

**Final Amendment to Final Restoration Plan and Environmental Assessment, Holyoke Coal Tar Deposits and Former
Holyoke Gas Works, Connecticut River**

December 2015

This Amendment to the May 2012 Final Restoration Plan and Environmental Assessment (Final RP/EA) for the Holyoke Coal Tar Deposits and Former Holyoke Gas Works, Connecticut River Natural Resource Damages (NRD) Settlement was prepared by the Holyoke Coal Tar Trustee Council (Council). The Council is comprised of Trustees from the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs (EEA), represented by the Massachusetts Department of Environmental Protection (MassDEP), the United States Fish and Wildlife Service (USFWS), and the National Oceanic and Atmospheric Administration (NOAA). The May 2012 Final RP/EA set forth the Council's plan to restore, replace, or acquire the equivalent natural resources or natural resource services that were injured by the release of hazardous substances and hazardous materials by the Holyoke Coal Tar Site (the "Site") in Holyoke, Hampden County, Massachusetts. The Council has implemented the first-tier projects identified in the Final RP/EA, and through this Amendment is recommending an approach for expending remaining funds totaling up to \$51,453.

In 1996, the Trustees reached a settlement with the Responsible Parties for the Site (the Holyoke Water Power Company and the City of Holyoke Gas and Electric Department). The Responsible Parties agreed to pay the Trustees \$345,000 to compensate for injuries to natural resources, including federally-endangered shortnose sturgeon, endangered and/or state protected freshwater mussels, benthic habitat, and other biological resources (Consent Decree 2004). The settlement

amount was calculated based on the costs of restoration actions in 2004 that the Trustees determined would be needed to compensate the public for natural resources and services harmed or lost due to environmental contamination from the Holyoke Gas coal tar deposits. Account interest earned on the settlement funds over time increased the total amount of funds available for restoration planning, implementation and case administration to \$395,000.

In the Final RP/EA (2012), the Holyoke Coal Tar Trustees approved funding up to the following amounts for the Tier I preferred restoration alternatives/actions:

- \$168,500 to the MA Division of Ecological Restoration (MA DER) for the removal of the Bartlett Rod Shop Company dam on Amethyst Brook in Pelham, MA
- Up to \$150,000 to the USFWS for the construction completion of the Manhan River fishway in Easthampton, MA
- \$45,000 to the MassWildlife, Natural Heritage and Endangered Species Program (NHESP) for the field survey and monitoring of freshwater mussels in targeted reaches of the Connecticut River and tributaries

The Bartlett Rod Shop Company dam removal was completed by MA DER in November 2012, and soon after project completion, another smaller, timber dam was uncovered approximately 450 feet upstream of the former Bartlett Rod Shop Company dam as the Amethyst Brook channel adjusted to a restored condition. While both anadromous and resident fishes were documented using the stream reach above the former Bartlett dam site for spawning, these fishes were unable to pass the exposed timber dam that traverses this high gradient stream.

The Manhan River structural (Denil) fishway was completed in early 2014, and the USFWS has documented anadromous and resident fishes using the fishway to successfully pass upstream to spawning and rearing habitats. The Denil fishway allows these fishes to pass around the dam and bedrock ledge which underlies the dam structure.

In 2015, the NHESP completed extensive river surveys of the Connecticut River and a number of its Massachusetts tributaries to identify the presence and abundance of state-listed freshwater mussel species. By completing these underwater surveys, areas with freshwater mussel populations were identified to afford sound management and protection measures to sustain or restore these mussel populations.

Tier II preferred restoration alternatives/actions were also approved by the Trustees and identified in the Final RP/EA. These are projects that would also result in appropriate restoration of the injured natural resources, and for which the Trustees would allocate settlement funds only if settlement monies remained after completion of Tier I projects. The Tier II preferred alternatives included:

- Removal of the Orient Springs dam on Amethyst Brook in Pelham, MA (\$45,000 - \$115,000)
- Removal of invasive water chestnut from Log Cove on the Connecticut River in Holyoke, MA – proposed as follow-up to community meeting (\$11,500 per year; total cost range \$12,000-\$36,000)

Having completed the Tier I projects, the Trustees re-evaluated the Tier II projects to determine how to best allocate remaining funds (\$51,453). The Trustees identified an additional action related to one of the Tier I projects, the Bartlett Rod Shop Company Dam (BRSCD), that should be completed prior to allocating funds to the other Tier II projects. Specifically, an additional, older timber dam was uncovered within months of the BRSCD removal effort. Previously unknown and undetected, this buried wooden dam was exposed approximately 450 feet upstream of the BRSCD, as the upstream channel bed incised and naturally adjusted to the restored channel conditions (Refer to Figure 1). The structure – known as the “timber dam” (also known as, Allen dam) – is a vernacular timber crib structure, approximately 30+ feet long, 28-feet wide, 13-feet tall, substantially smaller than the BRSCD, and dating from as early as the late 1700s. The MA DER and project partners seek to remove the timber dam and address unmet ecological goals associated with the BRSCD removal for addressing the natural resource injuries.

At the time the Final RP/EA was published, the only known obstruction on Amethyst Brook upstream from the Bartlett Rod Shop Company Dam was the Orient Springs Dam (0.6 miles further upstream). The Final RP/EA sought to remove both dams, if funding allowed, to reconnect a total of 8.5 miles of headwater stream habitat to downstream areas.

However, since the timber dam is located between the former BRSCD and the Orient Springs Dam, this structure needs to be removed prior to further considering removal of the upstream Orient Springs Dam. Furthermore, the timber dam considerably limits the ecological benefits of the BRSCD removal effort; it prevents passage of migratory and resident fishes, and limits recovery of the stream channel and diminishes the overall ecological success of the barrier removal project.

Since the exposure of the timber dam in 2013, MA DER has overseen several technical assessments of the dam, developed engineering plans and a basis-of-design report for removal, and mitigation measures to address historical significance of the dam in accordance with Section 106 of the National Historic Preservation Act (NHPA). The Massachusetts Historical Commission (MHC) and Pelham Historical Commission (PHC) were formerly consulted by NOAA as lead federal agency and on behalf of the Council. For the BRSCD removal, a Memorandum of Agreement (MOA) was prepared and signed by NOAA, , MHC and other consulting parties. Mitigation measures were implemented as part of the MOA, and the signed document also contains a stipulation for potential historic resource discovery during project implementation. The “discovery feature” stipulation allows MA DER, NOAA and other project partners to develop and implement mitigation measures for the timber dam removal. Mitigation measures will include written and photograph documentation of the structure by an expert historic archaeologist with a special use permit issued by the Massachusetts Board of Underwater Archaeological Resources. The ownership of the timber dam is unknown, but the two abutting landowners support the dam removal and have provided permission for construction equipment access and project implementation.

At this time, all permits for dam removal have been filed by MA DER, and the Order of Conditions under the Massachusetts Wetlands Protection and § 401 Water Quality Certification have been issued. The Corps of Engineers' permit for the project is expected to be issued in early fall 2015. Removal of the timber dam is expected to occur during the low-flow period in late fall 2015, once all funding and regulatory authorizations are secured. Project activities will include minor regrading of stream channel bed materials. Up to 500 cubic yards of uncontaminated sediments will be

excavated (with excavation beginning on right bank), with grading of the left-side riverbank and natural gravel and cobble placed back into the stream for channel reconstruction and natural sediment transport. On-going monitoring of physical and biological changes is expected through the existing partnership between Dartmouth College and the U.S. Forest Service. Removal of the timber dam is expected to cost on the order of \$65,000, including \$30,000 for demolition and earthwork, \$20,000 for historical documentation, and \$15,000 for engineering oversight and construction administration. Currently there is a shortfall of \$29,380. The Council recommends allocating up to \$30,000 to assist with removal of the timber dam. Removing the timber dam is critical to restoring Amethyst Brook and necessary to realize ecological services and natural resource injury restoration associated with removal of the BRSCD.

For compliance with the National Environmental Policy Act (NEPA, 42 U.S.C. Section 4321 et seq.), anticipated environmental impacts (both beneficial and negative impacts) associated with the proposed timber dam removal have been considered and addressed through NOAA's Final Programmatic Environmental Impact Statement (PEIS) for Habitat Restoration Activities Implemented throughout the United States, released to the public in June 2015 (The PEIS can be accessed on the following NOAA web site:

<http://www.habitat.noaa.gov/restoration/aboutrc/environmentalcompliance.html>). Section 2.2.2.3.1 of the PEIS specifically addresses impacts typically associated with dam removals. Formal responses to questions in the PEIS checklist have been prepared and submitted by NOAA on behalf of the Trustees, and a final decision on the proposed action is pending, but expected to result in a Finding of No Significant Impact (FONSI) signed by NOAA.



Figure 1: Timber dam, Amethyst Brook, Pelham, MA

At the time of the public release of the Final RP/EA, the Silvio O. Conte National Fish and Wildlife Refuge (Conte Refuge) was leading various partners in the Connecticut River Watershed to control invasive water chestnut (*Trapa natans*), including at Log Pond Cove on the Connecticut River in Holyoke. The approximate 20-acre infestation at Log Pond Cove has been the subject of efforts to eliminate the invasive non-native water chestnut since at least 2000. Various methods of plant removal have been utilized, including the application of herbicide treatment. The Final RP/EA proposed to provide Tier II funds to the Conte Refuge for the continued management efforts of the invasive water chestnut at Log Pond Cove and for associated monitoring. Subsequent to the publication of the Final RP/EA, the City of Holyoke became the project

lead with respect to management of funding. In addition, the project partners raised concerns that the herbicide application, while controlling the invasive water chestnut, was not eliminating it. As a result, the project partners have expressed a desire to evaluate invasive control efforts to date, to investigate the existing seedbed through scuba diver surveys or other methods, and to evaluate and implement (where appropriate) other methods of invasive plant control. The Council recommends allocating remaining funds up to \$22,073 towards the water chestnut control project.

Following completion of the Tier I preferred alternatives, a total of up to \$51,453 remains unspent and available for restoration. The Holyoke Coal Tar Trustee Council proposes to amend the Final RP/EA to recommend up to \$30,000 in funds be made available for the removal of the timber dam on Amethyst Brook and up to \$22,073 in funding the planning and implementation to manage and control invasive water chestnut at Log Pond Cove on the Connecticut River in Holyoke through the City of Holyoke Conservation Commission, as described in this amendment.

Combined, the implementation of the timber dam removal on Amethyst Brook and invasive water chestnut management and control at Log Cove will both reconnect the upstream headwaters to downstream riverine habitat for anadromous fish passage, improve water quality, restore natural transport processes for coarse particulate organic matter, improve habitats for freshwater mussels and their larval host species, and restore the natural movement of stream sediments to improve downstream benthic habitat for mussels and other aquatic organisms.

The Trustee Council announced the proposed Amendment on November 10, 2015 and the text of the proposed Amendment was made available for public review at the public libraries in Holyoke and Pelham, on the NOAA Damage Assessment Remediation and Restoration Program (DARRP) website: <https://darrp.noaa.gov/> and on the MassDEP NRD Program website: <http://www.mass.gov/eea/agencies/massdep/cleanup/nrd/>. Public comment was accepted through November 25, 2015 at 4:30 p.m.

During the public comment period, the Trustee Council received written comments from two entities. Written comments expressed support for the proposed Amendment.

Following review of the public comments received, the Trustee Council approved the Amendment to the Final Restoration Plan and Environmental Assessment, Holyoke Coal Tar Deposits and Former Holyoke Gas Works, Connecticut River, allocating up to \$30,000 to assist with removal of the timber dam on Amethyst Brook and up to \$22,073 towards the water chestnut control project on the Connecticut River in Holyoke.