HOUSATONIC REST OF RIVER MUNICIPAL COMMITTEE

February 18, 2022

Dean Tagliaferro, EPA Project Manager
GE-Pittsfield/Housatonic River Site
Boston, MA
Submitted via email to R1Housatonic@epa.gov

Re: Comments on the *Baseline Restoration Assessment Work Plan*

Dear Mr. Tagliaferro:

The Housatonic Rest of River Municipal Committee (the Committee) respectfully submits the following comments on the *Baseline Restoration Assessment Work Plan* (hereafter referred to as the Work Plan). The Committee has concerns associated with the use of the historical data, the overall proposed approach and certain data gaps observed in the Work Plan.

The Committee does not agree with the proposed approach to conduct a general assessment relying heavily on summarizing historical data of existing ecological conditions and functions. Although older data sets provide valuable information and should not be discarded, the Committee is concerned about the reliance on historical data and believes that additional, current data should be collected.

In addition, the Committee does not agree with the approach to only assess those areas that will be subject to remediation activities or potentially be affected by remediation activities. Further, the Committee does not support the approach to submit "Supplemental Baseline Restoration Assessment Reports" and wait until specific "Remediation Units" have been identified before conducting more specific, detailed baseline activities. New baseline data gathered from field work and other tasks should be used to inform cleanup design and technologies.

The Committee's comments on the *Baseline Restoration Assessment Work Plan* are enclosed as Attachment A.

Sincerely,
The Housatonic Rest of River Municipal Committee

Enclosure: Attachment A - Housatonic Rest of River Municipal Committee Comments on GE's Baseline Restoration Assessment Work Plan

Enclosure: Attachment B - Technical Assistance Services for Communities Comments, January 28, 2022

ATTACHMENT A
HOUSATONIC REST OF RIVER MUNICIPAL COMMITTEE
Comments on GE's *Baseline Restoration Assessment Work Plan*
GE/Housatonic River - Rest of River

The *Baseline Restoration Assessment Work Plan* (hereafter referred to as the Work Plan) relies heavily on summarizing historical data. The Rest of River Committee has concerns associated with the use of the historical data, and certain data gaps observed in the proposed approaches.

The remedial action must achieve a level of cleanup that at least attains those requirements that are legally applicable or relevant and appropriate. Remedial actions either attain or are waived from federal environmental Applicable or Relevant and Appropriate Requirements (ARARs), or more stringent state environmental ARARs, upon completion of the remedial action. The following regulations all have a defined limit to the validity of jurisdictional wetland delineation data once a permit is issued (three to five years):

- Clean Water Act – Section 404 (33 C.F.R. § 323.2(c)) as defined in Regulatory Guidance Letter No. 05-02;
- Massachusetts Water Quality Certification (314 CMR 9: 401); and
- Massachusetts Wetland Protection Act (310 CMR 10.00).

To maintain an appropriate schedule for this cleanup, it may be necessary for GE to conduct field work in 2022 to begin filling data gaps in Reach 5A. It is not clear whether the proposed timeline to conduct in-field biological surveys will meet the timeline requirements to acquire necessary biological information required for the Clean Water Act permit and certificate.

Review of the proposed data collection activities in the Work Plan identified several possible data gaps:

- Chemical characterization of surface water should include measures of total dissolved solids, common ions of chloride, magnesium, sodium, potassium, forms of nitrogen including nitrite and nitrate, and water quality measures of electrical conductivity, alkalinity and hardness. These measures provide useful information to monitor before, during and after sediment removal activities since mobilized sediment can affect these surface water parameters.
- Current, updated inventory of regulated federal and state species of concern, including Massachusetts species ranked Endangered, Threatened and Special Concern.
- Species of interest should include migratory birds and eagles. In addition, Reach 5A includes the Massachusetts Audubon parcel, which is a likely bird observational "hot spot" with a significant amount of bird species occurrence information.

The proposed data collection efforts should be amended to include the water quality measures and migratory bird species queries listed above.

The Work Plan states that much more baseline data for each RU will be gathered at a later date, including the form that will be used to collect this data. Submitting the forms so late in the process seems out of place. The form should be developed and presented up front to the EPA for their approval as a first step in the Work Plan review process. This form should also be presented to the MA Natural Heritage & Endangered Species Program (NHESP) for review and comment to ensure that all data, especially rare species data, is collected in a manner that meets their scientific and procedural standards.

The Rest of River Committee highlights the following Sections:

1. Section 1.1 (p 1) – The Work Plan emphasizes that the document provides recommendations for "site-wide" studies and literature-based reviews to be performed for ROR areas and that "more specific and detailed activities will be conducted for each remediation unit (RU)" and associated support areas such as access roads and staging areas in forthcoming supplemental BRA reports. It is important to conduct future ecological studies in river segments downgradient of riverbank and riverbed sediment removal and/or capping activities. These downgradient areas can potentially be affected by contaminant release and transport from riverbank soil release and/or sediment resuspension during remediation activities. This may be of particular importance to downriver core habitat areas with high ecological value, and to alkaline backwaters and ponds (since disturbed sediments may buffer the alkaline quality of the receiving water). The study of downgradient areas should be included in forthcoming RU-specific studies to capture the possible effects on the ecology located below riverbank and riverbed remedy activities.

2. Section 1.1 (p 1) – The Work Plan states that "portions where no remediation or impacts will occur" will not be addressed in the document. However, the purpose of the ecological surveys is to "serve as the foundation for meeting the restoration Performance Standards set forth in Section ll.B.1.c.(1) of the Revised Permit" that require that GE "return areas affected by corrective measures to pre-remediation conditions." It is important to recognize that the ecology in areas to be remediated is likely impaired due to the presence of contamination. Therefore, it is important to characterize existing ecological conditions and functions in areas not impaired by the presence of contamination to provide an accurate baseline for comparison for post-remediation sampling efforts. The proposed ecological investigations should include studies of uncontaminated settings to understand the full suite of ecological goals achievable during upcoming remediation activities.

3. Section 1.2 (p 2) – According to the Work Plan, the next document deliverables to be presented as part of the baseline restoration assessment are the Restoration Performance Objectives and Evaluation Criteria Report. Results of the proposed historical study review could assist with the identification of suitable evaluation criteria to measure habitat function recovery. A thorough review of the data gathered from the proposed historical

study compilation should be conducted to identify suitable evaluation criteria to be applied in the future for remedy effectiveness measurements.

4. Section 1.2 (p 2) – The Work Plan does not describe any baseline fish fillet or duck breast tissue sample collection efforts. The collection of tissue samples is integral to achieving the Permit Performance Standards. The Work Plan should include a discussion of the methods for collecting pre-remediation fish fillet and duck breast tissue samples.

5. Section 1.5 (p 3) – The Work Plan indicates that it provides a description of RU-specific approaches to characterize existing ecological conditions. However the Work Plan also states that "information relevant to assessment of the specific RUs will not be known". Based on previous soil PCB mapping, it appears there is sufficient information to estimate the potential footprint of certain reach-specific riverbank remedy areas. A preliminary conceptual model of these remedy areas would be helpful to further refine the approach. EPA should consider requiring a conceptual model of proposed remedy areas be constructed to assist with the development of a more detailed Work Plan.

6. Section 2 (pp 5-7) – The proposed approach to document sitewide baseline conditions includes updating existing habitat mapping and classification efforts with the collection of new LiDAR (light detection and ranging) and sonar scanning. However, most of the ecological conditions will be evaluated by consolidating existing information from previous ecological studies. The Work Plan assumes the historical studies fulfill a substantial amount of the data requirements. The Committee has several concerns related to this assumption:

    - The compiled study results may not entirely capture sitewide or specific remediation unit (RU) areas leaving data gaps in the ecological characterization.
    - The characterization goals and methods vary among the historical studies. Therefore, the ability to compare results for data comparison among the historical studies and with future proposed studies may be impossible.
    - The previous studies represent historical conditions that may not reflect the current ecological setting and would have uncertain and limited value for the characterization of current conditions.

    The Work Plan should include an assessment of the data gaps and uncertainties associated with using these previous studies, and whether the forthcoming RU-specific field investigations could include additional studies to fill these identified data gaps and address the significant sources of uncertainty.

7. Section3 (pp 9-31) – The proposed in-field surveys are focused on verification of habitat settings and characteristics, including riverine, riverbank, backwater, impoundment and wetland habitats. These habitat types are affected by the seasonal surface water and

groundwater flows. Therefore, it is important to capture habitat mapping during extreme periods that represent high-flow and low-flow conditions. This is especially important since recent hydrologic conditions for the Housatonic River have exhibited "unseasonable" high flows where high flows are observed outside of typical spring surface water release conditions. The proposed habitat mapping should be designed to include both high-flow and low-flow seasonal settings.

8. Section 3 (p 9) – The Work Plan states "flowing subreaches of Reach 7, which are designated for Monitored Natural Recovery (MNR) in the Revised Permit, will not be covered in the baseline restoration assessment". This does not support a key component of the MNR remedy, which is monitoring of recovery in biota. Furthermore, the flowing subreaches occur above, between and below impoundments. Therefore, it is important to measure the biological conditions that connect these important ecological features (since the recovery of the ecology in the flowing sections will be linked through flow and resource continuums). Baseline measures of chemical, physical and biological characteristics are imperative to the success of an MNR monitoring program. The flowing subreaches in Reach 7 should not be omitted from the Work Plan investigations.

9. Section 3.3 & Section 3.4 (pp 16-19) – The Work Plan is required to address backwater and impoundment habitats as part of the baseline investigation studies. As written, the Work Plan does not. These habitats are important settings that provide substantial functional value to the environment. The ecological characterization of these habitats should receive critical attention for the following reasons:
    - These habitat features are typically accessible to fish annually. Fish tissue PCB (and duck breast) concentrations are short-term and long-term performance goals.
    - Impoundments are located downgradient of reaches to be remedied to address sediment and riverbank contamination. Being located downgradient, these important habitats may be affected by riverbank and sediment releases during remedy efforts.
    - Backwaters were not a mapped community type in the 2002 Ecological Characterization (Woodlot, 2002), indicating that there is a data gap in the understanding of these habitats from the previous studies.
    - Release of sediments during a sediment removal remedy influence the alkaline nature of the impoundments.

    It is important to acquire more current water quality characterization of the impoundments in order to evaluate the possible impacts from sediment removal remedies performed at the impoundments or upgradient to them. It is not clear whether the proposed backwater and impoundment habitat investigative studies are comprehensive enough to characterize these settings.

10. Section. 3.4. (pp. 18-20) -- The coves on Columbia Street in Lee are currently listed in the Modified Permit within Reach 7B, associated with the Columbia Mill impoundment. Very little data has been collected on these coves, and they have not been previously assessed in any of the sources cited in the footnote of the Impoundment Habitat Characterization in Table 3.4.1. The Work Plan should specifically discuss how these coves will be assessed.

11. Section 3.5.1 (pp 21-23) – The Work Plan describes the proposed methods to inventory and characterize sitewide wetlands. However, key wetland characteristics are seasonally affected and heavily influenced by significant hydrologic changes. This important habitat type is truly dependent on current conditions and requires timely in-field delineation to capture the accurate wetland function and surface area. The use of historical studies would be highly inappropriate and uncertain for this habitat type. In addition, any wetlands remedy will need to adhere to both federal and state Applicable or Relevant and Appropriate Requirements (ARARs), as described in Attachment C of the Revised Permit. While the Work Plan appropriately acknowledges the suitable New England District, U.S. Army Corps of Engineers (USACE) methods for wetland delineation, the State of Massachusetts authority extends to the required Water Quality Certificate. The proposed wetland investigative approaches do not adequately capture seasonal influences on this habitat, and it is unclear whether the proposed methods adequately capture the necessary State Water Quality Certificate field requirements.

12. Section 3.7.1.-3.7.2. pp. (pp. 30-31) -- The Work Plan states that GE will coordinate with NHESP to determine if existing Priority Habitat maps are applicable today or if changes are warranted. This coordination and consultation should occur as a first step in identifying rare species habitat. It is our understanding that the agency is in the midst of issuing a revised version of BioMap, which could alter the boundaries of Priority Habitat and Estimated Habitat areas.

    The last rare species studies along the river corridor were done in 2008-2009. These may not reflect the current locations, abundance and supporting habitat needed for today's rare species populations. Additionally, the older studies likely did not capture species that have been added to the federal- or state-lists since 2009. These newer species need to be identified and documented. As one example, the presence of bats was not a focus or targeted set of species during these studies, as bat species were not listed at that time. Today, however, all known bat species in Massachusetts are now state-listed as endangered and their use of habitat along the river corridor will need to be documented.

    The Work Plan should include a detailed discussion about the timing of field work assessments for rare species, particularly to capture seasonal populations during breeding and migratory seasons.

13. Section 3.8 (pp. 31-32) -- The Work Plan has very few details on how invasive species populations will be identified, indicating a heavy emphasis on the use of aerial photography. Invasive species, by their very nature, can establish and expand their range at exponential rates, and data as young as two or three years old can become obsolete. A long-range plan to keep invasive species data current over the life of the cleanup should be outlined.

    GE proposes to document and rank invasive species population occurrences by relative abundance of foliage cover on a scale of 0-5%, 5-25%, 25-50%, 50-75%, or >75%. GE should provide more detail on the scale of the aerial photography to demonstrate that this technology is up to the task of identifying invasive species to the level at which they propose. In addition, more detail is needed to describe the time of year that the aerial surveys will be conducted to accurately capture location and extent of invasive species populations.

Technical Assistance Services *for* Communities
Comments on GE-Pittsfield/Housatonic River Site Baseline Restoration Assessment Work Plan
January 28, 2022

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Technical Direction: R1 2.0.14 GE Pittsfield

Technical Assistance Services for Communities (TASC)
Comments on GE-Pittsfield/Housatonic River Site
Baseline Restoration Assessment Work Plan, December 2021

Introduction

This document provides TASC comments on the GE-Pittsfield/Housatonic River Site Baseline Restoration Work Plan. This document is for the city of Pittsfield, the Berkshire Regional Planning Commission (BRPC) and municipalities to use as they develop comments to share with EPA. TASC does not make comments directly to EPA on behalf of communities. This document is funded by the U.S. Environmental Protection Agency's (EPA's) Technical Assistance Services for Communities (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 is required to prepare a work plan to conduct a Baseline Restoration Assessment (BRA) of areas that will be affected by the ROR Remedial Action selected by EPA in the Revised Final Permit. The BRA Work Plan describes the process and activities that GE will conduct to identify and document existing ecological conditions and functions in the areas that will be subject to remediation activities and associated support areas.

Summary

The December 2021 Baseline Restoration Assessment Work Plan has five sections:

- Introduction.
- Summary of Prior ROR [Rest of River] Ecological Inventories and Assessments.
- Procedures to Document and Assess Baseline Ecological Conditions and Functions.

- Schedule and Reporting.
- References.

The Performance Standards for the restoration of disturbed areas are to:

1. Implement a comprehensive program of restoration measures to address the impacts of the Corrective Measures (such as riverbank and riverbed sediment removal) on affected ecological resources, species and habitats, including, but not limited to, riverbanks, riverbeds, floodplains, wetland habitat and the occurrence of threatened, endangered, or other state-listed species and their habitats.
2. Return areas disturbed by remediation activities to pre-remediation conditions (e.g., the functions, values, characteristics, vegetation, habitat, species use and other attributes) to the extent feasible and consistent with the remediation requirements.

The documents below specify the program designed to address the potential impacts of remediation:

1. A BRA Work Plan.
2. A Restoration Performance Objectives and Evaluation Criteria Report.
3. Restoration Corrective Measures Coordination Plans.
4. Restoration Plans.

The BRA provides a detailed baseline ecological inventory and assessment of pre-remediation conditions and functions of the affected habitats. Thus, it serves as a foundation for meeting the restoration Performance Standards. The BRA applies to river bottom, riverbank, backwater, floodplain, impoundment and vernal pool habitats, as well as the occurrence of federal- or state-listed threatened or endangered species or other state-listed rare species present in the remediation units (RUs).

Data collection for the sitewide BRA and the initial RU-specific BRAs will start within 30 days of EPA approval of the BRA Work Plan or full EPA approval of the Reach 5A Sediment/Bank PDI Work Plan (which will provide for the collection of data for use in the BRA), provided that weather conditions are suitable for conducting such data collection. This activity is anticipated to occur in March 2022 (assuming timely EPA approval). The data collection will proceed for about seven months. The initial BRA Report will then be developed. It will be submitted within three months of the completion of data collection.

Additional activities will be described in, or in an addendum to, the Conceptual Remedial Design/Remedial Action Work Plan for each RU. Results will be presented in a Supplemental BRA Report for that RU. That Supplemental BRA Report will be submitted after the additional BRA data collection and before development of the Final Remedial Design/Remedial Action Work Plan for the subject RU.

TASC Comments

The TASC review indicates that the BRA Work Plan relies heavily on summarizing historical data. TASC comments below focus on the potential concerns associated with the use of the historical data, and certain data gaps observed in the proposed approaches.

1. The BRA Work Plan states that "portions where no remediation or impacts will occur" will not be addressed in the document (Section 1.1, second paragraph, pg. 8). However, the purpose of the ecological surveys in this BRA Work Plan are to "serve as the foundation for meeting the restoration Performance Standards set forth in Section ll.B.1.c.(1) of the Revised Permit" that require that GE "return areas affected by corrective measures to pre-remediation conditions." It is important to recognize that the ecology in areas to be remediated is likely impaired due to the presence of contamination. Therefore, it is important to characterize existing ecological conditions and functions in areas not impaired by the presence of contamination to provide an accurate baseline for comparison for post-remediation sampling efforts. TASC recommends:

    - Including investigation of areas with minimal to no contamination in the proposed in-field ecological habitat mapping.
    - Summarizing ecological setting characteristics of non-contaminated (or least contaminated) areas in the proposed review of the historical ecological studies.
    - Conducting an investigative study using literature-based, field-gathered information to determine the ecological setting of comparable areas that do not have any contamination (preferably using an upstream or background watershed comparable to the Housatonic River). For example, U.S. Fish and Wildlife Service Information, Planning and Consultation system (iPaC) database queries can be completed for comparable watershed systems to identify a robust list of federally protected species. The Massachusetts Natural Heritage and Endangered Species Program can also be reviewed to identify state-protected species.

    The community may want to ask EPA if the proposed ecological investigations should include studies of uncontaminated settings to understand the full suite of ecological goals achievable during upcoming remediation activities.

2. This BRA Work Plan describes the proposed approach to document sitewide baseline conditions by updating existing habitat mapping and classification efforts with the collection of new LiDAR (light detection and ranging) and sonar scanning, while most of the ecological conditions will be evaluated by consolidating existing information from previous ecological studies (summarized in Section 2.1 through Section 2.8). The BRA Work Plan assumes the historical studies will fulfill a substantial amount of the data requirements necessary for the characterization of habitat hydrology, geomorphology, bank characteristics, in-stream habitat characteristics, water quality, aquatic habitat, rare species habitat and riparian zone conditions adequately. TASC has several concerns related to this assumption:

- The compiled study results may not entirely capture the entire sitewide (or RU-specific) area, leaving data gaps in the ecological characterization.
- The characterization goals and methods varied among the historical studies. Therefore, the ability to compare results for data comparison among the historical studies and with future proposed studies may be uncertain.
- These previous studies represent historical conditions that may not reflect the current ecological setting (e.g., as noted in the Final Revised Rest of River Statement of Work, the 2002 Woodlot survey represents conditions that have been significantly altered from hydrologic influences). This study is the basis for the BRA Work Plan backwater characterization. Therefore, it would have uncertain value for the characterization of current conditions.

The amount of available historical information is substantial, as summarized in Section 2.1 through Section 2.8. However, as noted above, there are sources of uncertainty associated with relying on historical studies as the basis for characterizing sitewide and RU-specific ecological settings. TASC recommends that the forthcoming BRA acknowledge these uncertainties by:

- Summarizing the data gaps identified for sitewide and RU-specific areas by category (e.g., hydrology, geomorphology, aquatic biology, threatened and endangered species).
- Presenting the full spectrum of results and describing the uncertainties associated with them (e.g., spatial or temporal separation from current conditions).

The community may want to ask EPA if the upcoming BRA could include an assessment of the uncertainties associated with using these previous studies, and whether the forthcoming RU-specific field investigations could include studies to fill data gaps and address the significant sources of uncertainty.

3. The BRA Work Plan outlines the next document deliverables to be presented as part of the BRA process (Section 1.2, pg. 9). After the BRA Work Plan, the Restoration Performance Objectives and Evaluation Criteria Report will follow. Results of the proposed historical study review could assist with the identification of suitable evaluation criteria to measure habitat function recovery. For instance, previously collected measures of species occurrence (terrestrial plant species occurrence, diversity and density, and aquatic benthic macroinvertebrate species occurrence, density and diversity) are sensitive ecological measurements known to help determine remedy effectiveness (in the References below, please refer to studies designed for polychlorinated biphenyl [PCB] affected systems in Johnson, A. 2001, Nowicki et al., 2014, and Adams et al., 2005). TASC recommends a thorough review of the data gathered from proposed historical study compilation to identify the sensitive measurements already collected, that could be carried forward to measure temporal recovery from the remedy.

   The community may want to ask EPA if the proposed historical study compilation could include a review of the data to identify suitable evaluation criteria to be applied in the future for remedy effectiveness measurements.

4. The BRA Work Plan indicates that it provides a description of RU-specific approaches to characterize existing ecological conditions. However as stated in the document, "information relevant to assessment of the specific RUs will not be known" (Section 1.5, second paragraph, pg. 10). The document includes the same deferral for remediation area support areas as well. However, based on previous soil PCB mapping (provided in Figure 2-3 of the Revised Pre-Design Investigation Work Plan for Reach 5A Non-Residential Floodplain Exposure Areas), it appears there is sufficient information to estimate the potential footprint of certain reach-specific riverbank remedy areas, including the location of the support area(s). It may be beneficial to develop a preliminary conceptual model of these remedy areas to further refine the BRA Work Plan approach.

   The community may want to ask EPA if there is sufficient information from which a conceptual model of proposed remedy areas can be constructed to assist with the development of a more detailed BRA Work Plan.

5. The BRA Work Plan emphasizes that the document provides recommendations for "site-wide" studies and literature-based reviews to be performed for ROR areas and that "more specific and detailed activities will be conducted for each remediation unit (RU)" and associated support areas such as access roads and staging areas (second paragraph, Section 1.1) in forthcoming supplemental BRA reports. It would also be important to conduct future ecological studies in river segments downgradient of riverbank and riverbed sediment removal and/or capping activities. These downgradient areas can potentially be affected by contaminant release and transport from riverbank soil release and/or sediment resuspension during remediation activities. This may be of particular importance to downriver core habitat areas with high ecological value, and to alkaline backwaters and ponds (since disturbed sediments may buffer the alkaline quality of the receiving water).

   The community may want to ask EPA if the study of downgradient areas should be included in forthcoming RU-specific studies to capture the possible effects on the ecology located below riverbank and riverbed remedy activities.

6. The Revised Final Permit Modification to the 2016 Reissued RCRA Permit defines Performance Standards for Biota (pdf pgs. 19-20), which include:[1]

   - "Short-Term Biota Performance Standard shall be an average total PCB concentration of 1.5 milligrams per kilogram (mg/kg) wet weight, skin off, in fish fillet in each entire reach of the river and Backwaters.…"
   - "Long-Term Biota Monitoring Performance Standard shall...progress towards achieving an average total PCB concentration of 0.064 mg/kg, wet weight, skin off, in fish fillet…and 0.00018 mg/kg in Backwaters, and 0.075 mg/kg in duck breast tissue."

[1] Located at https://semspub.epa.gov/work/01/650440.pdf.

The BRA Work Plan does not describe any baseline fish fillet or duck breast tissue sample collection efforts. The collection of tissue samples is integral to achieving the Permit Performance Standards.

The community may want to ask EPA if the BRA Work Plan should include a discussion of the methods for collecting pre-remediation fish fillet and duck breast tissue samples.

7. The proposed in-field surveys are focused on verification of habitat settings and characteristics, including riverine, riverbank, backwater, impoundment and wetland habitats. These habitat types are affected by the seasonal surface water and groundwater flows. Therefore, it is important to capture habitat mapping during extreme periods that represent high-flow and low-flow conditions. This is especially important since recent hydrologic conditions for the Housatonic River have exhibited "unseasonable" high flows where high flows are observed outside of typical spring surface water release conditions.

   The community may want to ask EPA if the proposed habitat mapping should be designed to include both high-flow and low-flow seasonal settings.

8. The BRA Work Plan states "flowing subreaches of Reach 7, which are designated for Monitored Natural Recovery (MNR) in the Revised Permit, will not be covered in the BRA" (Section 3, second paragraph, pg. 16). The Final Revised Rest of River Statement of Work for corrective measures in flowing subreaches in Reach 7 (and throughout Reaches 9 through 16, as summarized in Section 2.2.8, pg. 25) includes monitoring of PCB concentrations in surface water, sediment and biota.[2] Therefore, a critical component to the MNR remedy is monitoring of recovery in biota. Furthermore, the flowing subreaches occur above, between and below impoundments. Therefore, it is important to measure the biological conditions that connect these important ecological features (since the recovery of the ecology in the flowing sections will be linked through flow and resource continuums). Baseline measures of chemical, physical and biological characteristics are imperative to the success of an MNR monitoring program.

   The community may want to ask EPA if it is appropriate to omit the flowing subreaches in Reach 7 from the BRA Work Plan investigations.

9. The BRA Work Plan is required to address backwater and impoundment habitats as part of the baseline investigation studies. Backwater areas encompass about 86 acres of surface area (please refer to Figure 3 of the Final Revised Rest of River Statement of Work, pg. 137), while impoundments cover 137 acres (combined acreage using values provided in Section 3.4.1, pg. 25). These habitats are important settings that provide substantial functional value to the environment. The ecological characterization of these habitats should receive critical attention for the following reasons:

   - These habitat features are typically accessible to fish annually. Fish tissue PCB (and duck breast) concentrations are short-term and long-term performance goals.

[2] Located at https://semspub.epa.gov/work/01/659938.pdf.

- Reach 5C contains the largest area of backwaters, and this reach is downgradient of Reaches 5A and 5B. Reaches 5A and 5B will likely encompass substantial remedy-affected areas that can transport contaminated riverbank soils and riverbed sediment to 5C. Similarly, impoundments are located downgradient of reaches to be remedied to address sediment and riverbank contamination. Being located downgradient, these important habitats may be affected by riverbank and sediment releases during remedy efforts.
- Backwaters were not a mapped community type in the 2002 Ecological Characterization (Woodlot, 2002), indicating that there is a data gap in the understanding of these habitats from the previous studies.
- As stated in the BRA Work Plan, "The primary habitat type associated with impoundments is characterized as moderately alkaline pond (Woodlot, 2002)…that are influenced by riverine flows to a greater extent than many moderately alkaline ponds in this region...". Sediment can act as a buffer to water quality conditions (such as alkalinity or acidic pH levels) with its carbonate cycling condition. Release of sediments during a sediment removal remedy may release this buffering capacity that could influence the alkaline nature of the impoundments. It is important to acquire more current water quality characterization of the impoundments in order to evaluate the possible impacts from sediment removal remedies performed at the impoundments or upgradient to them.

The community may want to ask EPA if the proposed backwater and impoundment habitat investigative studies are comprehensive enough to characterize these settings.

10. Review of the proposed data collection activities in this BRA Work Plan identified several possible data gaps:

    - Chemical characterization of surface water should include measures of total dissolved solids, common ions of chloride, magnesium, sodium, potassium, forms of nitrogen including nitrite and nitrate, and water quality measures of electrical conductivity, alkalinity and hardness. These measures provide useful information to monitor before, during and after sediment removal activities since mobilized sediment can affect these surface water parameters.
    - Species of interest should include migratory birds and eagles. The proposed U.S. Fish and Wildlife Service iPaC queries will provide the necessary information to identify potentially occurring migratory birds and eagles. In addition, Reach 5A includes the Massachusetts Audubon parcel, which is a likely bird observational "hot spot" with a significant amount of bird species occurrence information. These observations gathered from the iPaC queries and the Audubon parcel observations would provide a robust list of bird species applicable to the sitewide data inventory that could be used to determine if the remedy improves the number of species that frequent this area.

    The community may want to ask if the proposed data collection efforts should be amended to include the water quality measures and migratory bird species queries listed above.

11. Section 3.5.1 of the BRA Work Plan describes the proposed methods to inventory and characterize sitewide wetlands. TASC identified two related concerns:

    - Key wetland characteristics are seasonally affected and heavily influenced by significant hydrologic changes (such as those observed in recent years that demonstrated unseasonably high flows). This important habitat type is truly dependent on current conditions and requires timely in-field delineation to capture the accurate wetland function and surface area. The use of historical studies would be highly uncertain for this habitat type.
    - Any eventual wetlands remedy will need to adhere to both federal and state Applicable or Relevant and Appropriate Requirements (ARARs), as described in Attachment C of the Revised Permit. While the BRA Work Plan appropriately acknowledges the suitable New England District, U.S. Army Corps of Engineers (USACE) methods for wetland delineation, the State of Massachusetts authority extends to the required Water Quality Certificate (please refer to the discussion provided in Comment 12 below).

    The community may want to ask EPA if the proposed wetland investigative approaches adequately capture seasonal influences on this habitat, and if the methods capture the necessary State Water Quality Certificate field requirements.

12. The remedial action must achieve a level of cleanup that at least attains those requirements that are legally applicable or relevant and appropriate. Remedial actions either attain or waive federal environmental ARARs, or more stringent state environmental ARARs, upon completion of the remedial action. TASC briefly reviewed the federal and state ARARs to determine if there is a time limit to the validity of the data required by the regulations. TASC found that the following regulations all have a defined limit to the validity of jurisdictional wetland delineation data once a permit is issued (three to five years):
    - Clean Water Act – Section 404 (33 C.F.R. § 323.2(c)) as defined in Regulatory Guidance Letter No. 05-02.[3]
    - Massachusetts Water Quality Certification (314 CMR 9: 401).[4]
    - Massachusetts Wetland Protection Act (310 CMR 10.00).[5] (timeline requirement is associated with the required wetland jurisdictional delineation that is a part of the Massachusetts Water Quality Certification).

    TASC did not find any time limit to the validity of biological data collected for the Massachusetts Endangered Species Act (MESA) ARAR (321 Code of Massachusetts

[3] U.S. Army Corps of Engineers. Regulatory Guidance Letter, No. 05-02, June 14, 2005. See pg. 1 of 3. https://www.nap.usace.army.mil/Portals/39/docs/regulatory/rgls/rgl05-02.pdf.

[4] MassDEP: WW 07, 08, 09: Water Quality Certifications, Dredging. https://www.mass.gov/how-to/ww-07-08-09-water-quality-certifications-dredging-projects. See pg. 5 of 11 of the application pdf (link below). https://www.mass.gov/doc/instructions-brp-ww-07-08-09-water-quality-certifications-dredging-projects-0/download.

[5] Massachusetts Department of Environmental Protection – Wetlands Protection Act Regulations. Time requirement based on the MassDEP Water Quality Certification requirement. https://www.mass.gov/regulations/310-CMR-1000-wetlands-protection-act-regulations.

Regulations [CMR] 10.00).[6] However, the MESA ARAR requires review of project impacts to significant habitats, and the Massachusetts Division of Fisheries and Wildlife correspondence (Attachment B of the Final Permit, pg. 104) indicates "a final MESA evaluation will not be completed until the remedy design phase." To maintain an appropriate schedule for this cleanup, it may be necessary for GE to conduct field work in 2022 to begin filling data gaps in Reach 5A. The Reach 5A remedy action will require a federal Clean Water Act, Section 404 Dredge and Fill Permit (33 United States Code 1344: 33 Code of Federal Regulations [CFR] Parts 320-323, 325, 332 and 40 CFR Part 230), which also requires a Massachusetts State Water Quality Certificate.[7,8] Both the 404 permit and the 401 certificate require "timely" jurisdictional delineation of wetlands. As per guidance provided in the USACE Regulatory Guidance Letter (RGL 05-02, June 14, 2005) a jurisdictional delineation remains valid for a period of five years unless new information warrants revision of the determination before the expiration date or if a district engineer identifies specific geographic areas that merit re-verification. The 404 permit also requires an evaluation of threatened and endangered species (and their habitats). Therefore, the surveys for these biological components follow the same life cycle of five years.

The community may want to ask EPA if the proposed timeline to conduct in-field biological surveys will meet the timeline requirements to acquire necessary biological information required for Clean Water Act permit and certificate acquisition.

[6] Massachusetts Endangered Species Act. https://www.mass.gov/regulations/321-CMR-1000-massachusetts-endangered-species-act.
[7] See Attachment C of the Final Permit, pg. C-3, pdf pg. 114.
[8] See Attachment C of the Final Permit, pg. C-7, pdf pg. 118.

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TASC Contact Information

Technical Advisor
Karmen King
970-852-0036
kking@skeo.com

Technical Advisor
Kirby Webster
802-227-7290
kwebster@skeo.com

Call Order Manager
Emily Chi
541-238-7516
echi@skeo.com

Project Manager/Program Manager
Eric Marsh
817-752-3485
emarsh@skeo.com

Skeo Vice President, Director of Finance and Contracts
Briana Branham
434-226-4284
bbranham@skeo.com

TASC Quality Control Monitor
Bruce Engelbert
703-953-6675
bengelbert@skeo.com