment E Criteria/Methods Applicable to Disposal of Material Excavated in Rest of River Remedial Action). This factor will adjust the Total PCB concentrations upwards and may affect the selection of materials to be disposed to the UDF or off-site.

The community may want to ask EPA if the disposal of waste materials (which is based on Total PCB content) will be addressed using congener-based Total PCB results which are more conservative and reflective of true Total PCB concentrations.

56. As stated within the Conceptual RD/RA WP "the final horizontal and vertical extents of remediation will be determined during the final design process and will be presented in the Final RD/RA WP for Reach 5A" (Section 4.1, pdf page 51). The Final RD/RA WP would greatly benefit from additional maps showing PCBs using an isopleth type analysis (if possible). The Thiessen polygon results approach is broken down by large ranges of PCBs (1-10 mg/kg etc.) that do not coincide with the actual performance standard. It would be useful to see floodplain soil isopleths broken down by the EA-specific Performance Standards provided in Tables 1 and 2 of the Revised Permit (pdf pages 86 and 88), riverbank soils by performance standard and sediments by disposal category. In addition, it would be useful to layer sediment total PCB concentrations at depths (where sediment may be left in place after a removal action that relies on pumping of unconsolidated materials), overlain with Cap design selection. This layering of PCB results by location and performance standard would enable the reviewer to anticipate areas requiring remedy action.

The community may want to ask EPA if forthcoming PCB analysis maps in the Final RD/RA could be revised to depict Total PCBs using geospatial interpretation such as isopleth maps (to depict PCBs by depth and spatial distribution) using applicable Performance Standards to bracket the isopleths.

57. The SOW describes coordination requirements among EPA, Mass Audubon and GE (pdf page 115). As per the SOW, GE will meet with EPA and Mass Audubon prior to submittal of the Conceptual RD/RA WP to review the Revised Permit terms and how they relate to actual areas of remediation on the Canoe Meadows Wildlife Sanctuary. There is no mention in the Conceptual RD/RA WP about whether this effort took place.

The community may want to ask EPA if discussion of RD/RA impacts to the Canoe Meadows Sanctuary has been accomplished.

58. The ROR has been segmented into six separate Remediation Units (RUs) to manage workflow and schedule for the ROR Remedial Action. It seems appropriate to carry over certain Reach 5A features (such as support areas and access roads) to Reach 5B if possible.

The community may want to ask EPA if the forthcoming Final RD/RA for Reach 5A will attempt to coordinate certain features to overlap and be of use to Reach 5B.

References Cited

AECOM. Restoration Performance Objectives and Evaluation Criteria Report. Prepared for General Electric Company. August 2023. https://semspub.epa.gov/work/01/676611.pdf

AECOM. Revised Reach 5A Baseline Restoration Assessment Work Plan. July 2022. https://semspub.epa.gov/src/document/01/666154

AECOM. GE-Pittsfield/Housatonic River Site, Rest of River, Phase IB Cultural Resources Survey Work Plan for Reach 5A. Prepared for General Electric Company. September 2023. https://semspub.epa.gov/work/01/677550.pdf

AECOM, 2022. GE-Pittsfield/Housatonic River Site Supplemental Phase IA Cultural Resources Assessment Work Plan, January 2022. https://semspub.epa.gov/work/01/662290.pdf

AECOM, 2022. GE-Pittsfield/Housatonic River Site Rest of River Supplemental Phase IA Cultural Resources Assessment Report for the Housatonic Rest of River – Public Release Version. October 24, 2022. https://semspub.epa.gov/work/01/668925.pdf

AECOM, 2023. Housatonic River Reach 5A Baseline Restoration Assessment Report. Prepared for General Electric Company. August 2023. https://semspub.epa.gov/src/document/01/676610.pdf

AECOM, 2023. Pre-Design Investigation Summary Report for Reach 5A Sediment and Riverbanks. Housatonic River – Rest of River. September 2023. https://semspub.epa.gov/work/01/677551.pdf

Anchor QEA, LLC (Anchor QEA), AECOM and Arcadis. Final Revised Rest of River Statement of Work. Prepared for the General Electric Company. September 2021. https://semspub.epa.gov/src/document/01/659938.pdf

Anchor QEA, 2021. Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas. Prepared for General Electric Company, Pittsfield, Massachusetts. June 2021. https://semspub.epa.gov/work/01/655296.pdf

Anchor QEA, 2021. Second Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas. Prepared for General Electric Company, Pittsfield, Massachusetts. November 2021. https://semspub.epa.gov/work/01/661264.pdf

Anchor QEA, 2023. Second Revised Baseline Monitoring Plan. Housatonic River – Rest of River, January 2023. https://semspub.epa.gov/src/document/01/671796

Anchor QEA and AECOM, 2017. Floodplain Pre-Design Investigation Work Plan Reach 5A. Prepared for General Electric Company, Pittsfield, Massachusetts. October 2017. https://semspub.epa.gov/work/01/623201.pdf

Anchor QEA and AECOM. GE-Pittsfield/Housatonic River Site. Vernal Pool Pilot Study Work Plan. Prepared for General Electric Company. June 2023. https://semspub.epa.gov/work/01/673653.pdf

Anchor QEA and AECOM, 2021. Pre-Design Investigation Work Plan for Reach 5A Sediment and Riverbanks. Housatonic River – Rest of River. Prepared for General Electric Company. September 27, 2021. https://semspub.epa.gov/work/01/657113.pdf

Anchor QEA and Arcadis. Housatonic River – Rest of River. Pre-Design Investigation Summary Report for Reach 5A Non-Residential Floodplain Exposure Areas. Prepared for General Electric Company. September 2023. https://semspub.epa.gov/work/01/677551.pdf

Anchor QEA (Anchor QEA, LLC). Water Withdrawal and Uses Plan for the Rest of River Remedial Action. September 2022. https://semspub.epa.gov/work/01/668288.pdf

Anchor QEA (Anchor QEA, LLC). Sustainability and Climate Adaptation Plan. September 2022. https://semspub.epa.gov/work/01/668293.pdf

Anchor QEA (Anchor QEA, LLC), AECOM and ARCADIS. GE-Pittsfield/Housatonic River Site, Rest of River, Conceptual Remedial Design/Remedial Action Work Plan for Reach 5A. September 2023. https://semspub.epa.gov/work/01/677553.pdf

Berger, W., R. Valenca, Y. Miao, S. Ravi, S. Mahendra and S. Mohanty, 2019. Biochar increases nitrate removal capacity of woodchip biofilters during high-intensity rainfall. Water Research. Vol. 165. Nov. 15, 2019. 115008. https://www.sciencedirect.com/science/article/abs/pii/S0043135419307821

EPA. Revised Final Permit Modification to the 2016 Reissued RCRA Permit and Selection of CERCLA Remedial Action and Operation & Maintenance for Rest of River. December 2020. https://semspub.epa.gov/src/document/01/650440.pdf

EPA. Climate Resilience Technical Fact Sheet: Contaminated Sediment Sites. 2019. https://www.epa.gov/sites/default/files/2019-12/documents/cr_sediment_sites_fact_sheet_update.pdf

GE (General Electric Company), 2012. Letter to EPA. Regarding: GE-Pittsfield/Housatonic River Site Upper 1/2-Mile Reach of Housatonic River (GECD800), 2012 Deposited Sediment and Isolation Layer Sampling Report. November 20, 2012.

Gebert J., C. Knoblauch and A. Gröngröft, 2019. Gas Production from Dredged Sediment. Waste Management, Volume 85, 15 February 2019, Pages 82-89. https://www.sciencedirect.com/science/article/abs/pii/S0956053X18307529

Gebert, J. and C. Knoblauch, 2017. Long-term Gas Generation from Landfilled Dredged Sediment. Proceedings Sardinia 2017. Sixteenth International Waste Management and Landfill Symposium, 2 – 6 October 2017, S. Margherita di Pula, Cagliari, Italy. https://repository.tudelft.nl/islandora/object/uuid:b8244a5f-afca-455d-b8e6-2b70497c62b9/datastream/OBJ/download

Kong, Z., Y. Song, Z. Shao and H. Chai, 2021. Biochar-pyrite bi-layer bioretention system for dissolved nutrient treatment and by-product generation control under various stormwater conditions. Water Research. Vol. 26, Nov. 1, 2021 117737. https://www.sciencedirect.com/science/article/abs/pii/S0043135421009313

Massachusetts Department of Environmental Protection, Department of Fish and Game, Division of Ecological Restoration, 2010. "River Instream Flow Stewards (RIFLS) Quality Assurance Project Plan." https://www.mass.gov/doc/rifls-quality-assurance-project-plan-0/download

Massachusetts Water Resources Commission, Massachusetts Department of Environmental Protection, Office of Water Resources (MassDEP-OWR). Water Resources of the Housatonic River Basin: Water Use and Hydrology. May 1999. https://archives.lib.state.ma.us/bitstream/handle/2452/846484/ocm42421111.pdf?sequence=3&isAllowed=y

Massachusetts Department of Environmental Protection, Division of Watershed Management (MassDEP-DWM). Housatonic River Watershed, 2002 Water Quality Assessment Report. Report Number 21-AC-4. September 2007. https://www.mass.gov/doc/housatonic-river-basin-2002-water-quality-assessment-report-0/download

Narquis, C.T., J.E. Hyatt and A.L. Prignano, 2007. Generating the Right Data: Determination of Aroclor Versus PCB Congeners. Prepared for Department of Energy, Assistant Secretary for Environmental Management. https://clu-in.org/download/contaminantfocus/pcb/generating-the-right-pcb.pdf

QEA and BBL (Blasband, Bouch and Lee Inc.), 2003. Housatonic River - Rest of River RCRA Facility Investigation Report. Volume 1. Report, General Electric Company, Pittsfield, Massachusetts, September 2003. https://semspub.epa.gov/work/01/200656.pdf
Section 6 (Biological Sampling) https://semspub.epa.gov/work/01/580276.pdf

TASC Contact Information

Technical Advisor
Karmen King
[redacted]

Project Manager/Technical Advisor
Kirby Webster
[redacted]

Program Manager
Tiffany Reed
[redacted]

Skeo Co-CEO and Director of Finance and Contracts
Briana Branham
[redacted]

TASC Quality Control Monitor
Bruce Engelbert
[redacted]