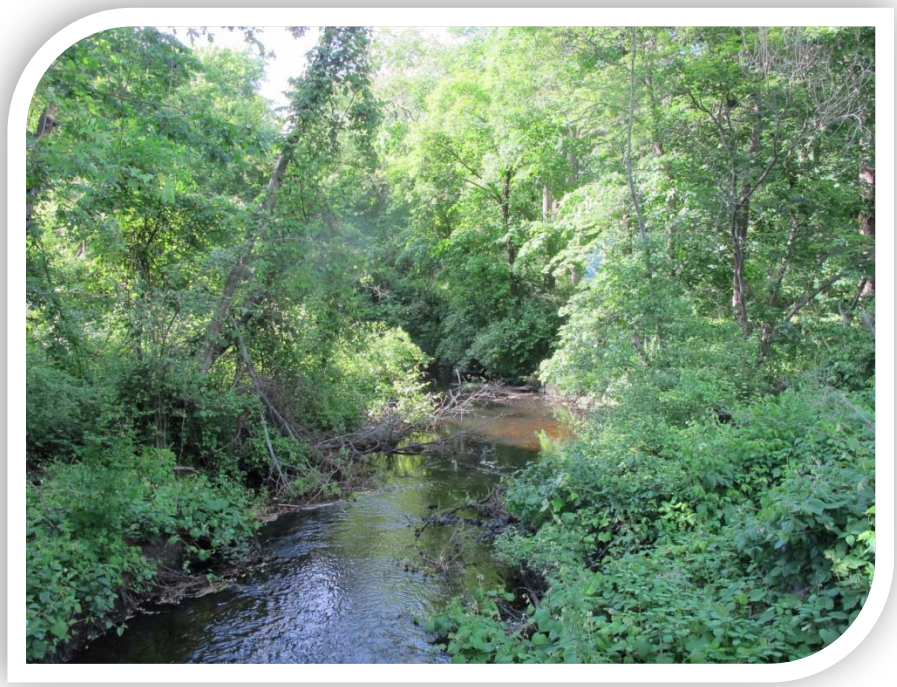
FINAL
RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT

for the

BLACKBURN & UNION PRIVILEGES SUPERFUND SITE
NATURAL RESOURCE DAMAGE SETTLEMENT

WALPOLE, MASSACHUSETTS



Prepared by:

United States Fish and Wildlife Service
and
Massachusetts Executive Office of Energy and Environmental Affairs

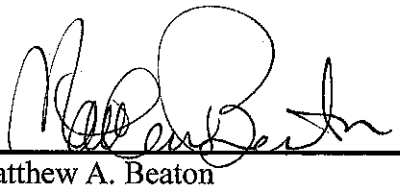
This Environmental Assessment becomes a Federal document when evaluated and signed by the responsible Federal Official.

Executive Office of Energy and Environmental Affairs

Approval of the
Final Restoration Plan/Environmental Assessment for Blackburn & Union Privileges Superfund Site Natural Resource Damage Settlement

In accordance with Trustee protocol regarding documentation for Natural Resource Damage Assessment and Restoration (NRDAR) projects, the Executive Office of Energy and Environmental Affairs (EEA) is providing its approval of the Final Restoration Plan/Environmental Assessment (RP/EA) for the Blackburn & Union Privileges Natural Resource Damage Settlement.

Approved:



9/7/18

Matthew A. Beaton
Secretary of Energy and Environmental Affairs
Commonwealth Natural Resource Trustee

Date

U.S. Department of the Interior
Approval of the
Final Restoration Plan and Environmental Assessment
for the
Blackburn & Union Privileges Superfund Site Natural Resource Damage Settlement, Walpole, Massachusetts

In accordance with U.S. Department of the Interior (Department) policy regarding documentation for natural resource damage assessment and restoration projects (521 DM 3), the Authorized Official for the Department must demonstrate approval of draft and final Restoration Plans and their associated National Environmental Policy Act documentation, with concurrence from the Department's Office of the Solicitor.

The Authorized Official for the Blackburn & Union Privileges Superfund Site is the Regional Director for the U.S. Fish and Wildlife Service's Northeast Region.

By the signatures below, the final Restoration Plan/Environmental Assessment is hereby approved.

Approved:

Wendi Weber Date
Acting Regional Director 25 OCT 2018
Northeast Region
U.S. Fish and Wildlife Service

Concurred:

Mark Barash Date 10/25/2018
Senior Attorney
Northeast Region
Office of the Solicitor

UNITED STATES FISH & WILDLIFE SERVICE

ENVIRONMENTAL ACTION STATEMENT

Within the spirit and intent of the Council of Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA) and other statutes, orders and policies that protect fish and wildlife resources, I have established the following administrative record and have determined that the action of the *Final Restoration Plan and Environmental Assessment for the Blackburn & Union Privileges Superfund Site Natural Resource Damage Settlement*:

____ is a categorical exclusion as provided by 516 DM 6 Appendix 1 and 516 DM 6, Appendix 1. No further documentation will therefore be made.

XX_ is found not to have significant environmental effects as determined by the attached Environmental Assessment and Finding of No Significant Impact.

____ is found to have significant effects, and therefore further consideration of this action will require a notice of intent to be published in the Federal Register announcing the decision to prepare an EIS.

____ is not approved because of unacceptable environmental damage, or violation of Fish and Wildlife Service mandates, policy, regulations, or procedures.

____ is an emergency action within the context of 40 CFR 1506.11. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other supporting documents (list):

Final Restoration Plan and Environmental Assessment for the Blackburn & Union Privileges Superfund Site

Acting Regional Director/DOI Authorized Official — Date: 25 OCT 2018

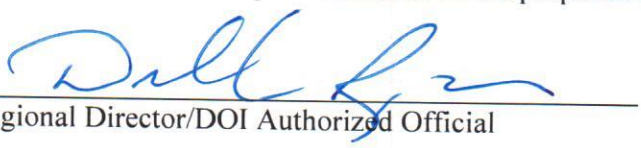
FINDING OF NO SIGNIFICANT IMPACT

Final Restoration Plan and Environmental Assessment for the Blackburn & Union Privileges Superfund Site Natural Resource Damage Settlement

The U.S. Department of the Interior and the Commonwealth of Massachusetts have completed this Final Restoration Plan and Environmental Assessment (Final Restoration Plan) that explains the decisions of the Trustees to use the $1 million natural resource damage settlement to support multiple ecological restoration projects in the Upper Neponset River watershed and groundwater restoration projects in the Head of the Neponset Sole Source Aquifer. This restoration effort is a multi-year program that will restore, replace, and/or acquire the equivalent of the natural resources injured, destroyed, or lost due to the releases of hazardous substances to the environment from the Blackburn & Union Privileges Superfund Site in Walpole, Massachusetts. The restoration projects selected for funding, including a holistic, watershed-scale approach to restoration of the Traphole Brook sub-watershed and a wetland habitat enhancement project in downtown Walpole, will improve fish and wildlife habitat and benefit groundwater resources in the Upper Neponset River watershed in Massachusetts.

The Trustees provided the Draft Restoration Plan and Environmental Assessment for public review from May 3, 2018 through June 8, 2018. A notice of availability was published in the local media outlets and on May 10, 2018, the Trustees held a public meeting to discuss the Draft Restoration Plan, respond to questions from the public, and receive input on project selections. Trustee responses to public comments are presented in Section 5 of the Final Restoration Plan. In general, the comments supported the selected restoration projects identified by the Trustees. Some clarifications and additional information have been provided in response to the comments; however, the Trustees did not significantly change any decisions regarding the projects funded.

Based on a review and evaluation of the information contained in the Final Restoration Plan, I have determined that the proposed actions do not constitute a major federal action which would significantly affect the quality of the human environment within the meaning of Section 102 (2)(c) of the National Environmental Policy Act (NEPA) of 1969. Accordingly, the preparation of an environmental impact statement on the proposed actions is not required at this time.



Acting Regional Director/DOI Authorized Official

25 OCT 2018

Date

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EXECUTIVE SUMMARY

The Blackburn & Union Privileges Superfund Site (B&U Site) includes 22 acres of land and water in Walpole, Massachusetts. The Commonwealth of Massachusetts (Commonwealth) and the Department of the Interior (DOI) jointly received a monetary settlement totaling $700,000 as damages to be expended for natural resource restoration to compensate the public for injuries to natural resources caused by the release of hazardous substances into the environment from the B&U Site. Additionally, the Commonwealth received $300,000 specifically for injuries to groundwater resources resulting from the release of hazardous substances from the B&U Site.

The Commonwealth, represented by the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) and DOI, represented by the U.S. Fish and Wildlife Service, are responsible for using these settlement funds to implement restoration projects that will restore, replace, rehabilitate or acquire equivalent natural resources or services to those that were injured**.**

The two agencies considered three alternatives for using the joint $700,000 settlement. The results of the evaluations of the three alternatives are presented in this document:

Alternative 1 (preferred)	**Tier 1: Traphole Brook Watershed Restoration Initiative** **Tier 1: Memorial Pond Wetland Restoration & Enhancement** **Tier 2: Sharon Great Cedar Swamp Hydrologic Modeling** **Tier 2: Land Conservation**
Alternative 2	**Daylighting the Neponset River on the B&U Site**
Alternative 3	**No Action – do not implement any restoration projects**

The Trustees jointly select Alternative 1 (preferred) to implement for this portion of the settlement.

Regarding the $300,000 State-only groundwater settlement, the Commonwealth will select restoration projects through a competitive grant process. The proposed grant process will focus on projects that benefit groundwater recharge, help to reduce groundwater demand and support integrated management of drinking water supplies and wastewater treatment.

Comments on the Draft Restoration Plan were accepted from Thursday, May 3, 2018 through Friday, June 8, 2018. A total of six written comments were received. Generally, the comments supported the Trustees' preferred restoration alternative. One Walpole community member expressed objections to the preferred alternative, asserting that implementing it would not lead to enough of the funds being spent in Walpole. In addition to receiving written comments, the Trustee Council also met with the Town of Walpole at the Town Administrator's request to clarify how funds would benefit natural resources in Walpole under the preferred alternative.

Clarifications and additional information were incorporated into the Final Restoration Plan in response to the comments received; however, the Trustees did not make any substantial changes to their preferred restoration alternative.

1. INTRODUCTION

The B&U Site encompasses approximately 22 acres of land and water in Walpole, Massachusetts consisting of the B&U property and any other location where hazardous substances released at the B&U property have come to be located. The contamination extends from east of South Street in a downstream direction along both sides of the Neponset River to Lewis Pond at West Street. The operations of various industrial facilities dating back to the 17th century resulted in the contamination of the soil, groundwater, surface water and sediment with arsenic, lead and other hazardous substances. The hazardous substances released have impacted fish, wildlife and their habitats.

The Commonwealth and DOI jointly received a monetary settlement totaling $700,000 to be expended to compensate the public for injuries to natural resources caused by the release of hazardous substances into the environment from the B&U Site. Additionally, the Commonwealth received $300,000 for injuries specifically to groundwater resources resulting from the release of hazardous substances from the B&U Site.

The Commonwealth and DOI negotiated these settlements under the authorities of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund Law), CERCLA, 42 U.S.C. §9607(f) and the Massachusetts Oil and Hazardous Materials Release Prevention & Response Act, M.G.L. Chapter 21E, as amended. The Superfund Law authorizes Natural Resource Trustees (federal agencies, states and tribes) to act on behalf of the public to assess and seek compensation for natural resources injured by the release of hazardous substances into the environment. The Natural Resource Trustees (Trustees) for the B&U Site are the Secretary of the Interior, represented by the U.S. Fish and Wildlife Service (Service) and the Secretary of EEA, represented by the Massachusetts Department of Environmental Protection (MassDEP), which administers the Natural Resource Damages (NRD) Program. Within the Service, the New England Field Office administers the NRD program for all six New England states.

Natural Resource Trustee	Representative Agency	Trustee Representative
Secretary of Energy and Environmental Affairs	Department of Environmental Protection	Karen Pelto (Primary) Gerard Martin (Alternate)
Secretary of the Interior	U.S. Fish and Wildlife Service, Region 5	Molly Sperduto (Primary) Lauren Bennett (Alternate)

The Superfund Law requires that natural resource damage settlements be used ***to restore, replace, rehabilitate or acquire equivalent natural resources or services*** to those that were injured**,** in accordance with a restoration plan developed by the designated Trustees. Thus, the B&U Site settlement must be used to develop and implement a restoration plan (this document) that identifies projects that will specifically restore ecologically impacted resources (stream,

floodplain and wetland habitats, along with the species that rely upon these habitats), as well as groundwater resources. These funds cannot be used for projects addressing unrelated injuries or concerns, remediation efforts at the B&U Site, or to compensate other parties who may have been negatively impacted by the B&U Site.

EEA and the Service, acting in their capacity as Trustees on behalf of the public, prepared this Final Restoration Plan and Environmental Assessment that:

- identifies the injuries to be restored through this effort;
- selects specific natural resource restoration projects for funding that will best compensate the public for the natural resource injuries caused by releases of hazardous substances from the B&U Site;
- explains why projects were selected and what alternative projects were considered;
- ensures that restoration project selection and implementation comply with Federal, State and local environmental laws and policies; and
- involves the public in the restoration planning process.

Chapter 1 provides background on the B&U Site and natural resource damage settlements; describes the wide range of restoration project ideas that the Trustees received and explored; and describes the criteria Trustees used to evaluate potential restoration projects.

Chapter 2 describes the three restoration alternatives that the Trustees considered for the joint $700,000 settlement and presents the Trustees' preferred restoration alternative, which includes several restoration projects. The Trustees' preferred restoration alternative is a suite of Tier 1 and Tier 2 projects, with Tier 1 projects being the Trustees' highest priorities. Tier 2 proposed projects may be implemented or partially implemented should the Tier 1 projects come in under budget or become infeasible due to unforeseen circumstances.

Chapter 3 presents an analysis of the potential ecological, socioeconomic and historic/cultural effects of all restoration project alternatives considered. This chapter is the primary vehicle through which the Service and EEA are ensuring that the Final Restoration Plan and the projects proposed therein comply with the National Environmental Policy Act (NEPA). During project implementation, individual restoration projects may be determined to exceed thresholds established under the Massachusetts Environmental Policy Act (MEPA), triggering a MEPA review process. For some of the specific restoration projects selected, additional consultation, compliance and permitting under laws such as the Endangered Species Act, the Clean Water Act and the National Historic Preservation Act may be required once specific project engineering and design plans are developed. Explanation for how projects will comply with these and other laws is provided in Table 2.

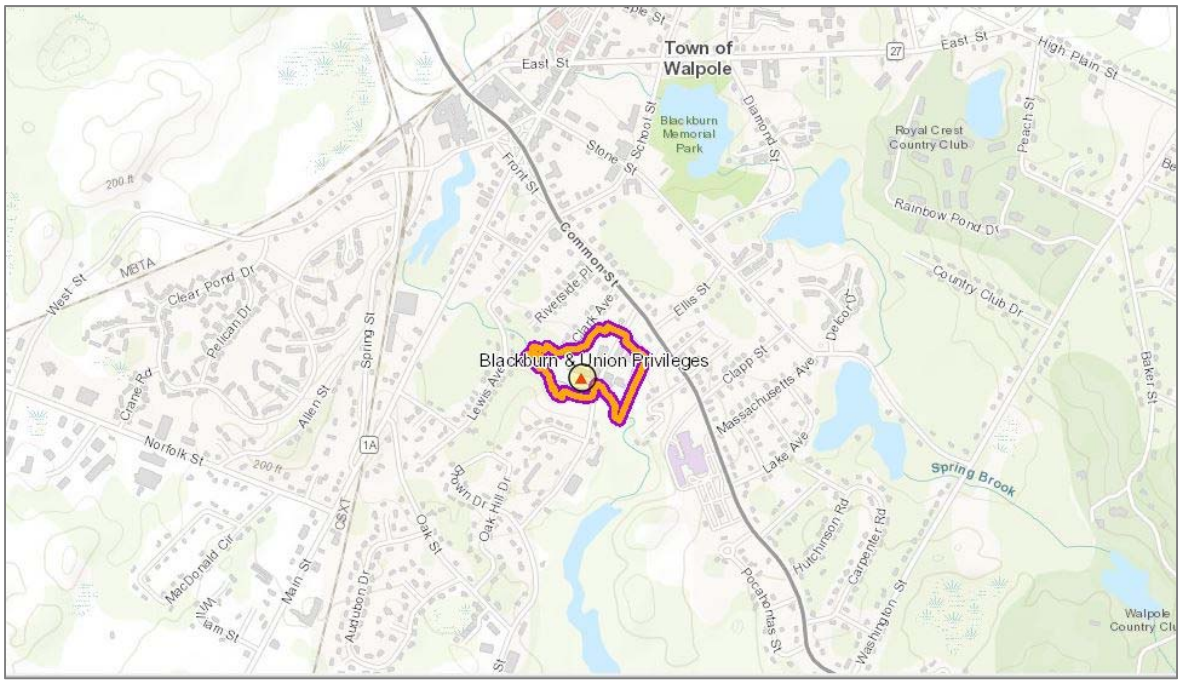
Chapter 4 describes the Grant Announcement and Application process through which EEA will solicit and evaluate specific groundwater restoration proposals.

Chapter 5 summarizes the comments received during the public comment period for the Draft Restoration Plan. The verbatim comments are provided in Appendix A.

1.1 History of the Site

The B&U Site has a long history of use as an industrial area; manufacturing activities and/or industrial operations have occurred at this location since the 17th century when this section of the Neponset River was divided into different water privilege areas. The Blackburn Privilege side (east of South Street) used electrical power generated from the Lower Blackburn Dam to produce machinery, cotton, yarn, batting and lamp wicking. The Union Factory Privilege side (west of South Street) was the location of a tannery and buildings for the production of various goods (e.g., snuff, iron, nails, cotton, and wool). In 1915, Standard Woven Fabric used the mill building located on the B&U Site to manufacture asbestos brake linings. In 1937, the Kendall Company began using the mill building for the production of cotton and fabric. Wastewater from the Kendall Company's manufacturing operation was initially discharged into one of two on-Site settling lagoons and was subsequently discharged into the Walpole sanitary sewer system. One of the lagoons was not used after 1982; the other lagoon received discharges of non-contact cooling water until 1985.

As a result of industrial operations at the B&U Site, a variety of hazardous substances were released into the environment. The manufacturing of brake pads and linings resulted in the release of asbestos, while various manufacturing activities contributed to the release of metals, volatile organic compounds (VOCs), and semi-volatile organic compounds at the B&U Site. Remedial actions at the B&U Site began in 1988 with the closure and removal of above-ground and underground storage tanks.



Map of the B&U Site (Environmental Protection Agency).

In 1992, Shaffer Realty Nominee Trust, BIM Investment Trust, and W. R. Grace & Company-Connecticut excavated and consolidated the asbestos-contaminated soils under a 30-inch soil

cover. To protect the cap, a fence was built around the area. In addition, as part of the capping a 400-foot section of the Neponset River, just west of South Street, was enclosed in a culvert. Various additional remedial activities (e.g., removal of asbestos-containing soil, construction of access roads and sewer line relocation) caused temporary and permanent impacts to palustrine and emergent wetlands. An estimated 0.49-acre of temporary impacts were mitigated through in-place restoration and an estimated 0.25-acre of permanent impacts were mitigated by the creation of a 0.3-acre palustrine shrub swamp and emergent marsh adjacent to the Neponset River.

In 1994, the B&U Site was listed on the U.S. Environmental Protection Agency's (EPA) National Priorities List, and by 1999, W. R. Grace and the Kendall Company had agreed to perform the Remedial Investigation/Feasibility Study. Sampling of soil, groundwater, surface water, and sediments began in the spring of 2001 and was completed in the fall of 2003, although additional data were later collected and incorporated into an Addendum to the 2007 Remedial Investigation Report. By 2008, a cleanup plan had been proposed, and a Record of Decision for the B&U Site was signed in September 2008. The selected remedy included treatment of contaminated groundwater that discharged into surface water, and excavation of contaminated soil and sediment from several areas, including the Neponset River, Former Mill Tailrace, Lewis Pond, a section east of South Street and from Settling Basin No. 2 Containment Cell, if deemed necessary. The selected remedy also included the establishment of a "compliance boundary" around portions of the B&U Site where groundwater contamination had been detected and restrictions were placed on its use.

A number of activities have occurred on and near the B&U Site recently:

- the former mill building on the west side of South Street was demolished;
- soil was removed from the property east of South Street due to metals, organics, and asbestos contamination;
- a short-term response action was performed whereby soil was removed from a residential lot due to lead contamination;
- buildings and associated slabs were removed from the east of South Street;
- additional soil was removed from the property east of South Street from below the former buildings;
- the west side of South Street was redeveloped to include a parking lot for the future police station and senior center to be built by the Town on the east of South Street; soil contaminated with asbestos was either removed from the B&U Site or remains with appropriate cover materials;
- a groundwater treatment plant was constructed on the west of South Street; and
- sediments were removed from the former mill tailrace due to asbestos contamination.

These actions are planned for the near future:

- a groundwater collection trench will be constructed in 2018 to intercept high pH groundwater before it discharges into the former mill tailrace; and
- sediment is expected to be removed from Lewis Pond in 2018 due to asbestos contamination.

1.2 Natural Resource Damage Assessment and Settlement

The Trustees conducted an assessment of the injuries caused by the releases of hazardous substances from the B&U Site and impacts related to remedial actions and then negotiated with the companies determined to be potentially responsible for the releases of hazardous substances (Potentially Responsible Parties or PRPs) to reach settlement regarding compensation for those injuries. The injuries resulting from remedial actions involved the loss of approximately 400 feet of riverine habitat; and elevated levels of contamination resulted in injury to nearly 2 acres of wetlands and impacts to groundwater. The details of the $1,000,000 settlement are described in a Consent Decree finalized and published on August 3, 2011, following a public review and comment period (https://www.cerc.usgs.gov/orda_docs/CaseDetails?ID=1051) (accessed March 2018).

The Consent Decree specifies that settlement funds be used to develop and implement a restoration plan that will restore the impacted ecological resources (river/stream, floodplain and wetland habitats, along with the species that rely upon these habitats), as well as groundwater resources, according to the following allocation:

Restoration of ecological resources *(joint settlement)*	**$575,000**
Restoration of both groundwater and ecological resources *(joint settlement)*	**$125,000**
Restoration of groundwater resources *(state-only settlement)*	**$300,000**
Total Settlement:	**$1,000,000**

The $575,000 allocated for ecological resources must be used for projects that will restore ecological resources. MassDEP and the Service together will make the final determination on how these funds are used.

The $125,000 allocated for both groundwater and ecological resources must be used for projects that will restore both ecological and groundwater resources. MassDEP and the Service together will make the final determination on how these funds are used.

MassDEP has actively discussed and collaborated with the Service in its exploration of potential groundwater restoration projects for the $300,000 received by the Commonwealth and allocated solely for restoration of groundwater resources. The Commonwealth will make the final determination on how these funds will be used and will manage their distribution, as discussed in Chapter 4.

A limited portion of the settlement will be used by both Trustees to support the staff time required to develop a restoration plan (i.e., outreach to public, exploration of projects, writing the plan). Additionally, because the Trustees are legally required to ensure that restoration projects are implemented and monitored, settlement funds will also be used to support Trustee staff time related to oversight of restoration projects during and after implementation.

Trustee Council

The Trustees for the B&U Site formed a Trustee Council, which operates under a Memorandum of Agreement (MOA) describing how the two Trustees will make decisions, resolve disagreements, conduct administrative and accounting activities, and ensure that the settlement funds are used for their intended purpose. In developing this Final Restoration Plan, the Trustee Council relied upon input from the community of Walpole, local watershed organizations, and interested members of the public.

1.3 Coordination and Public Participation

Meaningful public participation and involvement is a critical element of the restoration planning process, as is coordinating with the variety of State, local and Federal agencies and non-governmental organizations that steward and manage natural resources in the Upper Neponset River Watershed.

The Trustee Council initiated the restoration planning process by meeting with the Walpole Town Administrator and his staff to inform them about the restoration planning process and solicit restoration project ideas. The Trustee Council held a public meeting in Walpole in June 2016 to discuss the natural resource damage settlement, explain what types of restoration projects would qualify for the funding, and ask the public and stakeholders for ideas. The meeting was advertised in the local paper and via a press release. E-mail notification was sent to potentially interested stakeholders. Most notably, Walpole's Health Director arranged for meeting flyers to be distributed door to door in neighborhoods adjacent to the B&U Site. Approximately 25 people attended the meeting.

Meeting attendees participated in brainstorming sessions and discussed potential restoration project types (e.g., riparian plantings, dam removal, land conservation) and were also asked for their ideas about potential projects and locations. Comments and ideas were recorded and a wide variety of potential restoration project ideas were shared, which greatly aided the Trustee Council.

From June 2016 to July 2017, Trustee Council members worked with restoration project proponents to understand the feasibility and potential likelihood of success of proposed projects. The Trustee Council reviewed existing plans and data related to the projects, consulted outside experts, and met on- and off-Site with project proponents to explore and discuss potential projects.

The Draft Restoration Plan for the Blackburn & Union Privileges Superfund Site Natural Resource Damage Settlement was released for public review and comment on May 3, 2018. A notice was published in the Walpole Times announcing and requesting public comment. Comments were accepted until June 8, 2018; and a total of six written comments were received (discussed in Chapter 5). The Trustees also hosted an informational public meeting for 11 attendees at the Walpole Library on May 10, 2018. During the meeting, the Trustees provided an overview of the Draft Restoration Plan and had an in-depth question and answer session about the proposed restoration projects presented in the plan.

Responsible party involvement

Potentially Responsible Parties (PRPs) can be involved in the restoration planning process, particularly if the preferred restoration actions will be occurring on land owned by the PRPs. In this case, the preferred restoration actions being proposed will not be occurring on PRP land and, although a representative of the PRP attended the public meeting related to the Draft Restoration Plan, the PRPs have not otherwise been involved in the restoration planning process.

Administrative record

The Trustees have established an Administrative Record in compliance with Federal regulatory requirements for natural resource damage assessments. The Administrative Record includes information and documents prepared by and/or relied upon by the Trustees throughout the development and implementation of the settlement. These records are available for review by interested parties. They may be viewed or downloaded from https://www.mass.gov/service-details/more-nrd-settlements-massdep (accessed March 2018).

Alternatively, interested persons can access or view these records at the offices of Karen Pelto:

Karen Pelto
MassDEP NRD Program
One Winter Street, 6th Floor
Boston, MA 02108
(617) 292-5785
Karen.Pelto@state. ma.us

Arrangements must be made in advance to review or to obtain copies of these records by contacting Ms. Pelto. Access to and copying of these records is subject to all applicable laws and policies including, but not limited to, laws and policies relating to copying fees and the reproduction or use of any material that is copyrighted.

1.4 Criteria for Evaluating Restoration Projects

In accordance with the requirements of the Superfund Law (42 U.S.C. 9601 et seq.), and the criteria and guidance provided in the DOI NRD regulations (43 CFR 11.82), the Trustee Council established both ***eligibility criteria*** that projects needed to meet in order to be considered for funding, and ***evaluation criteria***, which allowed the Trustee Council to prioritize eligible projects through a qualitative assessment of their value and feasibility. These criteria were shared with the Trustee Council's e-mail contact list of approximately 40 interested community members and stakeholder groups.

The DOI NRD regulations identify the following factors to be considered in the evaluation and selection of preferred alternatives (43 CFR 11.82):

- technical feasibility;

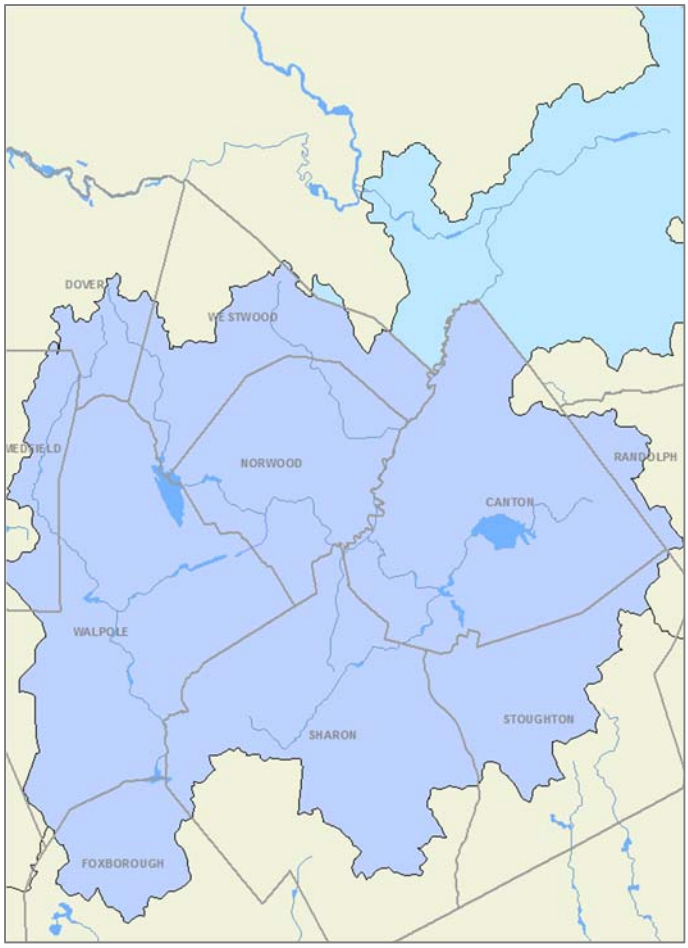
- the relationship of the expected costs of the proposed actions to the expected benefits from the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources;
- cost-effectiveness;
- the results of any actual or planned response actions;
- potential for additional injury resulting from the proposed actions, including long-term and indirect impacts, to the injured resources or other resources;
- the natural recovery period;
- ability of the resources to recover with or without alternative actions;
- potential effects of the action on human health and safety;
- consistency with relevant Federal, State, and Tribal policies; and
- compliance with applicable Federal, State, and Tribal laws.

The Trustee Council incorporated the 10 factors described above into its eligibility and evaluation criteria. The Trustee Council is solely responsible for determining whether proposed restoration project ideas meet these criteria.

To be eligible for funding, the B&U Site Trustee Council determined that restoration projects must:

- be located in the Upper Neponset River watershed (defined below);
- restore, replace or acquire the equivalent of the natural resources that were injured (river/stream habitats, wetland habitats and groundwater);
- be located close to the B&U Site;
- achieve the greatest possible ecological benefit for the cost; and
- not interfere with or be negatively affected by remedial activities occurring in and around the B&U Site.

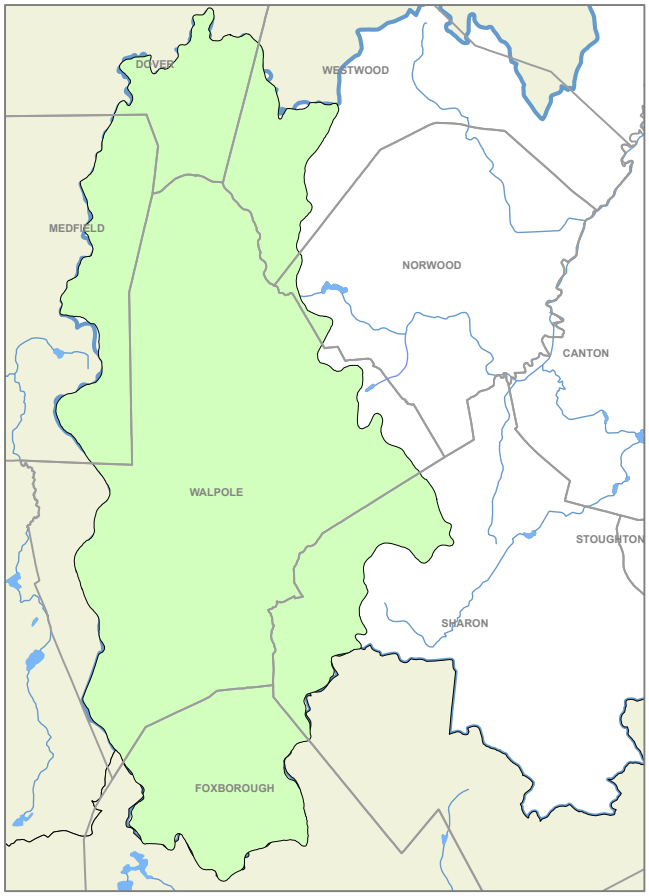
The Upper Neponset River watershed was defined by the Trustee Council as that portion of the Neponset River watershed that lies within the boundaries of Foxborough, Sharon, Dover, Walpole, Medfield, Stoughton, Randolph, Canton, Norwood, and Westwood. However, if a project lay outside of the Upper Neponset River watershed as defined, but would benefit the natural resources of the Upper Neponset River watershed, it could also be considered.



Map of the Upper Neponset River watershed, as defined by the Natural Resource Trustees.

To be considered, groundwater restoration projects had to demonstrate a benefit to the Head of the Neponset Sole Source Aquifer and be located in towns connected to the aquifer: Walpole, Dover, Foxborough, Medfield, Norwood, Sharon, and Westwood. Additionally, groundwater restoration projects had to meet one or more of the following objectives:

- Protect the quality of current and potential drinking water supplies by protecting aquifers, recharge areas, and watersheds, including environmentally sensitive lands and critical habitats.
- Protect the quantity of current and potential drinking water supplies by implementing measures to conserve water, reduce losses of clean water from aquifers, and provide quality recharge to aquifers, including offsets that also mitigate impacts to water-dependent ecosystems.
- Integrate planning and management of current and potential drinking water source areas and wastewater treatment, with an emphasis on the efficient use of land, energy, and water and regional or multi-community benefits.



Map of the Neponset Sole Source Aquifer, as defined by the Commonwealth.

Under the DOI NRD Regulations (43 CFR 11.82), the Trustees are required to evaluate restoration project alternatives based upon ***all relevant considerations***, including, but not limited to, the 10 factors listed on pages 9 and 10. Ecological and groundwater restoration project ideas that met the eligibility criteria were evaluated further by the Trustees based upon the 10 DOI criteria, as well as upon a suite of further-refined evaluation criteria developed by the Trustee Council:

- physical proximity to B&U Site;
- connection between resources being restored and those that were injured;
- project feasibility;
- cost effectiveness;
- ability to leverage other funds;
- likelihood of being implemented and succeeding;
- magnitude of benefits to ecological and groundwater resources;
- potential to cause additional injury to natural resources;
- potential effects on human health and safety; and
- potential to be affected by any planned remedial work.

1.5 Restoration Project Ideas Received

The Trustees considered a wide range of restoration project ideas during the scoping/project exploration phase of the restoration planning process, which ran from June 2016 until July 2017. The Trustees solicited restoration project ideas from the public that addressed both ecological and groundwater resource injuries. The list of project ideas received and considered included:

- land acquisition (protect, restore and conserve land –numerous potential locations were suggested throughout Walpole and the Upper Neponset River watershed)
- restoring hydrology in the Sharon Atlantic White Cedar Swamp
- restoring hydrology in the Walpole Atlantic White Cedar Swamp
- pond dredging (Memorial Pond, Cobbs Pond, Post Office Pond, Clarks Pond, Lewis Pond)
- enhancing nearshore wetland habitat in conjunction with Memorial Pond dredging project
- dam removal (many potential sites have been suggested, including Mill Pond Dam, White Bridge Dam, Blackburn Dam, Stetson Dam, Plimpton Dam, Pinnacle Dam, Upper Turner's Pond Dam, South Walpole Dam, Cobbs Pond Dam, Gannawatte Farm Pond Dam, Bird Pond Dam, Pine Tree Brook Dam, Diamond Pond Dam)
- stormwater system retrofits (e.g., bioretention swales)
- implementing a water conservation program (for example, rebates for installation of low flow toilets and showerheads, lower-use irrigation systems, etc.)
- fish ladders and other fishways
- recreational trails (canoe or walking/hiking)
- invasive plant species removal
- native tree plantings near new sewage treatment plant; other native plantings in other locations
- timber thinning in the Town forest
- recreational bridge replacement in the Town forest
- daylighting the Neponset River on the B&U Site (the River currently runs through a culvert)
- interpretive signage about natural resources
- environmental education programs involving local schools; citizen science programs
- river cleanups
- replacing undersized/oversized/ perched culverts

A subset of restoration projects that the Trustee Council found best met the evaluation criteria was then explored in greater detail. Trustee representatives conducted site visits of these potential restoration projects, reviewed existing information about these potential projects, sought the professional opinions of outside experts and also spoke at length with project proponents.

Projects explored in depth
Culvert retrofits/replacements, stormwater best management practices (BMPs) and riparian plantings in the Traphole Brook watershed
Restoring hydrology in the Sharon Cedar Swamp
Implementing stormwater BMPs in Upper Neponset River Watershed

Projects explored in depth
Developing a water conservation program in the Upper Neponset River Watershed
Daylighting the Neponset River on the B&U Site
Land acquisition in Traphole Brook watershed
Restoring hydrology in the Walpole Cedar Swamp
Enhancing wetland habitat around Memorial Pond, Walpole

2. JOINT SETTLEMENT – PROPOSED RESTORATION ALTERNATIVES

As stated previously, EEA and the Service jointly received a $700,000 settlement to put toward the restoration of natural resources injured by the B&U Site. Of that settlement, $575,000 must be used to restore ecological resources (primarily river/stream, wetland and riparian habitat) and $125,000 must be used for projects that restore both ecological and groundwater resources.

After taking into account key evaluation criteria (section 1.4) such as technical feasibility, likelihood of success, cost effectiveness, ability to leverage additional funds, and proximity to the B&U Site, the Trustee Council determined that it would explore and analyze in detail three alternatives for the joint settlement:

Alternative 1	**Tier 1: Traphole Brook Watershed Restoration Initiative** **Tier 1: Memorial Pond Wetland Restoration & Enhancement** **Tier 2: Sharon Great Cedar Swamp Hydrologic Modeling** **Tier 2: Land Conservation**
Alternative 2	**Daylighting the Neponset River on the B&U Site**
Alternative 3	**No Action – do not implement restoration projects**

2.1 Alternative 1 – Tier 1 and 2 Restoration Projects

This alternative proposes to implement a suite of natural resource restoration projects in the Upper Neponset River watershed. There are two tiers of projects within this alternative. The Tier 1 projects are the highest priority for the Trustees. The Tier 2 projects are also priorities, but may only be fully or partially implemented should funds be available after Tier 1 projects are completed or should Tier 1 projects become infeasible for unexpected reasons. Each project, along with an explanation of its inclusion in the plan and tier ranking, is described in detail below. Under Alternative 1, should any funds remain once Tier 1 projects are implemented, the Trustees will use remaining funds to support Tier 2 projects. Any unused administrative and oversight funds will be used to provide additional support to Tier 1 projects or Tier 2 projects, if Tier 1 projects do not have any additional needs.

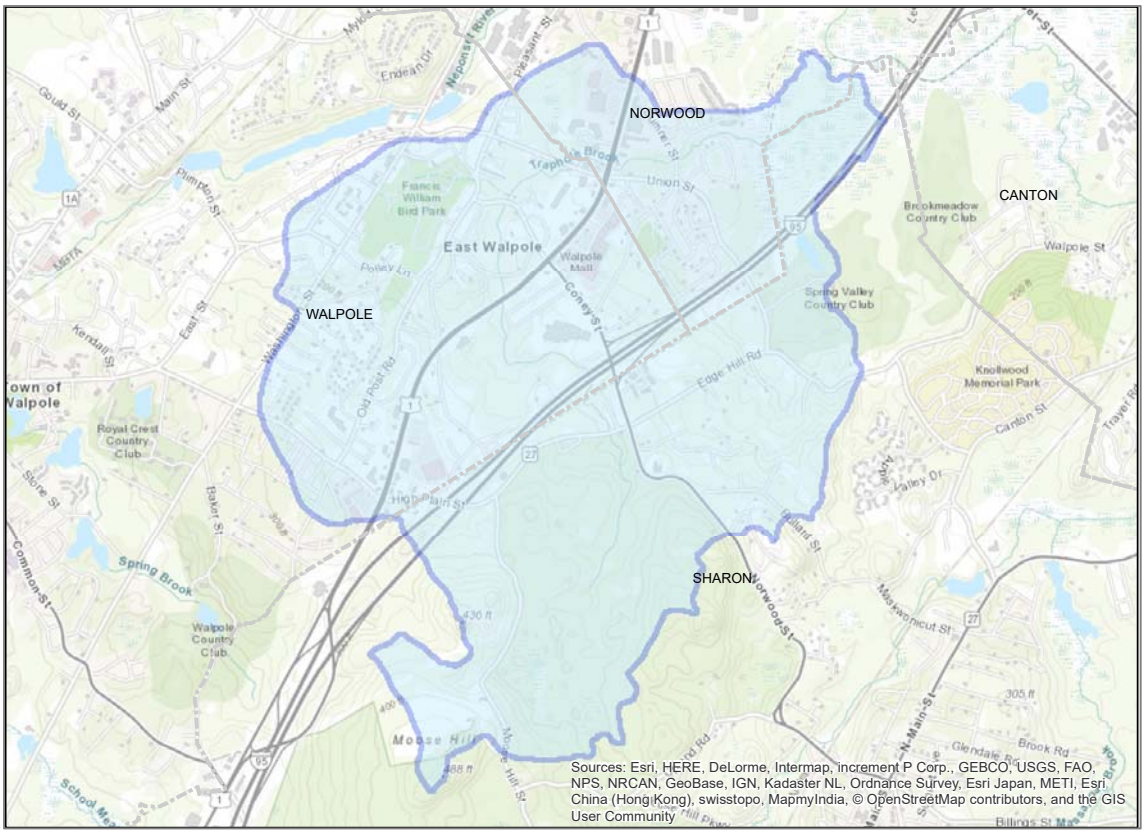
Tier 1 Projects	Trustee Contribution
Traphole Brook Watershed Restoration Initiative	Up to $450,000
Memorial Pond Wetland Restoration	$126,775
	Total: $576,775

2.1.1 Tier 1: Traphole Brook Watershed Restoration Initiative

Given that a significant portion of the natural resource injury was caused by the culverting of the Neponset River as a remedial action on the B&U Site, the Trustees have prioritized restoring stream and river habitat in the Neponset River watershed. The Trustees propose to use up to $450,000 of the settlement to work with the towns of Walpole, Sharon and Norwood, the Neponset River Watershed Association (NepRWA), and the Massachusetts Division of Ecological Restoration, to launch a watershed-scale restoration initiative in the Traphole Brook watershed, focused on restoring and improving aquatic and riparian habitat throughout the watershed.

Traphole Brook is approximately 4.5 miles in length and its drainage area is approximately 4.5 square miles. Its headwaters are in the Moose Hill Audubon Sanctuary in Sharon, and it flows through Sharon and East Walpole until its confluence with the Neponset River in Norwood, at the southern end of Fowl Meadow, just upstream of where the Neponset River flows under I-95. The brook is a cold-water fishery – rare in this part of the State – that supports Eastern brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*). A significant portion of the Traphole Brook watershed is classified as a Natural Heritage and Endangered Species Program (NHESP) Priority Habitat. A portion of Traphole Brook also lies within the Fowl Meadow and Ponkapoag Bog Area of Critical Environmental Concern (ACEC). Furthermore, Traphole Brook is unusual within the Neponset Watershed in that there are no regulated water withdrawals from or

wastewater discharges into the brook. Because Traphole Brook is one of the few streams connected to the Neponset Sole Source Aquifer that does not have water withdrawals, restoring, enhancing and ensuring the long-term health of this stream and its watershed will benefit groundwater resources as well as ecological resources.



Traphole Brook Watershed (USGS StreamStats, https://water.usgs.gov/osw/streamstats/, accessed March 2018).

Traphole Brook currently supports a healthy benthic macroinvertebrate population and trout are commonly found in the Brook. However, several ecological stressors in the watershed negatively affect its health:

- Several **fish passage barriers**, including at least two road crossings and a dam, restrict the movement of fish and other organisms along the mainstem of Traphole Brook. Migratory fish like Eastern brook trout utilize upstream and downstream habitats during different times of the year and during different points in their life cycles. Eliminating barriers along Traphole Brook would allow species like Eastern brook trout to have greater access to food sources, spawning sites and refuge from heat and predators. This would give trout in the stream greater opportunity to live longer, grow bigger and successfully reproduce.

- **Stormwater runoff** from roads negatively affects water quality in Traphole Brook by sending high volumes of water contaminated with roadway pollutants into the stream when it rains. Efforts to slow and filter pollutants out of stormwater that flows into the

stream would reduce streambank erosion as well as the concentration of pollutants entering the stream. This would benefit the entire food chain, from the benthic macroinvertebrates up to fish, birds and mammals.

- Several streambank locations along Traphole Brook have **insufficient riparian (streambank) vegetation**. Forested stream buffers that shade streams are important to prevent streambank erosion and ensure that water temperatures stay cool enough to support trout and other fish during warmer months.

Preliminary cost estimates for restoration work to address these impacts indicate that one or more restoration projects in Traphole Brook could be implemented with the settlement funds available. Moreover, there are several potential additional sources of funding that could be combined with the B&U Site settlement funds to accomplish restoration goals, including the Massachusetts Division of Ecological Restoration's Culvert Replacement Municipal Assistance Grant Program, the Massachusetts Dam and Seawall Repair or Removal Program, and the MassDEP section 319 Nonpoint Source Grant Program.

MassDEP, NepRWA and the Boston Chapter of Trout Unlimited are interested in partnering on restoration projects in this high priority watershed. The Massachusetts Division of Ecological Restoration (MassDER) has expressed interest in providing technical assistance on this watershed-scale effort.

There is a unique opportunity in the Traphole Brook watershed to leverage additional funding to achieve more than what could be accomplished with settlement dollars alone. By working with partners to combine financial resources, a watershed-scale approach to restoration could result in significant ecological benefits.

The Trustees have identified a suite of potential restoration projects in the Traphole Brook watershed (below) and propose to fund these projects based upon the following approximate allocation:

Project Type	Trustee Contribution
Fish Passage Barrier Removal Projects	~ $325,000
Stormwater Best Management Practices	~$75,000
Floodplain and Riparian Habitat Restoration & Conservation	~$50,000
	Total: $450,000

The goal of this effort is to accomplish as many of these projects as possible by leveraging settlement funds to bring in additional funding to the Traphole Brook watershed. To maximize flexibility and achieve the greatest amount of restoration possible by opportunistically pursuing projects when landowners are interested and additional sources of funding are available, the Trustees reserve the right to shift funds between the three categories of projects as they deem appropriate.

Fish Passage Barrier Removal and Retrofit Projects on Traphole Brook

Highest priority for the Trustees is to address barriers to fish passage in the Traphole Brook watershed. The Trustees identified several barriers to fish passage in Traphole Brook that could be addressed as part of this watershed-scale restoration initiative including an undersized culvert, a weir structure, and a dam; and it is anticipated that other barriers could exist in tributaries to Traphole Brook. The Trustees will work with the Neponset River Watershed Association, municipalities, private landowners and the Massachusetts Divisions of Ecological Restoration and Fisheries and Wildlife to implement one or more fish passage barrier removal projects in the Traphole Brook watershed. Restoration options will be prioritized based on the benefits that they provide to the trout fishery in Traphole Brook. Implementation will involve leveraging the natural resource damage settlement funds with other funding sources as mentioned previously.

Since the publication of the Draft Restoration Plan, the Neponset River Watershed Association has been actively exploring potential fish barrier removal projects in the watershed and has identified two projects on the main stem of Traphole Brook that have preliminary landowner support: a weir retrofit/removal project in Walpole and a dam removal project in Norwood.

In Walpole, there is a curved, raised concrete weir (~2-foot sill) located just upstream of the large, double box culvert that runs under Route 1. This weir was installed presumably to prevent woody debris from flowing into and lodging in the culvert. Fish can pass downstream through the weir but are unable to get back upstream due to the sill. Thus, while the culvert in this location is appropriately sized to allow fish to pass, the weir prevents passage.

The structure is owned and managed by the Massachusetts Department of Transportation and the agency has provided a letter of support to the Neponset River Watershed Association stating it is willing to explore alternatives for improving fish passage at this location. The Neponset River Watershed Association has submitted an application to the Massachusetts Division of Ecological Restoration (DER) to have this project added to its list of Priority Projects.

Weir structure located upstream of Rte. 1 road crossing over Traphole Brook in Walpole.

The second structure is an earthen dam on the downstream end of Traphole Brook, located near the Walpole/Norwood town line, off Mill Pond Lane in Norwood. This is the only known dam on Traphole Brook. It is an earthen dam that is approximately 100 feet long with a stone spillway located on river right (looking downstream, spillway is on the right side of the brook). Over the years, the dam has become compromised and is eroding. As a result, a new spillway has formed on river left, where the dam used to meet the left riverbank. The new spillway has eroded out new channels and aggravated streambank erosion problems downstream of the dam. In addition to preventing fish from moving upstream, the erosion caused by the dam is degrading stream habitat and causing problems for adjacent landowners.

The impoundment (pond) formed by the dam has slowly filled in over time. The once high recreational value of the pond has diminished because the pond has become filled with sediment and is for the most part too shallow for boating. Furthermore, increased sediment reduces the pond's capacity to hold water during big storm events, increasing the risk of flooding to adjacent landowners.

Water temperature data collected by the Neponset River Watershed Association upstream and downstream of Mill Pond indicate that temperatures downstream of the dam in summer 2017 exceeded the Massachusetts surface water standards for coldwater fishery streams, while temperatures collected upstream of the pond did not. This indicates that the pond is heating up the water in the stream, making it less suitable for coldwater species like Eastern brook trout.

Eastern brook trout have been observed upstream and downstream of the dam. Thus removing the dam would allow the downstream population to move further up into the watershed and would also remove the artificial heating effect caused by the pond.

Removing the dam would involve breaching a portion of the earthen dam and potentially recreating the Traphole Brook channel through what is now the pond bottom. A seedbank still exists within the pond sediments. Once drained, what was the pond bottom will revegetate and form the new banks and floodplain of Traphole Brook. The dam is easily accessible from

Sumner St. in Norwood via a sewer easement that runs through the Sumner Street Conservation Land, owned by the Town of Norwood. A restored stream in this area would provide habitat for macroinvertebrates and a host of other terrestrial and aquatic organisms – including trout – that the current, heated and sediment-filled pond does not support.

The Neponset River Watershed Association has received letters of support from the dam owners (Town of Norwood and private landowners) to pursue dam removal and has submitted an application to MassDER to have this project added to MassDER's list of Priority Projects. If MassDER accepts Mill Pond Dam as a priority project, MassDER could manage funding for design, permitting, and/or construction while the Neponset River Watershed Association or could manage funding for planning and outreach.

Another culvert that could be addressed is the culvert at the High Plain Street (Route 27, a town accepted road) crossing over Traphole Brook in Sharon, which appears to be undersized relative to bankfull width of the Brook (see photograph below). The culvert headwall on the upstream side has shifted away from the road embankment and is tilting downward toward the stream. Fish have trouble traveling upstream through undersized culverts such as the one under Route 27, because the culverts constrict flow and, as a result, cause water velocities to increase in the culvert, especially during periods of high flows.

Rte. 27 culvert in Sharon.

To support these and other fish passage barrier removal projects, the Trustees will provide project funding to the Neponset River Watershed Association, local municipalities and/or the Massachusetts DER, depending upon which group is spearheading individual projects.

Stormwater Best Management Practices

Stormwater runoff from impervious surfaces such as roads and parking lots carries a wide array of pollutants, including petroleum products and sediment, into Traphole Brook. Additionally, stormwater runoff from roads causes streambank erosion, which in turn increases turbidity in the stream. There are approximately nine road crossings over the Traphole Brook main stem and

several of them could benefit from the installation of stormwater retrofits that would help to slow and filter stormwater runoff before it enters Traphole Brook. There is also a substantial amount of paved, impervious surfaces in the watershed that could benefit from improved stormwater management.

The installation of stormwater control systems (frequently referred to as stormwater BMPs) would both protect and improve water quality in Traphole Brook. Stormwater BMPs can include installation of:

- retention ponds that slow and filter stormwater as it runs off roads;
- porous pavement in parking lots that allows stormwater to infiltrate rather than run off; and/or
- bioswales or raingardens, which are similar to mini-wetlands and are installed adjacent to parking lots and along roadways to retain and allow infiltration of stormwater into the ground.

Specific BMPs are chosen based upon the nature and constraints of each location. Within the Traphole Brook watershed, the area with the greatest amount of impervious surface is the Route 1 shopping area in Walpole and Norwood. Implementation of stormwater BMPs in this area could greatly benefit water quality downstream in Traphole Brook. Streambank erosion along with odorous water were observed by the Trustees in Traphole Brook directly downstream of Route 1 in 2017. These are typical indicators of stormwater runoff impacts.

Notably, Eastern brook trout were observed in Traphole Brook during the summer of 2017 downstream of the Route 1 road crossing and shopping area, therefore any efforts to improve water quality in this stretch of the stream would directly benefit the Eastern brook trout population. Broadly speaking, reducing the amount of pollutants entering and erosion occurring in Traphole Brook will benefit the entire food chain supported by the stream, from benthic macroinvertebrates, to fish, to birds and mammals.

NepRWA has already received an EPA section 319 grant from MassDEP to work with local municipalities implementing stormwater BMPs in Walpole. Thus NepRWA is well-positioned to lead the effort to identify and work with municipalities to implement stormwater BMPs specifically in the Traphole Brook watershed. The Trustees will provide NepRWA with approximately $75,000 toward funding stormwater BMP work in the Traphole Brook watershed, with the idea that, over the next two to five years, NepRWA would work with municipalities and other partners to identify projects and apply for matching funds from the 319 grant program or other appropriate sources of funding. Should the NRD settlement funds proposed for stormwater management not be fully utilized for stormwater projects, remaining funds can be directed toward fish passage or floodplain/riparian habitat restoration projects.

Floodplain and Riparian Habitat Restoration and Conservation

While the streambanks and floodplain along Traphole Brook are forested in many areas, several locations along the stream have been identified where the banks are mowed or otherwise unforested. Forested streambanks and floodplains protect water quality by allowing for better

infiltration of water during rain events. The strong roots of trees and shrubs stabilize the banks and can help to prevent excessive bank erosion and collapse. Streambank vegetation also provides habitat and cover for wildlife and the shade can lower water temperature.

The Trustees propose to provide NepRWA with approximately $50,000 to implement a two to three-year stream buffer restoration effort along Traphole Brook. This project will involve NepRWA staff working in partnership with the Greater Boston Chapter of Trout Unlimited to survey streambank habitat along Traphole Brook and initiate an outreach program with landowners along Traphole Brook to inform them about the importance of planting woody vegetation on streambanks and floodplains. NepRWA and Trout Unlimited would work with interested landowners to purchase and install plant materials and to replant stream buffers on their land. Should the Mill Pond Dam Removal move forward, the streambanks downstream and upstream of the dam might be ideal locations for riparian plantings, depending upon landowner interest.

Participating landowners will be required to maintain the vegetation (and not remove it) through a conservation easement held by a local municipality or NepRWA. Landowner commitment could also be demonstrated by a long-term (five- to ten-year) agreement with a state or federal agency. Funds allocated to the floodplain and riparian habitat restoration effort can be used by NepRWA to provide project management and oversight; conduct analyses of the existing riparian buffers; conduct outreach with landowners; purchase and install plant materials; and work with partners to develop and implement conservation restrictions to ensure the long-term protection of re-planted areas. If landowner interest in this effort does not fully materialize, any remaining funds can be put toward fish passage or stormwater projects.

2.1.2 Tier 1: Memorial Pond Wetland Restoration & Enhancement

The Trustees propose to provide up to $126,775 of the settlement to the Town of Walpole to implement a 0.76-acre near shore wetland habitat restoration and enhancement project around Memorial Pond. Memorial Pond is located one-half mile from the B&U Site on a tributary of the Neponset River (Spring Brook). The pond was formed due to the construction of a dam at its outlet. It has filled in with sediment and a monoculture of cattails over time. While the partially filled-in pond provides wetland habitat as is, the quality of this habitat, especially given the lack of diversity in vegetation, is not high.

The Town of Walpole has committed $1,021,210 toward dredging the Pond. The Trustees propose to fund the construction of near shore wetland habitat at two locations around the Pond (totaling 0.76 acre). As part of this project, invasive plant species in the area would be removed; shallow water wetlands would be built using fill from the pond; and the area restored would be planted with native vegetation, including water plantain, bulrush, blue iris, sweet flag and pickerelweed. A conceptual design for the project has been developed.

Removal of the Memorial Pond dam and restoration of the stream channel in Spring Brook in this location is infeasible and cost prohibitive due to the complexity of the road infrastructure (School Street) at the pond outlet. Additionally, as the pond has filled in, the quality of the wetland habitat has diminished. Cattails and invasive plants now dominate. Thus, enhancing

and restoring native wetland habitat around the Pond will improve the quality of wetland habitat that is available for fish and wildlife.

The Trustees propose to partner with the Town of Walpole and fund the native wetland habitat restoration aspects of the project. The Trustees' funds will be used for: 1) remaining engineering and design work; 2) permitting costs; 3) wetland construction and plantings; and 4) installation of interpretive signage along the trail that circles the pond. The contractor implementing the project has committed to monitor and maintain the plant material for two years. The Town is committed to maintain the native plant community established by this restoration project and control invasive plants.

Cost Estimate for Memorial Pond Wetland Restoration & Enhancement	
Mobilization/Demobilization and Erosion Control	**$ 7,500**
Earthwork	**$ 24,000**
Landscape Installation	**$ 43,820**
Engineering, oversight & permitting	**$ 27,000**
Contingency (25%)	**$ 21,455**
Interpretive signage	**$ 3,000**
Total:	**$126,775**

2.1.3 Tier 2: Sharon Great Cedar Swamp Hydrologic Modeling

Should funds be available after the implementation of the Tier 1 projects, the Trustees propose to provide $25,000 to the Town of Sharon to enable its Conservation Commission to develop a hydrologic model for the Sharon Great Cedar Swamp. The purpose of this model would be to determine the degree to which water in a large ditch bisecting the Swamp could be controlled to raise the groundwater table in the swamp and restore wetland hydrology and ecosystem functions.

The Sharon Great Cedar Swamp is a 250-acre Atlantic white cedar wetland located in Sharon. The swamp is a globally rare plant community and supplies high quality groundwater recharge that contributes to six municipal wells in Sharon. In its pristine state, a cedar swamp functions to purify the groundwater with no artificial intervention. The aquifer beneath the wetland feeds Lake Massapoag, which provides a wealth of recreation for its residents and excellent habitat for fish. A healthy forested wetland reduces drought in times of low rainfall; stormwater percolates slowly through the thick complex of organic-rich sediments, moderating damaging floods for the entire region.

In the late 1950s, a residential subdivision, the Heights, was built on the western border of Sharon Great Cedar Swamp. The homes in this subdivision soon experienced localized flooding during storms: which resulted in flooded basements, flooded streets, and poorly functioning septic systems. To eliminate excess water from the residential area, the Town authorized construction of a drainage ditch that extends about 1.25 miles through the western portion of the

swamp. At its start, the ditch is about 2 feet deep by 8 feet wide. Where it exits the swamp, the ditch is currently about 10 feet deep and 30 feet wide at the top of the bank.

This ditch effectively drained a large area of the western portion of the swamp and caused a significant drop in the groundwater table. Valuable water that previously percolated down into and was stored in the aquifer now runs off the land via the ditch. Additionally, lowering of the groundwater table has had major detrimental effects on the wetland ecosystem in the Sharon Great Cedar Swamp. Extensive areas of formerly thick black organic sediments are now dry. Rather than accumulating and sequestering organic matter to form peat, the now unsaturated organic matter decomposes and volatilizes at an accelerated rate. As a result, ground surface in the swamp has subsided by several feet in much of the western portion of the swamp and many cedars have died.

A dedicated technical team of community members and scientists has been diligently gathering data on the groundwater table elevations around the ditch. They have established multiple groundwater monitoring transects along the ditch and have experimented with installing a small rock check-dam in the ditch to try and minimally raise the groundwater elevation. Thus far, the small rock check-dam has not been effective in raising the groundwater table, indicating that a more significant water control structure or series of structures may be required.

Establishing and monitoring some additional groundwater elevation cross-sections, along with developing a hydrologic model, would assist the Town of Sharon in determining:

- how much they can raise the groundwater table in and around the ditch without impacting the adjacent neighborhood;
- how many water-control structures will be needed and at what locations along the ditch; and
- how many acres of wetland they can expect to restore under these new conditions.

Because implementing a wetland restoration project of this nature will require modification of current flood patterns, permitting agencies will require a hydrologic model that supports the proposed project design. Thus, completion of this hydrologic model is crucial to informing future design, engineering and permitting for this project. There are a variety of state grant programs that fund wetland restoration, habitat restoration and groundwater restoration projects for which this project could be competitive once this hydrologic model provides the information necessary to understand the scale and scope of water control structures needed.

2.1.4 Tier 2: Land Conservation

Should Tier 1 projects become infeasible or should funds be left over after the implementation of the Tier 1 projects, the Trustees propose remaining funds could also be used to support land conservation efforts in the Upper Neponset River Watershed, with a focus on the Traphole Brook Watershed, if land conservation opportunities exist there. In this situation, the Trustees would work with local municipalities and non-governmental organizations to acquire conservation land and/or increase land protection through conservation restrictions and other land protection tools.

2.2 Alternative 2 – Daylighting the Neponset River

Under this alternative, the Trustees would expend approximately $650,000 of the joint ecological and groundwater settlement into a solitary project to enhance potential remedial efforts that may be undertaken to daylight a 400-foot section of the Neponset River in Walpole on the B&U Site.

Approximately 400 feet of the Neponset River is currently culverted in an area that was capped to contain contaminated soil and sediments at the B&U Site. Recent inspections of the culvert indicate that it is beginning to fail and will need either to be repaired or removed. There is no set deadline for repair of the culvert. It is inspected regularly and if performance criteria (heading towards culvert failure) are exceeded, long-term repairs will be implemented. Until then, short-term repairs (e.g., pin-hole patching) are being implemented to maintain the culvert.

While natural resource damage settlement funds cannot be used to support remedial activities, they can be used to support restoration of natural resources on the B&U Site beyond what is required for remediation. Currently, the RPs for the B&U Site are required under the remedial plan to maintain this culvert. The Trustees could contribute funding above and beyond the cost of maintaining the culvert to support and encourage its removal and the daylighting of the river.

Installation of culvert on the Neponset River in 1992 (Photo: EPA).

A recent study of the culvert conducted by a consultant for the RPs indicates that repairing the culvert by installing a new liner would cost in the range of $1.7 to $2.3 million. The estimated cost of removing the culvert entirely and daylighting the Neponset River is $4.2 million. While the report does not provide a detailed breakdown of the culvert removal cost estimate and the Trustees assume that it is preliminary, the high cost of removing the culvert appears to be related to the fact that the culvert is currently integral to the cap installed to encapsulate contaminated sediment. If the culvert were to be removed, soil and sediment would have to be regraded, recapped, and potentially removed. Additionally, due to concerns about the contaminated

sediment in the area, turbidity must be avoided during the river restoration process. The river would not only need to be re-routed (i.e., pumped) around the B&U Site during the process of removing the culvert and recreating the river channel, the river would also have to be re-routed until vegetation was established on the newly graded riverbanks to avoid erosion. Water control to prevent turbidity is frequently a necessary and costly requirement of river channel restoration processes, but usually is only required during periods of active construction. In this situation, water control operations would need to continue for an extended period of time while the new riverbanks revegetate, thus increasing the cost of the project.

2.3 Alternative 3 – No Action

NEPA requires the Trustees to consider a "no action" alternative when proposing restoration projects. Under the no action alternative, the Trustees would undertake no restoration projects to help the injured resources to recover and the settlement funds would remain unused in perpetuity.

2.4 Evaluation of Restoration Alternatives

The Trustees have selected Alternative 1 as their preferred alternative. Alternative 1 includes a suite of projects that restore both stream and wetland habitat, thus demonstrating a strong nexus to the injured natural resources. These projects are cost effective, leverage additional funds in order to achieve greater ecological benefit, and are all in close proximity to the B&U Site.

In determining which of the preferred projects would be chosen as Tier 1 projects versus Tier 2, the Trustees came to several conclusions. First, the high ecological value of the Traphole Brook watershed, its small size and its relatively good health mean that a proportionally small investment in ecological restoration in this watershed could lead to a relatively high return in ecosystem improvements. In particular, the presence of Eastern brook trout in locations throughout the brook (down to Mill Pond) indicates that suitable instream habitat and temperatures already exist in at least several portions of the brook. This holistic, watershed-scale approach to restoration would improve water quality, increase shade and reduce water temperatures, and increase the ability of fish to move throughout the length of the stream to find food, find refuge and to reproduce. This in turn should strengthen and help sustain the Eastern brook trout population in this stream.

There are multiple interested partners and multiple additional funding sources for this project. Thus, in implementing this project, the Trustees have an opportunity to work with others to accomplish more projects – and create greater ecological benefits – than the Trustees could achieve on their own. Additionally, given the substantial injury that occurred to riverine habitat as a result of releases of hazardous substances from the B&U Site, the Trustees are of the opinion that it is important that a portion of the settlement should be used to conduct a stream or riverine habitat restoration project. All of these factors lead the Trustees to propose the Traphole Brook Watershed Restoration Initiative as a Tier 1 project.

The Trustees selected the Memorial Pond Wetland Enhancement and Restoration project as a Tier I project due to the proximity of this restoration project to the B&U Site; the significant

opportunity it presents for public outreach and recreation; the improved quality of wetland habitat it will provide; and the likelihood that the project will be successfully implemented. The extensive design and planning that has already been completed and the substantial investment that the Town of Walpole has made in the project provide strong assurances to the Trustees that this project will be successfully implemented in 2018.

The Tier 2 projects (Sharon Great Cedar Swamp hydrologic model and land conservation) are both important efforts. The Sharon Great Cedar Swamp hydrologic model could lead to a valuable and effective wetland restoration project in the swamp. However, given the length and depth of the ditch running through the swamp and the low elevation of the adjacent neighborhood, the Trustees are uncertain as to how many acres of wetland in the swamp could feasibly be restored and how many water control structures would need to be installed and maintained to achieve this restoration. Without understanding better the acreage that could potentially be restored and the cost of restoring that acreage, it is difficult for the Trustees to assess the project. Thus, the Trustees concluded that funding development of a hydrologic model to answer some of these key questions would be the best first step in moving this project forward. The uncertainty regarding the potential on-the-ground restoration outcomes lead the Trustees to rank this as a Tier 2 project. The cost of the hydrologic model is modest and the Trustees are committed to funding the Town of Sharon and/or NepRWA to develop this model should funds remain following implementation of the Tier 1 projects.

The second Tier 2 project, land conservation in the Upper Neponset River watershed, could avoid additional loss of wetland, floodplain and stream habitat by preventing development on land that contains or is adjacent to these habitats. Conserving land in groundwater recharge zones can help protect and replenish groundwater resources. Additionally, conserving land that otherwise would be developed in a watershed can help to reduce the overall quantity of stormwater runoff and thus help to improve or at least maintain surface-water quality, benefiting stream, floodplain and wetland habitats. However, given the high cost of land in the Upper Neponset River watershed, which is located just outside of Boston, the Trustees feel that conserving land in this area is not as cost effective a restoration tool as implementing restoration projects such as the Traphole Brook Watershed Restoration Initiative or the Memorial Pond Wetland Restoration and Enhancement projects. Thus, the Trustees have identified land conservation as a Tier 2 project, which they fully support should funds remain after the implementation of Tier 1 projects.

The Trustees have identified Alternative 2, daylighting the Neponset River on the B&U Site, as a non-preferred alternative. The Trustees believe that daylighting the river would improve the health of the Neponset River and the fish and wildlife that rely upon it. Culverting the river caused significant and permanent disruption and injury to the Neponset River which by preventing sunlight from reaching the water column, riverbed and streambanks resulting in an unnatural riverbed substrate and disconnects the river from its floodplain and groundwater sources. A portion of the Trustees' natural resource damages claim for the B&U Site was directly tied to this injury. Daylighting the river and, in essence, "undoing" a remedial action that is causing harm to the environment in perpetuity is a highly justifiable use for these funds.

However, there are several complicating factors related to this project that lead the Trustees to identify this project as a non-preferred alternative. First, preliminary cost estimates indicate that removing the culvert is so significantly more expensive than maintaining the culvert with a new liner that the project would be cost prohibitive to the Trustees. Second, the Trustees believe that the high cost of this project may outweigh the ecological benefit to natural resources provided. Greater and more significant benefit to ecological and groundwater resources in the Upper Neponset River watershed can be achieved by investing the settlement in the suite of preferred projects proposed, rather than putting these funds toward the singular effort of removing the culvert on the B&U Site.

The Trustees concluded that Alternative 3, the no action alternative, is a non-preferred alternative, primarily because the Trustees signed a Consent Decree agreeing to conduct natural resource restoration activities with the $1 million settlement. The Trustees would be in violation of the Consent Decree and the Superfund Law if the no action alternative were selected.

The Trustees' preferred restoration alternative, Alternative 1, is based on the criteria identified in the DOI NRD Regulations, including, but not limited to, cost effectiveness, expected benefits to ecological (stream, floodplain and wetland) and groundwater resources and technical feasibility of the proposed alternatives. The Trustees also took into consideration the proximity of the projects to the B&U Site, as the Town of Walpole and its natural resources were greatly impacted by the release of hazardous substances from the B&U Site.

Based upon this evaluation and public comments received, the Trustees will use the B&U Site natural resource damage settlement to implement Alternative 1, their preferred restoration alternative:

Tier 1: Traphole Brook Watershed Restoration Initiative

Tier 1: Memorial Pond Wetland Restoration and Enhancement

Tier 2: Sharon Great Cedar Swamp Hydrologic Study

Tier 2: Land Conservation

3. JOINT SETTLEMENT – ENVIRONMENTAL ASSESSMENT OF PROPOSED RESTORATION ALTERNATIVES

In addition to evaluating the proposed restoration alternatives within the context of the DOI NRD Regulations, the Trustees must also evaluate the proposed restoration alternatives under NEPA. NEPA requires that federal agencies consider the environmental effects of all of their actions. Environmental effects under NEPA include both beneficial and adverse effects to physical, biological, socioeconomic, cultural and historic resources. In the case of this Final Restoration

Plan, the Trustees are required to conduct an analysis under NEPA called an Environmental Assessment.

3.1 Purpose and Need

The purpose of the Final Restoration Plan is to restore, replace or acquire the equivalent of the natural resources injured due to the release of hazardous substances from the B&U Site in Walpole, Massachusetts.

The need for these proposed restoration projects is two-fold:

a. The Trustees are required under the Consent Decree to use these settlement funds to conduct restoration projects to compensate the public for injuries to natural resources caused by the release of hazardous substances from the B&U Site.

b. Stream, wetland and floodplain ecosystems in the Upper Neponset River watershed have been negatively impacted by a wide array of human alterations to the landscape and would benefit from restoration. These negative impacts include, but are not limited to:

- degraded water quality due to stormwater runoff; degraded water quality due to stream and river bank erosion;
- degraded water quality due to contamination to groundwater from septic systems;
- degraded water and sediment quality due to contamination from legacy hazardous substances;
- loss of water volume in waterways and aquifers due to water withdrawals;
- reduced access to stream habitat for fish and other migratory organisms due to artificial barriers in streams and rivers (e.g., undersized or perched culverts);
- loss of biodiversity due to the spread of non-native, invasive plants; and
- loss of forest, wetland and floodplain habitat due to residential and commercial development.

Thus, there is a real and pressing need to implement ecological and groundwater restoration projects in the Upper Neponset River watershed to reduce the stress on and improve the health of ecosystems in the watershed.

3.2 Affected Environment

The Neponset River watershed is located in the western portion of the Boston Harbor Watershed; it drains a watershed of 123 square miles. It originates in Foxborough at Neponset Reservoir, a manmade impoundment. The river, which is approximately 30 miles long, flows in a northeasterly direction and empties into Dorchester Bay (MassDEP 2004).

The Neponset River has a long industrial history predating the industrial revolution and was used to power textile, paper, and lumber mills, in manufacturing processes, and for the disposal of by-products and wastes (MassDEP 2004). As a results of these uses the river has 12 dams and passes through several mills and private reservoirs. Historically the industries along the river

discharged sewage and industrial wastewater. Today, industry/businesses along the have closed, connected to the sewer system, or installed waste treatment facilities (MassDEP 2004).

Currently, there are two designated Areas of Critical Environmental Concern (ACECs) in the Neponset River Sub-watershed: the Neponset River Estuary ACEC and the Fowl Meadow and Ponkapoag Bog ACEC. Under the authority of Massachusetts General Law Chapter 21A, section 2(7), the Commonwealth officially designated the Neponset River Estuary ACEC in Boston, Milton, and Quincy on March 27, 1995. The ACEC encompasses approximately 1,300 acres. Approximately 80 percent of the ACEC consists of floodplains and two-thirds of the ACEC is composed of open water, salt marsh, and other wetland resource areas. The Neponset River Estuary ACEC supports valuable anadromous fishery habitat, soft-shell clam beds, commercially and recreationally important finfish species, and numerous bird species. The Fowl Meadow and Ponkapoag Bog ACEC was officially designated on August 20, 1992, and encompasses approximately 8,350 acres in Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood. Several municipal public water supply wells within this ACEC provide water to Canton, Dedham, and Westwood. At least 13 State-listed rare species occur in the ACEC. The northern Fowl Meadow area and Ponkapoag Bog have been designated a National Environmental Study Area by the National Park Service. The Neponset River watershed lies within the range of the northern long-eared bat (*Myotis septentrionalis*), which is federally threatened with a 4(d) rule. However, there are no known occurrences of the northern long-eared bat or any known hibernacula in the Neponset River watershed.

Thus, while it is a highly developed urban and suburban watershed currently experiencing a multitude of ecological stressors, the Neponset River watershed has significant ecological, socioeconomic and cultural value.

3.3 Environmental Consequences of Restoration Alternatives

Under NEPA, environmental effects of proposed actions and projects are classified as direct or indirect, short-term or long-term, adverse or beneficial and significant or insignificant.

The Trustees' preferred restoration projects (Alternative 1), which include the creation of native wetland habitat, the replacement of road crossings over streams that improve fish passage, the revegetation of stream buffers, and the installation of bioengineered structures to reduce and improve the water quality of stormwater that runs off into waterways, are not expected to cause any significant adverse effects to physical, biological, socioeconomic, historic and/or cultural resources. Rather, these projects are all expected to have a long-term, beneficial effect on physical, biological and socioeconomic resources in the Upper Neponset River watershed. Alternative 2 (daylighting the Neponset River) would also have a beneficial effect on physical, biological and potentially socioeconomic resources. While these effects are expected to be beneficial, within the context of NEPA they are considered to be "insignificant" because, overall, the Neponset River watershed is heavily impacted. The reference to these beneficial effects as insignificant within the context of NEPA does not mean that these beneficial effects are not important.

Some insignificant, adverse, short-term, direct and indirect ecological effects are expected during the implementation of Alternative 1 (preferred) and Alternative 2 (non-preferred). Additional details about these are provided in Table 1. Alternative 3, the no action alternative, would have no beneficial effects on the environment and would have an adverse effect on physical and biological resources. Under this alternative, the negative impacts to ecological and groundwater resources caused by the release of hazardous substances from the B&U Site would not be countered by the positive effects of restoration projects in the vicinity of the B&U Site. The intent of natural resource damage settlements under the Superfund Law is to conduct restoration that compensates for the negative effects caused by the release of hazardous substances in the environment. Under the no action alternative, there would be no compensation for the adverse effect of the B&U Site on the Upper Neponset River watershed.

3.3.1 Effects on Physical Resources

The Trustees expect that the proposed restoration alternatives, with the exception of the no-action alternative, will have an overwhelmingly beneficial effect on physical resources. Alternative 1 (preferred) will result in improvements to both stream and wetland habitats. Alternative 2 would also restore and improve the river channel and instream habitat (Table 1). Alternative 3 (no action) would have an adverse effect on physical resources.

The Trustees expect several adverse effects to the physical environment (e.g., temporary decreases in water quality during construction activity) as a result of implementing either Alternative 1 (preferred) or Alternative 2 (Table 1). These adverse effects are expected to be short-term and insignificant.

3.3.2 Effects on Biological Resources

The Trustees expect that the proposed restoration alternatives, with the exception of the no-action alternative, will have an overwhelmingly beneficial effect on biological resources. Alternative 1 (preferred) will result in benefits to benthic macroinvertebrates, fish, birds and mammals that will utilize the restored stream and wetland habitats. Alternative 2 (daylighting the Neponset River on the B&U Site) would also benefit benthic macroinvertebrates, fish, bird and mammals species (Table 1).

The Trustees expect several adverse effects to biological resources as a result of implementing either Alternative 1 (preferred) or Alternative 2, such as temporary loss of vegetation during construction, some mortality of non-motile organisms. These adverse effects are expected to be short-term and insignificant (Table 1). Alternative 3 (no action) would have an adverse effect on biological resources.

While the federally threatened northern long-eared bat has not been documented in the Neponset River watershed as of the time of this publication, the watershed lies within the range of the bat. The northern long-eared bat can be adversely affected by clearing trees greater than three inches in diameter at breast height during certain times of the year. Because engineering and design work has not been completed for projects in Alternative 1 (preferred) or Alternative 2, it is uncertain if any tree clearing will be required for these projects. Should clearing of trees be

necessary, the Service will conduct an Intra-Service Section 7 consultation to determine whether any adverse effects to the bat could occur, and identify ways to avoid those effects (e.g., cutting trees at the time of year when bats are not present).

3.3.3 Effects on Historic and Cultural Resources

There are no anticipated adverse effects to historic and cultural resources related to the proposed restoration activities in Alternatives 1 or 2, with the potential exception of the Mill Pond Dam, should its removal be considered as part of the Traphole Brook Watershed Restoration Initiative. Given its apparent age, the Mill Pond Dam may be considered an historic resource under the National Historic Preservation Act (NHPA). Should this be the case and should this project be pursued, the Service would consult with the Massachusetts Historical Commission under section 106 of the NHPA to determine whether the project would cause a significant adverse effect to the resource. Depending upon the outcome of this consultation, the Service and its project partners might develop additional environmental compliance documents that would be supplemental to this environmental assessment. Alternative 3 (no action) would have no adverse or beneficial effects on historic and cultural resources.

3.3.4 Effects on Socioeconomic Resources

There are no significant adverse socioeconomic effects associated with Alternative 1 (preferred) or Alternative 2. Some short-term disruption of traffic and/or increase in noise may be associated with some of the projects that involve construction equipment, such as the Memorial Pond wetland restoration or the culvert replacement projects (Table 1). The Memorial Pond wetland project is one piece of a much larger pond dredging project and the additional noise and traffic disruption should be negligible relative to the overall scope and scale of the project. Alternative 3 (no action) would have no beneficial effects on socioeconomic resources and could potentially have an insignificant adverse effect on socioeconomic resources because, under this alternative, the Trustees would not be providing funding to local municipalities and non-governmental organizations located in the watershed to conduct restoration projects.

Table 1. Additional details on environmental consequences of proposed restoration alternatives 1 and 2.

Alternative 1(preferred) – Traphole Brook Watershed Restoration – FISH PASSAGE BARRIER REMOVAL					
Adverse/ Beneficial	**Effect**	**Affected Resources**	**Long/ short-term**	**Indirect/ Direct**	**Significant/ Insignificant**
Beneficial Effects	Migratory fish able to access more habitat, thus improving health of fish populations	Biological	Long	Direct	Insignificant – Removing passage barriers will allow migratory fish to move more freely through the Brook. There are so many barriers to fish passage in the Neponset River watershed, removing barriers in one stream is not expected to be significant within the context of NEPA.
	Increased mobility of other organisms (e.g., turtles) along stream corridor	Biological	Long	Direct	Insignificant – Streams are "roadways" for many organisms other than fish, including amphibians, reptiles and benthic macroinvertebrates. Removing barriers improves the ability of many organisms to move through watersheds and access important feeding, spawning and refuge habitats.
	Reduced flooding	Physical	Long	Direct	Insignificant – Many fish passage barriers cause water to back up and can exacerbate localized flooding during storm events; removing barriers or installing appropriately sized culverts frequently alleviates flood risk.
	More effective instream sediment transportation, leading to improved instream habitat	Physical	Long	Direct	Insignificant – Sediment (e.g., sand, gravel and boulders) is intended to move downstream through stream systems. This material helps to create the stream bottom that fish and other organisms require for food, shelter and reproduction. Undersized culverts and other barriers can stop this material from moving through stream systems.
Adverse Effects	Clearing of herbaceous and woody vegetation	Biological	Short	Direct	Insignificant – Areas either revegetate quickly or are replanted/reseeded with native vegetation.
	Increased turbidity in water during construction, leading to short-term reduction in water quality	Physical and Biological	Short	Direct	Insignificant –Temporary condition; State-mandated erosion control protocols will be followed to minimize turbidity and erosion. Construction will follow Clean Water Act permit requirements, thus minimizing impacts to water quality.

Alternative 1(preferred) – Traphole Brook Watershed Restoration – FISH PASSAGE BARRIER REMOVAL					
Adverse/ Beneficial	**Effect**	**Affected Resources**	**Long/ short-term**	**Indirect/ Direct**	**Significant/ Insignificant**
Adverse Effects	Traffic disruption due to construction equipment on roads near project sites	Socioeconomic	Short	Indirect	Insignificant –Temporary condition; measures will be taken to reduce congestion as much as possible; no significant effects to local businesses or residents are anticipated.
	Mortality of non-motile aquatic organisms	Biological	Short	Direct	Insignificant – Some aquatic organisms that are not able to move out of the way of construction equipment (e.g., freshwater mussels) may die during construction. Sizable populations of non-motile organisms, if found at project sites, are frequently relocated.
	Increased noise for neighbors and passersby	Socioeconomic	Short	Direct	Insignificant

Alternative 1 (preferred) – Traphole Brook Watershed Restoration – RIPARIAN RESTORATION					
Adverse/ Beneficial	**Effect**	**Affected Resources**	**Long/ short-term**	**Indirect/ Direct**	**Significant/ Insignificant**
Beneficial Effects	Improved quality of riparian and wetland habitat, in turn benefiting the fish and wildlife that rely upon these habitats	Biological, Physical	Long	Direct	Insignificant

Alternative 1 (preferred) – Traphole Brook Watershed Restoration –STORMWATER BMPs					
Adverse/ Beneficial	**Effect**	**Affected Resources**	**Long/ short-term**	**Indirect/ Direct**	**Significant/ Insignificant**
Beneficial Effects	Improved quality of riparian and wetland habitat	Biological, Physical	Long	Direct	Insignificant – Stormwater BMPs often involve the installation of native vegetation that benefits native fish and wildlife populations.
	Improved groundwater infiltration, leading to increasing aquifer recharge	Physical	Long	Direct	Insignificant – Stormwater BMPs frequently slow down the velocities of runoff, allowing for more of this water to sink down into the ground.
	Improved water quality in surface waters	Physical	Long	Direct	Insignificant – Stormwater BMPs help to remove pollutants from water, improving the quality of the stormwater that enters river and streams.
	Improved visual appeal of project sites	Socioeconomic	Long	Indirect	Insignificant – Installation of stormwater BMPs often involves the installation of native flowers and plants that improve the visual appeal of impervious surfaces, such as parking lots. Increased visual appeal could have an indirect effect on the desirability of an area.
Adverse Effects	Clearing of herbaceous and woody vegetation	Biological	Short	Direct	Insignificant – Areas either revegetate quickly or are replanted/reseeded with native vegetation.
	Increased turbidity in water during construction, leading to short-term reduction in water quality	Physical and Biological	Short	Direct	Insignificant –Temporary condition; State-mandated erosion control protocols will be followed to minimize turbidity and erosion. Construction will follow Clean Water Act permit requirements, thus minimizing impacts to water quality.
	Increased noise for neighbors and passersby	Socioeconomic	Short	Direct	Insignificant
	Mortality of non-motile aquatic organisms	Biological	Short	Direct	Insignificant – Some aquatic organisms that are not able to move out of the way of construction equipment (e.g., freshwater mussels) may die during construction. Sizable populations of non-motile organisms, if found at project sites, are frequently relocated.

Alternative 1 (preferred) – Memorial Pond Wetland Restoration & Enhancement					
Adverse/ Beneficial	**Effect**	**Affected Resources**	**Long/ short-term**	**Indirect/ Direct**	**Significant/ Insignificant**
Beneficial Effects	Improved quality of riparian and wetland habitat, in turn benefiting the fish and wildlife that rely upon these habitats	Biological, Physical	Long	Direct	Insignificant
	Water quality protection	Physical	Long	Direct	Insignificant – Wetlands are natural water filters and constructing wetland habitats as part of the Memorial Pond project will help to protect water quality in the Pond.
	Removal of non-native, invasive plant species	Biological	Long	Direct	Insignificant – Invasive plants, particularly large monocultures of invasive plants, reduce plant biodiversity, which in turn affects the quality of habitat and food sources available for wildlife.
Adverse Effects	Increased turbidity in water during construction, leading to reduction in water quality	Physical	Short	Direct	Insignificant –Temporary condition; State-mandated erosion control protocols will be followed to minimize turbidity and erosion on site. Construction will follow Clean Water Act permit requirements, thus minimizing impacts to water quality.
	Traffic disruption due to construction equipment on roads near project sites	Socioeconomic	Short	Indirect	Insignificant –Temporary condition; measures will be taken to reduce congestion as much as possible; no significant effects to local businesses or residents are anticipated.
	Clearing of herbaceous and woody vegetation	Biological	Short	Direct	Insignificant – Areas either revegetate quickly or are replanted/reseeded with native vegetation.
	Increased noise for neighbors and passersby	Socioeconomic	Short	Direct	Insignificant
	Mortality of non-motile aquatic organisms	Biological	Short	Direct	Insignificant – Some aquatic organisms that are not able to move out of the way of construction equipment (e.g., freshwater mussels) may die during construction. Sizable populations of non-motile organisms, if found at project sites, are frequently relocated.

Alternative 1 (preferred) – Sharon Great Cedar Swamp Hydrologic Model					
Adverse/ Beneficial	**Effect**	**Affected Resources**	**Long/ short-term**	**Indirect/ Direct**	**Significant/ Insignificant**
Beneficial Effects	Increased understanding of swamp hydrology that will improve likelihood of restoration	Physical	Long	Direct	Insignificant

Alternative 1 (preferred) – Land Conservation					
Adverse/ Beneficial	**Effect**	**Affected Resources**	**Long/ short-term**	**Indirect/ Direct**	**Significant/ Insignificant**
Beneficial Effects	Maintaining habitat for fish and wildlife by keeping land out of development	Biological, Physical	Long	Direct	Insignificant
	Protecting groundwater	Physical	Long	Direct	Insignificant
	Increasing public enjoyment of and connection to nature	Socioeconomic and cultural	Long	Direct	Insignificant
Adverse Effects	Preventing development of land that could potentially be developed and generate tax and other revenue	Socioeconomic	Long	Indirect	Insignificant – The area of land that could be purchased with the available funds is so small that no significant socioeconomic impact is expected due to lost tax revenue.

Alternative 2 – Daylighting the Neponset River					
Adverse/ Beneficial	**Effect**	**Affected Resources**	**Long/ short-term**	**Indirect/ Direct**	**Significant/ Insignificant**
Beneficial Effects	Migratory fish able to access more habitat, thus improving health of fish populations	Biological	Long	Direct	Insignificant – Daylighting the River will improve the ability of migratory fish to move freely through the watershed.
	More effective instream sediment transportation, leading to improved instream habitat	Physical	Long	Direct	Insignificant – Sediment (e.g., sand, gravel and boulders) is intended to move downstream through stream systems. This material helps to create the stream bottom that fish and other organisms require for food, shelter and reproduction. The river culvert interferes with the movement of larger material downstream.
	Improved instream habitat that can be utilized by more species	Physical	Long	Direct	Insignificant
	Increased mobility of other organisms (e.g., turtles) along stream corridor	Biological	Long	Direct	Insignificant – Streams are "roadways" for many organisms other than fish, including amphibians, reptiles and benthic macroinvertebrates. Removing the culvert will improve the ability of many organisms to access the River's important feeding, spawning and refuge habitats.
	Reintroducing sunlight to stream channel, thus helping to restore plankton communities	Biological	Long	Direct	Insignificant – Daylighting the River will allow sunlight to reach the River directly in this location, which in turn will allow photosynthesis to occur again. This will allow plankton communities to develop in this section of the River. Plankton serve as the base of the aquatic food chain and thus support the entire riverine ecosystem.
Adverse Effects	Traffic disruption due to construction equipment on roads near project sites	Socioeconomic	Short	Indirect	Insignificant –Temporary condition; measures will be taken to reduce congestion as much as possible; no significant effects to local businesses or residents are anticipated.

3.3.5 Cumulative Effects

Cumulatively, it is anticipated that there will be a long-term, positive effect on the biological and physical health of the Upper Neponset River watershed due to the implementation of the Alternative 1 (preferred) Tier 1 and Tier 2 projects. However, relative to the magnitude of adverse ecological impacts that currently exist in the watershed, the positive cumulative effect of these proposed restoration actions is not expected to be significant.

Cumulatively, it is anticipated that there would be a long-term, positive effect on the biological and physical health of the Upper Neponset River watershed due to the implementation of the Alternative 2 (daylighting the Neponset River on the B&U Site). However, relative to the magnitude of adverse ecological impacts that currently exist in the watershed, the positive cumulative effect of this restoration project is not expected to be significant.

Cumulatively, it is anticipated that there would be a long-term adverse effect to the physical health of the Upper Neponset River watershed were Alternative 3 (no action) selected because no restoration would occur. However, relative to the magnitude of adverse ecological impacts that currently exist in the watershed, the adverse cumulative effect of the no action alternative is not expected to be significant.

3.4 Conclusion

Within the context of NEPA, both Alternative 1 (preferred) and Alternative 2 would have a beneficial effect on physical and biological resources. However, Alternative 1 (preferred), which would allow for the implementation of several projects, would have a greater beneficial effect than the Alternative 2 river daylighting project. Additionally, the Alternative 2 river daylighting project is too costly to be implemented with the settlement funds. Thus, the Trustees select and will implement Alternative 1 (preferred).

4. STATE SETTLEMENT – GROUNDWATER RESTORATION ALTERNATIVES AND ASSESSMENT

4.1 Introduction

The Secretary of EEA serves as the Commonwealth's Natural Resource Trustee. Within EEA, MassDEP administers the NRD Program. As a Trustee of groundwater resources at the B&U Site, EEA resolved a claim for injured groundwater resources as part of the 2011 NRD settlement. The settlement included $300,000 to restore, replace, and/or acquire the equivalent of injured groundwater resources.

This section of the Final Restoration Plan/Environmental Assessment focuses on restoring groundwater and the services that it provides to humans and the ecosystem, and was prepared by MassDEP on behalf of EEA in accordance with the NRD provisions under section 107(f) of CERCLA, 42 U.S.C. §9607(f). Further, EEA's Trustee authority includes section 5(a) of the Massachusetts Oil and Hazardous Material Release Prevention and Response Act, Chapter 21E

of Massachusetts General Laws, M.G.L. c. 21E, as amended ("Chapter 21E") and section 2A of chapter 21A of Massachusetts General Laws, as amended ("Chapter 21A, §2A").

4.2 Summary of B&U Site Injuries and Public Losses

If contaminant concentrations measured in groundwater exceed the Massachusetts Drinking Water Standard for that contaminant (as published at 310 CMR 22.00) or another standard (for example, Groundwater Standards established in the Massachusetts Contingency Plan or an advisory level) established for the protection of human health, it is considered an injured resource. B&U Site investigations and sampling activities from the late-1980s through the mid-2000s documented the presence of volatile organic compounds, semi-volatile organic compounds, and metals in groundwater at concentrations that exceeded Massachusetts Drinking Water Standards and MCP Groundwater Standards.

In 1994, EPA added the B&U Site to the Superfund program's National Priorities List (NPL). The Site is located within the boundaries of the 30-square-mile Head of the Neponset Aquifer (HNA) designated by EPA in 1988. The HNA encompasses most of Walpole, and portions of Dover, Foxborough, Medfield, Norwood, Sharon, and Westwood. It is the principal source of drinking water to residents within that area served by public and private drinking water wells. In addition, the Site is partly underlain by a medium yield aquifer and is classified as GW-1, a Current or Potential Drinking Water Source Area.

4.3 Restoration Goals/Purpose of Restoration

The Commonwealth's overarching restoration goal, as expressed in the 1984 Water Supply Policy Statement, is as follows:

> Water is a valuable resource of the Commonwealth, and as such, the state needs to establish laws and policies to provide for its multiple uses, protect its quality and ensure that it is available to meet the legitimate needs of its citizens. The state's overall goal is to ensure that water is available in sufficient quantity and quality to meet Massachusetts' current and future needs and to accommodate both consumptive and non-consumptive needs.

This goal has been refined through several policies and guidelines, including but not limited to, the Massachusetts Water Supply Policy Statement (1996), Massachusetts Water Policy (2004), Offsets Policy Regarding Proposed Interbasin Transfers (2007), and the Massachusetts Water Conservation Standards (2012). The Commonwealth's ground and surface waters are interconnected and renewable hydrological resources whose protection and restoration are critical to insure the availability of safe and potable drinking water for current and future needs; promote sustainable and equitable development; and sustain water-dependent ecosystems. Integrated water resources management is essential for the protection and restoration of interconnected and interdependent hydrological and ecological systems. The Commonwealth supports the development and implementation of local and regional, State and interstate plans that have broad public support and are consistent with its sustainable development principles. According to the 1996 Massachusetts Water Supply Policy Statement:

- It is in the public interest for the state to support and strengthen local and regional capabilities to manage public water supplies by working together to plan, construct, manage, conserve, and protect water supplies using the watershed as the foundation for such planning.
- The watershed is the planning unit for all aspects of water resources assessment, planning and management whose implementation is best served through a coordinated, watershed-based, public-private partnership.

The 2004 Water Policy seeks to advance the following environmental principles:

- keep water local and seek to have municipalities live within their water budgets by addressing issues from a watershed perspective;
- protect clean water and restore impaired waters;
- protect and restore fish and wildlife habitat; and
- promote development strategies consistent with sustainable water resource management.

In accordance with these policies, groundwater restoration projects have the potential to benefit current and potential drinking water supply sources as well as offset ecological impacts related to diminished water quantity or quality. Additionally, groundwater restoration projects can encompass a wide range of strategies to develop, protect, maintain and conserve current and potential drinking water supplies and provide for the protection of natural ecosystems.

4.4 Groundwater Restoration Solicitation and Criteria Evaluation Process

The groundwater restoration process varies from the process used for ecological restoration in that this section of the Restoration Plan and Environmental Assessment was developed prior to soliciting proposals and selecting site-specific projects. However, the guidelines for groundwater restoration project selection are provided in this section. The Grant Announcement and Application (GAA) for site-specific groundwater restoration proposals will be made available online through the Commonwealth's online-procurement system and MassDEP NRD Program website following approval of the Final Restoration Plan and Environmental Assessment. Proposals received in response to the GAA solicitation will undergo a two-stage evaluation as described below.

4.5 Solicitation Process

Following issuance of a Final Restoration Plan and Environmental Assessment, MassDEP will hold a public informational meeting in advance of the release of a GAA to share information about the settlement, groundwater restoration requirements, and funding opportunity. MassDEP will then release a GAA and post an announcement about the solicitation on the Commonwealth's procurement website (COMMBUYS) and the MassDEP website. MassDEP will also notify interested parties about the funding opportunity through a settlement-specific email list, which will include participants in the restoration planning process as well as municipalities, non-profit organizations, and planning agencies in the Head of the Neponset restoration focus area. Proposals will be due 30 days following posting of the GAA. The

Commonwealth's procurement rules prohibit MassDEP from consulting with potential applicants to develop project ideas once the GAA is issued. Potential applicants are strongly encouraged to participate in the restoration planning process and/or contact MassDEP before the GAA issue date to refine project ideas and obtain feedback.

4.6 Criteria Evaluation

The DOI NRD regulations identify the following factors to be considered in the evaluation and selection of preferred alternatives (43 CFR 11.82):

- technical feasibility;
- the relationship of the expected costs of the proposed actions to the expected benefits from the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources;
- cost-effectiveness;
- the results of any actual or planned response actions;
- potential for additional injury resulting from the proposed actions, including long-term and indirect impacts, to the injured resources or other resources;
- the natural recovery period;
- ability of the resources to recover with or without alternative actions;
- potential effects of the action on human health and safety;
- consistency with relevant Federal, State, and Tribal policies; and
- compliance with applicable Federal, State, and Tribal laws.

MassDEP incorporated the 10 factors described above into the following Eligibility and Evaluation Criteria. MassDEP is solely responsible for determining whether proposed restoration project ideas meet these criteria.

4.7 Eligibility Criteria

Groundwater restoration projects must meet the following Eligibility Criteria to be further considered and evaluated by MassDEP using the Evaluation Criteria. If any project does not meet the Eligibility Criteria, it will not be given further consideration. A project's demonstrated consistency with the Eligibility Criteria does not guarantee that it will be funded, but merely establishes that MassDEP could further consider the project for possible funding. Conversely, rejection of a proposed project based on these criteria means that MassDEP would not allocate NRD funds for that project, even though the proposed project may yield a restoration benefit to injured natural resources.

a. Groundwater restoration projects must:

- restore, replace, and/or acquire the equivalent of groundwater resources or groundwater resource services in the Head of the Neponset Sole Source Aquifer;
- have a strong link to groundwater resources and the services they provide to humans and ecosystems;

- be a tangible on-the-ground restoration project, or a component thereof: components may include data collection, feasibility evaluation, design, permitting, construction, monitoring, and community involvement;
- be consistent with Federal, State, or local law, regulation, or policies; and
- be protective of health or safety.

b. Groundwater restoration projects must not:

- be used to support ongoing efforts to comply with legal requirements, such as permit conditions, mitigation requirements, enforcement actions, and settlement agreements. However, funds may support projects that enhance or improve upon existing baseline compliance efforts, such as but not limited to:

    - accelerating the pace of performance of the obligation, which such pace represents a calculable and substantial groundwater restoration benefit; or,
    - increasing the natural resource benefits associated with performance obligation.

- be inconsistent or be undone or negatively impacted by future remediation work, or interfere with any ongoing or anticipated response actions or final decisions at the B&U Site;
- restore groundwater resources solely outside of the Head of the Neponset Sole Source Aquifer;
- be a proposal to conduct a study for a future restoration project or for research purposes; or
- use funds for continued operation, maintenance or support of an existing restoration project or natural resource.

4.8 Evaluation Criteria

The following Evaluation Criteria will be used to prioritize eligible restoration projects through a qualitative assessment of their value and feasibility.

Focus Criteria

a. Proximity to Injured Resources: Proposed restoration projects must be located in or provide groundwater resource benefits to the Head of the Neponset Sole Source Aquifer. Projects that provide benefits in close proximity to the Site will score higher under this criterion.

b. Relationship to Injured Resources (Nexus): Projects that restore, replace, or acquire the equivalent of the same or similar resources or services that were injured are preferred to projects that solely or primarily benefit other resources or services. Injured resources include groundwater.

Benefit Criteria

a. Magnitude of Benefits: Project maximizes the level of restoration, replacement and/or acquisition of the equivalent natural resources that were injured.

b. Multiple Benefits: Project will provide benefits to the greatest number of natural resource types and natural resource services.

c. Sustainability of Benefits: Project will result in long-term, self-sustaining and comprehensive benefits to groundwater resources and/or the services they provide. Project will require only periodic maintenance or management that represents a relatively small investment to provide continuing benefits. Management and degree of public access will be consistent with natural resource protection.

d. Consistency with State, regional, or local policies and plans: Project implements one or more public goals, needs and/or recommendations expressed in existing State, regional, or local planning or regulatory documents.

e. Community Goals: Project complements one or more community goals, needs and/or recommendations as expressed in existing plans that incorporated public input and involvement in their development.

f. Stewardship: Project will result in an "informed citizenry" that will help ensure ongoing environmental stewardship of restored groundwater resources and services. Project provides a critical foundation for ongoing and future groundwater restoration and protection activities.

g. Avoidance of Adverse Impacts: Project has little to no potential for adverse impacts to the environment or public health and safety, or modifications to project to avoid potential impacts would considerably decrease benefits to injured natural resources and/or services. Adverse impacts include those characterized as short- or long-term, direct or indirect, and include those affecting resources that are not the focus of the project.

h. Technical/Technological: Project will employ well-known and accepted techniques to achieve stated project objectives. Likelihood of success in proposed project location and expected return of resources and resource services is high.

i. Administrative and Management Capability: Project will be managed and administered by an organization that has demonstrated capability to successfully implement and complete similar projects.

j. Site Ownership: Restoration will occur at a publicly owned site or on private property with a private owner willing to provide access and protective easements or restrictions as appropriate.

k. Soundness of Approach: Project demonstrates how work activities are planned and scheduled as well as the soundness and feasibility of all technical and logistical aspects of the project.

l. Measurable Results: Project delivers tangible and specific ecological and/or socioeconomic results that are identifiable and measurable, and that may be evaluated using professionally accepted quantitative or qualitative methods, so that changes to groundwater resources and services can be documented and evaluated.

m. Level of Difficulty: Obstacles that may be encountered during project implementation (e.g., coordination with multiple outside parties, regulatory permits required, complex design and engineering, and public support) will not interfere with the likelihood of success.

n. Reasonableness of Costs: Project costs are commensurate with the benefits provided to injured natural resources and/or services. This will be a qualitative cost-benefit analysis.

o. Implementation-oriented: Project has a high ratio of NRD funding dedicated to implementation compared to general support and operation.

p. Project implementation readiness: Project has substantially completed planning, design and/or permitting phase and/or has definitive plan for completion.

q. Operation and maintenance needs: Project demonstrates that appropriate legal, financial, and operational mechanisms are in place to conduct operation and maintenance to ensure sustained public use benefits.

r. Leveraging of Additional Resources: Project partners represent a broad range of community and other interests with a demonstrated commitment to provide matching funds and in-kind services. While matching funds are not required, leveraging of non-NRD resources is preferred because it extends the availability of restoration funds and therefore increases the resource benefits provided by the funds.

s. Level of funding and resources needed for project implementation: If Project includes matching funds and in-kind services, applicant demonstrates that these resources in addition to the funding requested are adequate to complete the work proposed, including contingencies.

As part of the GAA process, evaluation of proposals will be conducted by a Grant Review Team (GRT) that consists of a Team Leader and various MassDEP and EEA staff members. Projects will be first assessed for eligibility by MassDEP. Projects that are determined to be eligible will be evaluated by the GRT. GRT members will independently apply the Evaluation Criteria to proposals and arrive at an individual score for each project. All GRT members will subsequently meet to discuss the projects' merits and derive a single, consensus-based recommendation for each proposal.

4.9 Restoration Alternatives Considered

The Commonwealth Trustee considered a set of restoration alternative categories that could potentially restore injured groundwater resources and/or improve groundwater services. These categories align with the Commonwealth's water policies and are expressly guided by the 2002 Water Conservation Standards:

a. preserve the Commonwealth's water resources, as part of the public trust;

b. sustain water supplies to meet current and future needs; and

c. protect aquatic ecosystems and minimize water supply impacts.

Groundwater Restoration Alternative Category: Groundwater Recharge

This restoration category includes projects that:

- protect the quality of current and potential drinking water supplies through aquifer land conservation;
- reduce losses of clean water to aquifers; for example, projects that reduce infiltration and inflow to a sewer system; and
- provide quality recharge to aquifers; for example, projects that capture, store and infiltrate stormwater that would otherwise be discharged directly to a stream via an existing storm drain system.

Groundwater Restoration Alternative Category: Demand Management

This restoration category includes projects that:

- implement measures to conserve water, including water audits, leak detection surveys and repair, infrastructure improvements or improved accounting, drought resiliency, rate structure studies and/or billing practices; and
- encourage public participation in conserving water, including the use of rebates for low-flow WaterSense labeled plumbing fixtures and Consortium for Energy Efficiency (CEE)-qualified appliances, water-efficient landscaping; and
- reduce impacts of drought conditions on aquifers and ecosystems, including restricting the use of private wells for irrigation purposes.

Groundwater Restoration Alternative Category: Integrated Management

This restoration category includes projects that:

- integrate planning and management of current and potential drinking water supplies and wastewater treatment, with an emphasis on the efficient use of land, energy, and water and regional or multi-community benefits.
- evaluate and implement measures to "de-centralize" wastewater treatment through innovative treatment technologies

All projects must provide an appropriate method for quantifying environmental results such as the water and cost savings from leaks repaired, retrofits, etc.

No Action Alternative

The Trustee also considered a restoration alternative of no action. Under this alternative, the Trustee would rely on natural recovery and would take no direct action to restore injured natural resources or compensate for lost natural resource services. Under this alternative, no compensation would be provided for interim losses in resource services.

4.10 Preferred Restoration Alternatives

The Commonwealth Trustee's preferred restoration alternatives include a suite of restoration projects from the restoration alternative categories described above (groundwater recharge; demand management and integrated management) that compensate for interim losses and satisfy the site-specific and regulatory criteria listed above. The Commonwealth Trustee considered the no action alternative to be non-preferred.

4.11 Environmental Benefits from Preferred Restoration Alternatives

Implementation of the preferred restoration alternatives are expected to generate long-term benefits to groundwater resources, and groundwater-dependent ecological resources that are substantially greater than any potential short-term adverse impacts that may occur during construction. Demand management, land acquisition for aquifer protection and integrated water supply and wastewater management are actions considered by the Commonwealth Trustee to have no or minor potential environmental impact.

5. SUMMARY OF AND RESPONSE TO PUBLIC COMMENTS

Summary:

The Trustees received comments during the public comment period (verbatim comments can be found in Appendix A) from two non-governmental organizations and two individuals:

Bill Abbott, Walpole citizen and Walpole Water and Sewer Commission member
Kenneth Southwood, Walpole citizen and head of Walpole Waters, Inc.
Neponset River Watershed Association
Massachusetts Audubon Society, Moose Hill Sanctuary

Three of the six comments received – submitted by Mass Audubon, the Neponset River Watershed Association and Bill Abbott – were supportive of the preferred alternative and the two proposed Tier 1 restoration projects (Traphole Brook Watershed Restoration Initiative and Memorial Pond Wetland Habitat Enhancement projects).

Mr. Abbott expressed support for the Tier 1 restoration projects but expressed reservations about the Tier 2 Sharon Great Cedar Swamp Hydrologic Model project on the grounds that developing a hydrologic model for this wetland will not necessarily lead to on-the-ground restoration.

Mass Aududon emphasized the high ecological value of the Traphole Brook watershed, the headwaters of which are located on Mass Audubon's Moose Hill Wildlife Sanctuary and expressed support for the proposed watershed restoration initiative in that watershed and its benefits to water quality and habitat. In addition to supporting the Tier 1 projects, Mass Audubon also expressed support for the Tier 2 Sharon Cedar Swamp Hydrologic Model project, emphasizing the need to advance the science and understanding of how to restore Atlantic White Cedar ecosystems and the high ecological value of the Sharon cedar swamp ecosystem in particular.

The NepRWA's comments expressed support for the preferred alternative and both the Tier 1 and Tier 2 proposed restoration projects. The NepRWA comments provided considerable additional information regarding its current efforts in Traphole Brook along with some specific recommendations for how to structure the Traphole Brook project. One recommendation in particular was a request that the funds for the Traphole Brook project be managed flexibly to allow for NepRWA to pursue projects where there is landowner support.

NepRWA provided multiple comments related to the disbursement of the state-only groundwater settlement, including additional information about ongoing groundwater protection efforts, potential groundwater restoration projects and some requests for clarification about project eligibility.

Three of the six comments came from Kenneth Southwood (Walpole, MA) who expressed concern about the proposed Tier 1 and Tier 2 projects, stating that these projects will not provide sufficient benefit to the Town of Walpole and advocating that the settlement funds be used to repair the Walpole Town Forest dam.

Additionally, the Trustees attended a meeting with the Walpole Town Administrator, Jim Johnson, and his staff during the public comment period (on May 30, 2018) in order to discuss the Draft Restoration Plan and to get feedback from the Town on the proposed projects. Mr. Johnson and his staff expressed their desire to see as much of the settlement as possible be used to fund projects located in the Town of Walpole, given that the B&U Site is located in Walpole and the Town of Walpole experienced the greatest effects from contamination from the B&U Site. They expressed concern that components of the Traphole Brook Watershed Restoration project could be implemented in locations outside of Walpole. They also expressed an interest in helping to identify projects located in Walpole that could be a part of the Traphole Brook Watershed Restoration Initiative.

Trustee Response

The Trustees have considered all of the comments received. Additional information provided by the NepRWA regarding the status of projects in Traphole Brook has been incorporated into the Final Restoration Plan, as has language emphasizing the Trustees' flexibility to shift funds

between the three components of that project (fish passage barrier removal, stormwater BMPs, and riparian habitat restoration) to maximize leveraging of additional funds and pursue projects where landowner support exists.

Comments on the Commonwealth Trustee's groundwater restoration alternative were provided by the NepRWA. This section has been revised to clarify that private irrigation wells are not a solution to shifting demand away from public water supply systems. The demand management category has been broadened to include support for public-facing water conservation measures and incentives. The integrated management category has been broadened to include measures to "de-centralize" wastewater. The NepRWA also provided detailed comments regarding the relative value of the groundwater restoration categories and actions. The Commonwealth Trustee believes that application of the proposed Evaluation Criteria reflect these comments.

In regards to the Sharon Great Cedar Swamp Hydrological Model project, the Trustees agree that the project itself is not an on-the-ground restoration project, but believe that support of the hydrologic modeling effort would increase the likelihood of restoring the swamp in the future. Additionally, the hydrologic model is a relatively small financial investment, proportionally to the other projects proposed and will only be implemented should funding remain after the implementation of the Tier 1 projects. Thus, the Trustees do not see a reason to remove or modify this project as written.

In regards to comments suggesting that the settlement funds be used to repair the Walpole Town Forest dam, the Trustees disagree that the repair of the Walpole Town Forest dam would provide any significant benefits to ecological or groundwater resources. In general, dams negatively impact ecological resources, increasing water temperatures, preventing downstream sediment transport and impeding fish migration. While the water retention created by dams can help groundwater recharge, depending upon underlying geology and other factors, the Trustees have found no evidence to suggest any significant groundwater recharge benefits in this location. Moreover, even if there were groundwater recharge benefits in this particular location, it would not be appropriate, nor consistent with CERCLA regulations, to implement a project that benefited one ecological resource while causing significant, long-term adverse impacts to other ecological resources.

In regards to the comments related to wanting to see as much of the funding as possible spent on projects located in Walpole, the Trustee Council took project location into consideration in the selection process. Project location was a factor in the selection of the Memorial Pond project, which is located in Walpole. Project location was also a factor in selecting the Traphole Brook Watershed Restoration project, as a considerable portion of that watershed is located in Walpole. These are the two primary projects being funded and they both will benefit natural resources in Walpole.

Within this context, the B&U Site Natural Resource Trustees actively explored and recommended restoration projects located in and around Walpole. The Trustees believe that the Draft and Final Restoration Plans, and the projects selected therein, reflect a strong benefit to the community of Walpole and its natural resources.

6. CONCLUSION

After significant and meaningful consultation with the public, stakeholders, and restoration project proponents, and after evaluating and considering the proposed restoration alternatives under the Superfund Law and NEPA, the Trustees select Alternative 1, their preferred restoration alternative, to implement with the $700,000 joint settlement:

Tier 1: Traphole Brook Watershed Restoration Initiative

Tier 1: Memorial Pond Wetland Restoration and Enhancement

Tier 2: Sharon Great Cedar Swamp Hydrologic Study

Tier 2: Land Conservation

In addition, with its $300,000 groundwater settlement, the Commonwealth will initiate a Grant Announcement and Application process in order to identify and fund three categories of groundwater restoration projects (groundwater recharge, demand management and integrated management) that will best:

a. preserve the Commonwealth‘s water resources, as part of the public trust;

b. sustain water supplies to meet current and future needs; and

c. protect aquatic ecosystems and minimize water supply impacts.

7. COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS AND POLICIES

Alternative 1 (preferred) projects have been evaluated for consistency with applicable federal, State, and local laws, regulations, and programs. A brief description of compliance with these governing bodies is provided in Table 2.

Table 2. Consistency and compliance with Federal Laws, Regulations, and Programs.

Law, Regulation or Program	Compliance Description
Massachusetts Clean Waters Act (M.G.L. Chapter 21, Sections 26-53)	Authorizes MassDEP to take all action necessary or appropriate to secure to the Commonwealth the benefits of the Federal Water Pollution Control Act, as amended, and other fFederal legislation pertaining to water pollution control.
Massachusetts Wetlands Protection Act (M.G.L. Chapter 131 section 40)	Establishes a public review and decision-making process by which activities affecting Areas Subject to Protection are to be regulated in order to contribute to the following interests: □ protection of public and private water supply □ protection of ground water supply □ flood control □ storm damage prevention □ prevention of pollution □ protection of land containing shellfish □ protection of fisheries □ protection of wildlife habitat
Massachusetts Area of Critical Environmental Concern (M.G.L. Chapter 21A, section 2(7))	ACECs are those areas within the Commonwealth where unique clusters of natural and human resource values exist and which are worthy of a high level of concern and protection. ACEC designation creates a framework for local and regional stewardship of critical resources and ecosystems. After designation, the aim is to preserve and restore these areas and all EEA agencies are directed to take actions with this in mind.
Massachusetts Environmental Policy Act (M.G.L. Chapter 30, sections 61-62H)	MEPA requires State agencies to study the environmental consequences of their actions. After the Final Restoration Plan is completed, individual restoration projects may be determined to trigger thresholds established under MEPA and will then be required to proceed through a MEPA review.
Massachusetts Oil and Hazardous Materials Release Prevention & Response Act, M.G.L. Chapter 21E, as amended.	Authorizes MassDEP to assess injury, recover damages, and restore natural resources.
National Environmental Policy Act (NEPA)	Chapter 3 of this document, along with the signature of the Service Authorized Official, ensures that the Draft Restoration Plan is in compliance with NEPA.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)	Chapters 2 and 4 of this document ensure that the Draft Restoration Plan is in compliance with CERCLA.
Clean Water Act of 1977 (Federal Water Pollution Control Act Amendments of 1972)	Any necessary applications for 404 General Permits to the U.S. Army Corps of Engineers will be filed in compliance with this Act.

Endangered Species Act of 1973, as Amended (16 USC 1531 et seq.)	Impacts to identified State and federally protected species will be minimized during the construction phase of the proposed projects; projects will enhance fish and wildlife habitat value. Consultations with the Service for proposed projects will be conducted in accordance with this Act.
Rivers and Harbors Act of 1899	Any necessary applications for General Permits to the U.S. Army Corps of Engineers will be filed in compliance with this Act.
Presidential Executive Order 12898 – Environmental Justice	The proposed projects will enhance safety and recreational opportunities for all residents and visitors, regardless of ethnic background. Public meetings and comments are open to the public.
Fish and Wildlife Coordination Act	The Service is the Lead Federal Agency for the projects proposed and has played an integral role in the development of the proposed projects and alternatives analysis.
Presidential Executive Order 11990 – Protection of Wetlands	The proposed projects avoid, to the extent possible, the long- and short-term adverse impacts associated with the alteration of wetlands.
Presidential Executive Order 11988 – Floodplain Management	The proposed projects will not encourage any human development or building within the existing mapped floodplain.
Presidential Executive Order 12898 – Environmental Justice	The proposed projects will not adversely affect low-income or minority populations. Projects being considered are all beneficial to surrounding communities.
National Historic Preservation Act of 1966 as amended (16 USC 470 et seq.)	The Service will consult with the State Historic Preservation Office and the Advisory Council for Historic Preservation on any projects that could involve historic and/or cultural resources.
Water Resources Development Act of 1990	The proposed projects seek to increase acreage and enhance the quality of wetland resources.
Federal Noxious Weed Control Act and Executive Order 13112	The proposed projects are not expected to introduce or spread noxious weeds or non-native invasive species.

8. REFERENCES

Massachusetts Department of Environmental Protection, 2004. Neponset River Watershed 2004 Water Quality Assessment Report, http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/73wqar10.pdf, accessed January 2018.

Massachusetts Executive Office of Environmental Affairs, 2004. Massachusetts Water Policy, 32 pp., http://www.mass.gov/eea/docs/eea/water/waterpolicy-2004.pdf, accessed January 2018.

Massachusetts Executive Office of Energy and Environmental Affairs and Massachusetts Water Resources Commission, 2012. Water Conservation Standards, 2012 Update, 75 pp., http://www.mass.gov/eea/docs/eea/wrc/water-conservation-standards-rev-june-2012.pdf, accessed January 2018.

Massachusetts Water Resources Commission, 1996. Massachusetts Water Supply Policy Statement, 1996 Update, 12 pp., http://www.mass.gov/eea/docs/eea/wrc/watersupply-policy.pdf, accessed January 2018.

Massachusetts Water Resources Commission, 2007. Offsets Policy Regarding Proposed Interbasin Transfers, 2 pp., https://www.mass.gov/files/documents/2017/08/31/Offsets%20Policy%20Regarding%20Proposed%20Interbasin%20Transfers.pdf, accessed January 2018.

9. APPENDIX A: PUBLIC COMMENTS RECEIVED ON DRAFT RESTORATION PLAN

Bennett, Lauren <lauren_bennett@fws.gov>

[EXTERNAL] Restoration Plan for Blackburn & Union Privileges Site

WILLIAM ABBOTT Fri, May 11, 2018 at 7:05 AM
Reply-To: WILLIAM ABBOTT
To: Karen.Pelto@state.ma.us
Cc: Lauren_bennett@fws.gov

Ms Pelto,

Having read the draft restoration plan for the Restoration Plan for Blackburn & Union Privileges Site and attended the public presentation of this plan by Ms Bennett at the Walpole Library on May 10, 2018. I think the Daylighting the Neponset River on the B&U site would be the best alternative. However, given the high cost of this option, the limited funds available and the objective of actually completing something, I think the Traphole Brook Watershed Restoration Initiative and Memorial Pond Wetland Restoration & Enhancement alternatives are the approachs that should be taken.

While the Sharon Great Cedar Swamp Modeling option is interesting, I would not recommend it. The B&U site and the damage done was in Walpole and the Modeling option only guarantees that a model will be created but no actual improvement to the environment. The Traphole Brook option and Memorial Pond option will result in actual improvement.

Thanks

Bill Abbott

(member of the Walpole Sewer & Water Commission)

Bennett, Lauren <lauren_bennett@fws.gov>

Blackburn & Union Draft Restoration Plan Soon to be Released!

kenneth.southwood Sun, May 13, 2018 at 12:49 PM
To: "Bennett, Lauren" <lauren_bennett@fws.gov>
Cc: "Pelto, Karen (DEP)" <karen.pelto@state.ma.us>, "Martin, Gerard (DEP)" <gerard.martin@state.ma.us>, "molly_sperduto@fws.gov" <molly_sperduto@fws.gov>, Jim Johnson <jjohnson@walpole-ma.gov>

Good morning all,
If just like to clarify something that was mentioned during the meeting. The possibility of a dam structure of some sort to retain more water in the Sharon cedar swamp?
I believe it was commented that the project is the closest to shovel ready we have right now.
As I mentioned during the meeting our own already existing Neponset dam in the Walpole Town forest and just upstream from the B&U site, is due for its 10 year safety inspection 2019. Securing it would do far more to protect Walpoles ecological economic and water storage copacity than any other project listed. The 2009 report is on file with the town engineers office with a then suggested price tag of 125k.
The benefits to the community as well as our river and ecological environment are ten fold. The water to hydrate the town forest it runs through, protection and possible ability to hold more water for our own beautiful cedar swamp as was mentioned the purpose for new form of dam in Sharon.With the added bonus of protection for our municipal supply wells along Washington st. I'd also suggest the the South St culver crossing inspection. Both sides of the road are full of fallen trees that we must look at flooding and safety.
I would also like to add there is some what of a conflicting message. Every damn in Walpole is on the list for possibly being taken down but we're going to build one in Sharon most likely at a sum of the same price?
As for the Neponset River Watershed Association and their involvement possibly receiving financial support for some of their programs with these funds. They have recently announced the opening of a wonderful new bridge Downstream closer to the city that is a wonderful enhancement to the community the river and recognizing it's importance. To that I say the same should be done at the Neponset river dam in the Walpole Town Forest. Again it's a conflicting message, These things can and are being done down stream but so opposed for Wallpole, when in fact a healthier river in Walpole benefits every community down stream.
The blueprint for conservation while balancing the needs of growth are still in place along the river.
As for the trap hole brook restoration, I cannot fully support it as Walpole will see no real benefit from.
From Our Mr.Water Roger Turner who has done so much for the community in many copacitites, our Health Agent Robin Chappelle who has done a great job staying on top of this and Mr Abbot of the Water and Sewer committee and his years of service to protecting our waters. Walpole has a good team in place with a great level of support from the community. I would encourage they a given a stronger voice in where and how this money is spent.

Thank you all for your time and effort on this matter and I look forward to working with all of you for the best outcome for our Neponset and Walpole.

Kenneth Southwood.

Bennett, Lauren <lauren_bennett@fws.gov>

Blackburn & Union Draft Restoration Plan Soon to be Released!

kenneth.southwood Mon, May 14, 2018 at 6:47 PM
To: "Bennett, Lauren" <lauren_bennett@fws.gov>
Cc: "Pelto, Karen (DEP)" <karen.pelto@state.ma.us>, "Martin, Gerard (DEP)" <gerard.martin@state.ma.us>, "molly_sperduto@fws.gov" <molly_sperduto@fws.gov>, Jim Johnson <jjohnson@walpole-ma.gov>

Happy Monday folks,
As a kid growing up at 42MacDonald circle, if I put a 2x4 in the stream.and forgot about it, all the phones in the neighborhood were ringing off the hook. If 1 inch of water is held in Sharon for trees or Trout, 5 inches inches is a no brainer benefit to Walpole and our 29 + years of contanimation.
More of these funds need to move upstream.

Kenneth Southwood
S. Walpole Ma

Sent from my Verizon, Samsung Galaxy smartphone

Bennett, Lauren <lauren_bennett@fws.gov>

[EXTERNAL] Our Neponset.

kenneth.southwood Fri, Jun 8, 2018 at 7:46 PM
To: "Bennett, Lauren" <lauren_bennett@fws.gov>, Jim Johnson <jjohnson@walpole-ma.gov>

Ms. Bennett

This being the 8th of june and deadline dor comment reguarding funds granted to the Blakburn Privilage site, it is with my sincerest request that you put Walpole first. We are the community of opportunity in restoration and balanced growth.

Kenneth Southwood
Concerned citizen for walpole waters.

Sent from my Verizon, Samsung Galaxy Tablet

Mass Audubon
Advocacy Department

208 South Great Road, Lincoln, MA 01773
781.259. 2172 hricci@massaudubon.org

June 8, 2018

Karen Pelto, NRD Program
MassDEP
One Winter Street, 6th Floor
Boston, MA 02108

Via Email: Karen.Pelto@state.ma.us

Re: **Draft Restoration Plan and Environmental Assessment for the Blackburn & Union Privileges Superfund Site Natural Resources Damage Settlement, Walpole, Massachusetts**

Dear Karen:

On behalf of Mass Audubon, I submit the following comments on the draft restoration plan for the Blackburn & Union site in Walpole. Mass Audubon supports the preferred alternative, which includes restoration of Traphole Brook and wetlands at Memorial Pond as the first tier priorities for funding. If funds remain following those initiatives, second tier projects would be a study of the hydrology of the Sharon Great Cedar Swamp and/or land conservation in the Upper Neponset River watershed.

Traphole Brook is a coldwater fishery supporting Eastern brook trout (*Salvelinus fontinalis*). This habitat type is rare and declining statewide and particularly in the eastern part of the state. The headwaters of the brook is located on Mass Audubon's Moose Hill Wildlife Sanctuary, and significant portions of the watershed are mapped as Priority Habitat for state-listed rare species. The proposed projects include improving road/stream crossings where culverts presently act as barriers to fish passage, stormwater retrofits to improve water quality and increase infiltration, and planting of vegetation along streambanks to improve habitat and shading and reduce erosion. These projects will benefit both water quality and habitat for numerous species.

The Atlantic white cedar swamp complex in Sharon is rare and important habitat type that provide refuge to a number of rare species unique to this imperiled community, including some of the only Hessels Hairstreak populations in southeastern Massachusetts. Advancing knowledge of the restoration needs of Atlantic White Cedar swamps and working to protect and restore complexes of these communities within the region will be imperative to the conservation of this habitat type and populations of the species that rely on them for habitat. While many Atlantic White Cedar swamps are protected throughout Massachusetts, numerous if not most sites are in dramatic decline from anthropogenic alteration of hydrologic processes and lack of disturbance. There is insufficient information available on how these processes function and best conservation management practices.

A study of the hydrology of the Sharon complex would advance the science need to conserve and restore cedar swamps.

Thank you for considering these comments.

Sincerely,

E. Heidi Ricci
Assistant Director of Advocacy

Cc: Sharon Conservation Commission
Neponset River Watershed Association

neponset river
WATERSHED ASSOCIATION
1967-2017 Celebrating 50 years

June 8, 2018

Karen Pelto
MassDEP
One Winter Street, 6th Floor
Boston, MA 02108

Re: Draft Restoration Plan and Environmental Assessment for the Blackburn & Union Privileges Superfund Site Natural Resources Damage Settlement, Walpole, Massachusetts

Thank you for the opportunity to comment on the abovementioned draft restoration plan. In general we are quite supportive of the goals and approach laid out in the proposed plan, and would welcome the opportunity to work with your office, the Town of Walpole and others to assist in its implementation.

We would offer the following specific comments, observations and suggestions as you go about finalizing the plan.

Re-forestation Project
Protecting and restoring the riparian corridor along the brook is clearly an important step to ensuring its long term viability. Therefore we strongly agree with the proposal to allocate a small portion of the available funding toward reforestation of degraded areas of the riparian corridor. However, we would observe that protecting existing intact riparian corridors is also critically important, and perhaps in the long run, even more important.

We have spoken with Greater Boston Trout Unlimited and they are excited about partnering with us on the project. We think they will be invaluable partners for this project.

With that in mind, we would recommend that the scope for this portion of the project be laid out as follows:

- Conduct a desktop GIS analysis of land ownership within 200' of the brook and its tributaries to identify ownership and protection status of each parcel.
- Conduct a shoreline survey using mobile GIS data collection to document the condition of the riparian corridor along the length of the brook and its tributaries.
- On the basis of the above analysis, sort parcels into four categories and rank them within each category in terms of overall significance to the future health of the brook A) protected and intact B) protected and in need reforestation C) unprotected and intact D) unprotected and in need of restoration.

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- Assemble a series of simple fact sheets about Traphole Brook, the important habitat it provides, and why the shade provided by riparian buffers is so important to the health of the stream.
- Contact landowners for parcels where reforestation and/or protection is needed, to explore their willingness to undertake the needed action.
- Implement conservation restrictions and/or volunteer based reforestation projects with willing land owners as available funds allow.

We would observe that it is very difficult to estimate how much it would cost to fully implement these steps because of the uncertainty regarding the level of land owner interest.

The draft plan indicates that for willing reforestation sites—and obviously for protection sites as well—there would need to be a conservation restriction or other contract-based protection mechanism put in place. Further consultation needs to occur with the Towns of Walpole, Sharon and Norwood to see if they would be willing to assume the burden of managing and enforcing conservation restrictions. While private entities could also hold CR's there would likely be a significant cost involved. There is also a significant administrative burden involved in setting up a conservation restriction, and we would expect it would be necessary for a private group such as NepRWA to undertake this work even if a town is the ultimate holder of the CR. We recommend that CR setup costs be considered eligible costs under this project using settlement funds.

If the cost of CR setup and ongoing management can be solved, we believe it would be very feasible to recruit volunteers to implement planting activities and thus the cost of planting would need only include supervision and plant material.

If, as we would hope, there is significant landowner interest, the proposed budget for this portion of the project will likely be inadequate to fully fund the implementation phase, however if the project is implemented with a flexible timeline, it may be possible to find additional outside matching funds to extend what can be accomplished.

Finally, we would note that additional opportunities for reforestation would exist along the Mill Pond in Norwood, if we were to remove the dam and restore the trout habitat in that area.

Culvert Replacement
We agree that addressing stream barriers on Traphole Brook is a critical need, and an appropriate use for a significant portion of the project funds.

NepRWA has conducted site inspections at several potential culvert upgrade sites and is in the process of holding preliminary conversations with Sharon, Walpole and MassDOT regarding these opportunities. There may also be additional culvert remediation opportunities on tributaries of Traphole Brook which we have not yet inspected. However, at this point we have yet to determine whether any of these projects are viable candidates for implementation from technical, financial or landowner interest perspectives.

Perhaps the most significant stream barrier on Traphole Brook is the Mill Pond Dam in Norwood. In addition to functioning as a stream barrier, NepRWA has collected temperature data documenting a significant thermal impact associated with the pond. We have had initial conversations regarding the prospect of removing the Mill Pond Dam with representatives from

several town departments in Norwood and are in the process of reaching out to private abutters who are partial owners of the dam and/or pond.

A second important barrier along Traphole Brook is the dam upstream of the Route 1 culvert in Walpole. Note that in the draft report, this site is incorrectly described as being upstream of rout 95. While the culvert itself does not appear to be a stream barrier, the dam which is immediately upstream of the culvert is a barrier. It appears that this dam was constructed as a detention practice, and we assume its purpose is to match the peak discharge rates that were associated with an older smaller culvert that once existed in this location prior to the 1980's. We are currently researching the history and purpose of this structure which we presume is owned by MassDOT.

We agree that adding money to the DER culvert grant program would be an efficient way to distribute the NRD funds intended for stream barrier removal. However, we are concerned that placing all of the funds in the culvert program would eliminate the possibility of pursuing restoration of the Mill Pond Dam and the dam at the Route 1 culvert.

We are also concerned that while the funding proposed for this task is substantial, it is limited in proportion to the size of the task at hand, and it will be critical to leverage NRD funding with additional outside matching funds. On its own, NRD funding may not be sufficient to complete even one culvert replacement and/or dam removal. An additional drawback of placing the NRD stream barrier funds into the DER culvert program, is that this program neither provides a match from non-NRD sources, nor requires that a match be provided. By contrast, using the NRD funds as a match to an EEA Dam and Seawall Grant application would provide a 400% match for the NRD funds.

In light of the above, we would strongly recommend that the NRD Trustees hold off on placing the funds in the culvert grant program until such time as the feasibility of the various stream barrier removal opportunities in the Traphole Brook Subwatershed have been more meaningfully evaluated. If one or more culvert projects seem worth pursuing after this preliminary evaluation, it may make sense to initially put only a portion of the NRD funds into the DER stream barrier grant program to facilitate design work on one or more culverts, and then determine how to distribute funding for implementation activities during a second phase.

Lastly, we would observe that while Traphole Brook spans three communities—Sharon, Walpole and Norwood—the unique cold water fishery resource we are seeking to protect is located squarely in Walpole. Because of climate change impacts on water temperature, Walpole needs to not merely preserve existing conditions but actually improve them if Walpole's unique fishery is to be viable in the long term. Ironically it is stream barriers near but just outside Walpole's borders—specifically the Mill Pond Dam and the Plain Street Culvert—that may be the best opportunities to expand available habitat for Walpole's fish, and Walpole has little or no ability to compel its neighboring communities to act. The availability of NRD funding may provide Walpole with a unique opportunity to effectuate needed changes in these neighboring communities.

Traphole Brook Stormwater Retrofits

We are pleased to see this action in the proposed restoration plan. NepRWA has had significant success partnering with towns to implement stormwater retrofit projects in the past. We have already worked with the Towns of Walpole and Sharon, and developed 25% design plans for

three BMP opportunities for each town. However, none of these previously identified opportunities are within the Traphole Brook Watershed.

The process that we've used in the past to develop BMP retrofit opportunities typically begins with a discussion with a partner town about the 319 grants and funding requirements, what types of stormwater BMPs the town is comfortable maintaining, and what areas they view as priorities. Next a GIS analysis of the watershed is performed to identify all of the publically owned parcels, the existing drainage infrastructure, and potential for retrofits within those publically owned parcels. Based on the GIS analysis, potential retrofit opportunities are identified for follow-up site visits.

During the field evaluations sites are graded for their retrofit potential based on feasibility, constraints, abutter conflicts, and cost of construction vs potential benefit, among other factors. Twenty five percent design plans are then developed for the top ranked sites. Once design plans are in hand, NepRWA helps the town to apply for 319 grant funding to build the stormwater BMPs.

NepRWA has an existing source of funding which we can use to evaluate potential stormwater retrofit opportunities in the Traphole Brook Subwatershed, and we will plan to schedule time for our staff to examine these areas during the summer and fall or 2018. We would then propose to use the $75,000 in NRD funding to help meet the match requirements of one or more 319 stormwater implementation grants to be submitted in 2019 or beyond.

However, we would need the towns of Walpole, Sharon, Norwood and/or MassDOT to agree to serve as applicants for any future 319 grant application, to supervise the construction of the resulting project, and then agree to incur the expense of operating and maintaining the resulting BMPs going forward. Ideally the communities would also be willing to contribute a significant in-kind match toward project design and management to further leverage the available grant and NRD funds. NepRWA needs to undertake further discussions with the three towns and MassDOT to determine their willingness to play the role described above.

Implementing this approach would also require that the NRD trustees exercise considerable flexibility in the timing and distribution of NRD funds so that they can be utilized as a match for 319 grant funds, particularly given the uncertainty of whether a 319 grant application would be successful (though we suspect it would score highly). As discussed below, stormwater projects may also end up being a significant component of the groundwater restoration program and as such, maximizing the leverage of available NRD funds may require deploying them across more than one round of the 319 grant program.

Groundwater Restoration RFP

Although the Draft Plan identifies a number of communities as being part of the sole-source aquifer area targeted by this portion of the project, most of the area of those towns (other than Walpole) are outside the aquifer area. We would recommend providing additional language in the Final Plan and any eventual RFP that clarifies what type of projects would be eligible in towns other than Walpole. For example, one possible project would be to implement a regional water conservation program involving all the communities in the sole source aquifer area. However in towns other than Walpole, a significant part of the benefits of such a program would accrue to groundwater outside the sole source aquifer area.

We were also surprised that the description of potential water conservation activities seemed to be mostly focused on internal activities and infrastructure improvements, and that a public-focused water conservation program (i.e. rebate program) was not explicitly included among the potential options. We presume that this is an oversight in the drafting of the document and not an intentional omission, but we recommend that the text of the final report be revised to reflect this possibility.

There is also language on page 46 of the Draft Plan that can be interpreted as encouraging the creation of new private irrigation wells as a strategy to shift demand away from the public water supply system. While it is unclear if this is the intended interpretation of this language, NepRWA would strongly object to any suggestion that more private irrigation wells could be considered a benefit to groundwater resources, and we recommend that this language be modified or eliminated in the final report.

Based on our existing knowledge of Walpole's hydrology, an informal discussion with one representative of the Walpole Water and Sewer Commission, and various conversations at the NRD public meetings, we would make the following observations:

- The Town of Walpole already has robust and well-funded programs to control unaccounted for water and to reduce sewer system inflow and infiltration, and as such it does not appear that these are areas in need of additional funding from the NRD settlement.
- We understand that Walpole is well along in the process of updating its water rates with an eye toward adopting an increasing block rate system. While we strongly support such an action by the Town, it does not appear that it would be helpful to use NRD settlement funds for rate studies at this time.
- At the NRD public meetings some audience members suggested that one strategy for preserving Walpole's groundwater resources would be to invest NRD funds in rebuilding one or more failing dams as a means to "retain" water in town and increase groundwater recharge. NepRWA would not support such a use of NRD funds since we do not think it makes sense hydrologically or financially.
- We have long advocated for Walpole to become a partial member of the MWRA and use MWRA water to rest its local groundwater sources during key low flow periods. This would be one of the most important steps Walpole could take to protect the quality and quantity of local groundwater supplies. However, we understand that Walpole recently proposed joining the MWRA, and this proposal failed by a wide margin at town meeting. Thus, allocating NRD funding toward importing MWRA water would not appear to be a feasible use at this time.
- Another possible use of NRD funds would be to undertake a source optimization modeling study for the town, or perhaps better yet on a regional basis for all the towns with sources in the sole source aquifer. While we would strongly support completion of such a study, we would expect the groundwater conservation benefits of water supply source optimization in this region to be modest at best unless communities are prepared to import MWRA water which does not appear politically feasible at this time.
- We are not aware of any remaining high priority water supply-related land acquisition opportunities in Walpole.
- Walpole already has a rebate program for water saving fixtures and appliances. However, in our opinion, a more aggressive public outreach and education campaign to promote water conservation generally, and the rebate program specifically, would be a worthwhile

investment and could greatly accelerate the installation of water saving fixtures. We feel that implementing such an outreach program and covering the cost of rebates that exceed Walpole's normal annual funding would be an appropriate way to invest a portion of the NRD Settlement funds. However as discussed above, it probably does not make sense to do this in other towns which are only partially located in the sole source aquifer area. Also, it is highly unlikely that this activity would cost $300,000.

- Undertaking additional stormwater retrofits in Walpole or in neighboring towns within the sole source aquifer area would be another appropriate use of NRD funds. Obviously these retrofits would need to have a strong focus on infiltration practices. As discussed above, we would strongly prefer to use NRD funds as a match for other funding sources such as the 319 grant program. This would create a need for the NRD Trustees to be flexible in the timing of distributing their funds, particularly since each retrofit project would need to go through two RFP processes: first the NRD RFP and then the 319 RFP. Also it seems likely that a substantial portion of the NRD groundwater funding might be used for stormwater retrofits, and it might therefore require more than one round of 319 grants to fully match the NRD funds.
- All wastewater collected in the sole source aquifer area goes either to individual septic systems, or to sewer systems that ultimately discharge outside the sole source aquifer area (the one exception being the wastewater reuse system in the area around Gillett Stadium in Foxborough). As such, preserving existing septic systems and preventing them from being connected to regional sewer systems is an important goal. However, Walpole and Sharon at least already have in place policies that discourage septic systems from being converted.
- Finally there is one more strategy that, like importing MWRA water on a seasonal basis, could potentially have a large positive impact on groundwater resources in Walpole. This would be to stop or reduce exports of wastewater via regional sewer systems, and instead treat water locally and recharge it to the ground before it reaches the MWRA sewer system. We acknowledge that this is a fairly "radical" idea and it is not one we have discussed with anyone in Walpole. However, new technologies are available that allow a comprehensive recovery of water, heat, and biogas resources in a small footprint. The economics of such systems, as well as the siting considerations, are much more favorable than for traditional wastewater treatment facilities. If Walpole has an interest in considering such an approach, NRD settlement funds could be used to undertake feasibility studies, and perhaps permitting or design activities. The benefit is that such an approach could provide a much, much larger volumetric groundwater benefit than any of the other approaches being contemplated. The drawback is that study and planning work would likely consume all the NRD funding proposed for groundwater improvements. We recommend that the Final Report contain language to clarify whether the Trustees would be willing to consider allocating the groundwater funding to a planning process like this rather than to on the ground implementation activities, should the town be interested in pursuing it.

All of the options described above for use of the NRD groundwater funds are dependent on the willingness of Walpole and/or other communities to support these approaches both administratively and financially, and NepRWA has not yet had the opportunity to discuss any of them in detail with the communities.

In general, the proposal to use an RFP process to determine the best use of the groundwater funds is a positive mechanism to encourage creative approaches and the wording of the Draft Report is generally consistent with all of the ideas suggested above.

While other outcomes are certainly possible, we believe that the most likely outcome of an RFP like the one described in the Draft Plan, would be proposals for a moderate sized expansion of Walpole's water conservation program, and significant expenditure to fund additional stormwater retrofit projects.

Finally, we would recommend that once the final NRD report is published, the Trustees should plan on a significant amount of time before RFP responses are due, to allow for a suite of high quality projects to be prepared by various partners working together in the region. However, we would also recommend that if possible, you schedule the NRD RFP so that a decision will be available at least a month before next year's 319 grant applications are due (expected approximately June 1, 2019).

Conclusion
Thank you in advance for your consideration of these comments and your considerable work in assembling the Draft Report. We look forward to the opportunity to work with you and local communities to help implement your final recommendations.

Sincerely,

Chris Hirsch
Environmental Scientist

Ian Cooke
Executive Director