

FINAL AMENDMENT TO THE FINAL RESTORATION PLAN FOR THE ARMY CREEK SUPERFUND SITE



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National Oceanic and Atmospheric Administration

U.S. Fish and Wildlife Service

State of Delaware – Department of Natural Resources and Environmental Control



TABLE OF CONTENTS

1.	Introduction.....	3
	1.1. The Army Creek Superfund Site.....	3
	1.2. Natural Resource Trustees.....	5
	1.3. Army Creek Settlement and Restoration Plan.....	5
2.	Purpose and Need for Action	6
3.	Public Involvement	7
4.	Administrative Record	7
5.	Alternatives Considered	7
	5.1. Criteria for Identifying Potential Projects	7
	5.2. Alternatives Considered but Eliminated.....	8
	5.3. Proposed Alternative	10
	5.4. No Action/Natural Recovery Alternative.....	12
	5.5. Preferred Alternative	12
6.	Compliance with the National Environmental Policy Act	13
	6.1. Requirements for Analysis under NEPA.....	14
	6.2. NOAA Restoration Center Programmatic EIS.....	14
	6.3. Affected Environment	15
	6.4. Evaluation of Preferred Alternative Relative to RC PEIS	18
	6.5. Impacts Analysis for Preferred Alternative	18
	6.6. Evaluation of No Action Alternative.....	19
	6.7. Impacts when Combined with Past, Present, and Reasonably Foreseeable Future Actions.....	19
	6.8. NEPA Conclusion	20
7.	Conclusions.....	20
8.	Compliance with other Environmental Laws and Regulations.....	21
9.	Request for More Information	21
10.	References.....	21
11.	Responsiveness to Comments Summary.....	22
	Appendix A: Comment Letters and Trustee Response.....	23
	Appendix B: NOAA Restoration Center NEPA Inclusion Analysis	31

1. Introduction

1.1. The Army Creek Superfund Site

The Army Creek Superfund Site is located in New Castle County, Delaware (Figure 1). The 60-acre site was a former sand and gravel pit which was operated during the 1960s by New Castle County as a landfill for municipal and industrial wastes. Contaminants leaching from the landfill were discovered in nearby private drinking water wells in 1972. In 1973 the County installed a recovery well system which effectively prevented the contaminated groundwater from migrating to nearby public water supply wells. This removed the immediate threat to human health presented by the site. However, the recovered groundwater was discharged, without treatment, directly into Army Creek which forms the lower limits of the landfill area (Figure 1).

Army Creek, a tributary of the Delaware River, is about 3.9 miles long. Its drainage is approximately 6.7 square miles. The upper 2.9 miles of the creek, including a three-acre pond, contains freshwater. The salinity of the lower one mile of the creek, including a 225-acre emergent wetland, ranges from fresh to slightly oligohaline. A tidegate at the mouth of Army Creek limits exchange of water and biota from the Delaware River. The most recent Delaware Department of Transportation (DELDOT) inspection available publicly shows the road, bridge, and culvert structures are in good condition and functional, with a minor buildup of sedimentation in the area, with the current tidegate functioning as designed, allowing for unrestricted downstream flow only.

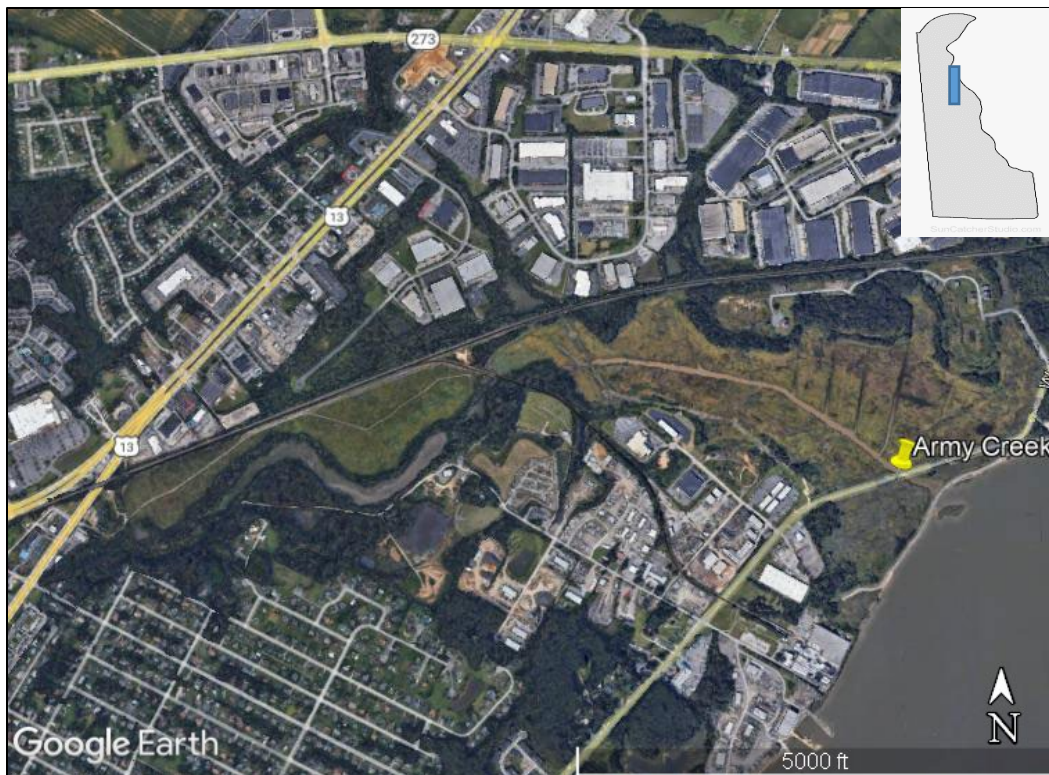


Figure 1. Army Creek watershed area, including location of originally proposed tidegate modification.

The landfill was placed on the National Priorities List in 1983. A remedial investigation/feasibility study (RI/FS) was completed in 1985, and a Record of Decision (ROD) was issued by the U.S. Environmental Protection Agency (EPA) in 1986. The remedy selected in the ROD consisted of covering the landfill with an impermeable membrane/sol cap system to prevent precipitation from leaching through the waste and into the groundwater, plus continued operation of the recovery well system. A second RI/FS and ROD in 1990 determined that treatment was required for the recovery well discharges primarily because iron concentrations were greater than the criterion for the protection of aquatic life. The landfill cap was completed in December 1993, and the water treatment facility was completed in January 1994.

In February 1990, representatives of EPA, the State of Delaware and the settling potentially responsible parties (PRPs) reached an agreement with regard to the PRPs liability for response costs at the Army Creek Superfund Site. The PRPs requested that the Natural Resource Trustees (the National Oceanic and Atmospheric Administration, the U.S. Fish and Wildlife Service and the Delaware Department of Natural Resources and Environmental Control) grant a covenant not to sue for natural resource damages associated with the Army Creek site. At that time, the Trustees entered into negotiations with the PRPs. Based upon a review of the litigation risks associated with the Trustees' claims for natural resource damages, EPA's proposed remedial activities at the Army Creek site, a review of the past and residual injuries associated with the resources at the site and a review of the loss of these resources, the Trustees agreed to settle their claims for monetary damages from the PRPs to be used by the Trustees to restore, replace, or acquire the equivalent of the injured natural resources. The proposal provided for on-site restoration actions, off-site habitat development and a monetary settlement for injuries associated with groundwater as reasonable compensation for losses to public trust resources.

On September 18, 1990, 18 PRPs entered into a Consent Decree to implement clean-up actions and reimburse the EPA for past response costs. The Consent Decree also required the PRPs to deposit \$800,000 into a trust fund of which \$200,000 was to be used solely by the State of Delaware for groundwater protection and restoration and \$600,000 was to be used for habitat restoration by the Trustees. The original Restoration Plan (<https://www.gc.noaa.gov/gc-rp/rp-army1.pdf>) for the Army Creek Superfund Site (RP) was finalized in 1995 and addressed only habitat restoration; this Final Amendment to the 1995 Final RP (Final Amendment) also only addresses habitat restoration.

As noted above, a tidegate at the mouth of Army Creek limits exchanges of water and biota between the Delaware River and Army Creek. The tidegate was originally replaced in 1986 to prevent flooding of Route 9 and lands adjacent to the marsh. The tidegate consists of five one-way flap gates, each 48 inches in diameter, that prohibit tidal inflow and allow outflow of accumulated upland runoff when hydraulic head, in relation to the tide, is sufficient to open the flap gates. As the Trustees completed initial planning and analysis to implement the restoration project selected in the Final Restoration Plan (replacement of the 1986 one-way flap gates in order to permit tidal inflow at Army Creek), it became apparent that removal of the tidegate could not be accomplished

without significant risk of regular flooding to Route 9, which would leave this highly relied upon transit corridor impassable, and potentially damage and undermine the roadway in the long term.

The Trustees chose to delay implementing the restoration project at Army Creek in order to coordinate its timing with a potential future elevation of the Route 9 roadway. An increased roadbed height would eliminate the flood risk posed by the Army Creek restoration project, but the Route 9 alteration has not been implemented. In recent coordination, state representatives advised that elevation of the Route 9 roadbed is not in the current 20-year road maintenance plan. Since an extended period of time has passed, and the original benefits planned for project implementation at Army Creek Marsh cannot be realized without the attendant risk of flooding portions of Route 9, the Trustees have elected to pursue an alternative restoration project—this alternative is described and evaluated in this Final Amendment.

1.2. Natural Resource Trustees

The natural resources trustees for the Army Creek Superfund Site include the following federal and state agencies: the National Oceanic and Atmospheric Administration (NOAA) on behalf of the U. S. Department of Commerce, the United States Fish and Wildlife Service (USFWS) on behalf of the U.S. Department of the Interior (DOI), and the Delaware Department of Natural Resources and Environmental Control (DNREC) on behalf of the State of Delaware (collectively, the Trustees). The goal of the Trustees was to restore, replace or acquire the equivalent quantity and quality of habitat and biodiversity of the upland and wetland habitats within the Army Creek watershed injured by hazardous substances and remedial activity at the landfill. Once this Assessment was undertaken, the Trustees examined restoration options in the Restoration Plan.

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, (42 U.S.C. 9601 et seq., CERCLA) and applicable regulations (43 C.F.R. Part 11) provide federal and state natural resource trustees with authority to seek damages for injury to, destruction of, or loss of natural resources resulting from releases of hazardous substances.

The natural resources of concern associated with the Army Creek Superfund Site, which were identified by the Trustees according to their respective legal authorities, include migratory and other bird species; anadromous and other fish species; the upland, aquatic and wetland habitats utilized by those species (Army Creek, pond and marsh and the existing landfill habitat); and groundwater.

1.3. Army Creek Superfund Site Settlement and Restoration Plan

To comply with the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 *et seq.*, the Trustees prepared an Environmental Assessment (EA) for the proposed restoration in the Final Restoration Plan (see Appendix A in “1995 Final Restoration Plan”) and that EA is incorporated herein by reference. In the EA, the Trustees identified and considered the following three alternatives: (1) taking No Action, (2) restoration of

natural resources at one or more sites outside the Army Creek watershed which contain resources equivalent to those injured or destroyed at the site, and (3) rehabilitation and replacement of wetland and upland habitats in the watershed of Army Creek, including the headwaters of Army Creek, Army Creek Pond adjacent to the Army Creek Superfund Site, and Lower Army Creek and marsh. The restoration alternative selected by the Trustees in the 1995 Final Restoration Plan was to rehabilitate Lower Army Creek and marsh by increasing the quality and quantity of wetland and upland habitat within the Army Creek watershed. The EA noted, however, that off-site upland acreage would be sought if acreage within the watershed was not sufficient. Specific actions for this proposal were further identified in the Restoration Plan, which was subject to public review and comment. NOAA signed a Finding of No Significant Impact (FONSI) for the proposed restoration on September 8, 1995.

As discussed in the 1995 Final Restoration Plan, Army Creek Marsh was to be enhanced by restoring tidal influence and migratory fish access to Army Creek habitats upstream of Route 9. The action would have restored the role of the marsh as a nursery for migratory fish, improved waterbird habitat, and improved biological control of mosquitoes in the marsh. The plan included replacement of the existing tidegate just downstream of the Route 9 bridge over Army Creek, and a vegetation management plan for elimination or control of *Phragmites* spp. in Army Creek Marsh. The 1995 Final Restoration Plan also proposed to increase the quality of upland habitat within the Army Creek watershed.

2. Purpose and Need for Action

The purpose of the restoration proposed in this Final Amendment, as in the 1995 Final Restoration Plan, is to make the environment and the public whole for injuries resulting from the release, and resulting impacts, by implementing restoration actions that restore and compensate for injured natural resources and services. The ecological restoration to restore tidal exchange to Lower Army Creek that the Trustees selected in the original RP (the 1995 Final RP), which was to include wetlands, riparian and uplands habitat amongst its components, was not able to be implemented, as described above.

The Trustees for the Army Creek Superfund Site have determined that the restoration alternative selected in the 1995 Final RP is not feasible, since the major component of the overall project (the wetlands that would benefit from the tidegate removal) cannot occur without causing current infrastructure impacts. The Trustees, therefore, must consider other restoration alternatives to restore for natural resource injuries caused by the release of hazardous substances from the Army Creek landfill. The Trustees propose to amend the 1995 Final RP, replacing the proposed restoration of degraded marshes at Army Creek with a suitable and comparable tidal reconnection and wetlands restoration alternative that also includes riparian and upland habitat, albeit as a lesser component than the originally proposed project at Army Creek.

3. Public Involvement

The Draft Amendment to the 1995 Final Restoration Plan was released and circulated for public comment by the Trustees through a NOAA web-based posting for a 45-day

comment period beginning on April 5, 2023. The Trustees received two comment letters on the Draft Amendment, which are included in the Appendix A of this Final Amendment, along with the Trustees response to those comments. The Trustees also held a public meeting on October 23, 2024, based on a request made during the earlier public comment period, and allowed an additional 30 days after that for submittal of comments. There were no substantive changes made to the Final Amendment based on the public comments and the Trustees' evaluation of those comments.¹

This Final Amendment provides the public with information on the Trustees' restoration planning previously completed, the Trustees' restoration objectives, the restoration alternatives considered, and the preferred restoration selected for implementation. This Final Amendment to the 1995 Final Restoration Plan is being released by the Trustees electronically and through a NOAA web-based posting (<https://darrp.noaa.gov/>).

4. Administrative Record

This document will be retained in the formal administrative record for the case, which currently resides with the NOAA Restoration Center, at National Oceanic and Atmospheric Administration – National Marine Fisheries Service, 200 Harry S. Truman Parkway, Annapolis, Maryland 21401, and can also be located within the online administrative record at (<https://www.diver.orr.noaa.gov/web/guest/diver-admin-record/6702>).

5. Alternatives Considered by the Amendment to the Final Restoration Plan

5.1. Criteria for Identifying and Evaluating Additional Potential Restoration Projects

In the 1995 Final RP, the Trustees sought to use damages recovered for injuries caused by the contamination from the site for restoration within the Army Creek watershed including: restoring tidal influence to Army Creek Marsh; managing tidal exchange to provide optimum marsh water levels that promote use of Army Creek Marsh by migratory resident species of fish and waterbirds; acquiring easements or purchasing upland habitat adjacent to the site, within or along the edge of Army Creek Marsh, or within the Army Creek watershed along Delaware Bay; and providing a more diverse marsh plant community that offers food, shelter, and resting habitats for fish and wildlife.

In seeking to identify and evaluate alternatives in this Final Amendment, the trustees sought to identify similar types of restoration projects with comparable benefits (habitat type and resource goals) to the original restoration project not implemented, to the extent practicable (i.e., in-kind and in-place).

¹ In light of the Council on Environmental Quality's (CEQ) Interim Final Rule, "Removal of National Environmental Policy Act Implementing Regulations" (effective April 11, 2025), all references to the CEQ NEPA regulations that were included in the Draft Amendment have been removed from this Final Amendment.

In the 1995 EA completed for the Army Creek site, the Trustees noted at the time (in section 5.1.2 of the EA) that restoration actions outside the watershed would provide enhancement of existing wildlife management or natural areas with effects similar to those for restoration actions within the watershed. The EA also recognized that off-site restoration would not benefit the Army Creek watershed because it would occur in a different location.

5.2. Alternatives Considered but Eliminated

Army Creek Wetlands - Wetlands Restoration

The Trustees re-evaluated the original preferred alternative to remove the tidegate at the mouth of Army Creek which limits exchanges of water and biota between the Delaware River and Army Creek. The tidegate, last replaced in 1986, prevents flooding of Route 9 by not allowing tidal flows into Army Creek, but as noted earlier, removal of the tidegate cannot be accomplished without significant risk of regular flooding to Route 9, which would leave this highly relied upon transit corridor impassable, and potentially damage and undermine it in the long run. Additionally, there are no current plans to elevate the existing Route 9 roadway, so this option remains infeasible without significant unacceptable impacts.

Any additional restoration alternatives within the Army Creek site that would provide similar wetland restoration benefits as the 1995 proposal would require tidal flow into the system, presenting the same risk of flooding damage, and as a result were not considered by the Trustees for the RP Amendment. As a result, all of the alternatives considered by the RP Amendment were sited outside the Army Creek watershed. Also, to avoid disrupting the landfill capping that occurred during the remediation, the Trustees are no longer pursuing an upland component located in Army Creek.

Fort Dupont Hybrid Living Shoreline Project

Conceptual plans exist for a proposed shoreline project along the Delaware Bay proper at Fort DuPont State Park in Delaware City just north of Reedy Point. This high energy (due to main bay exposure, long fetch, and high tide range) shoreline area of the park has undergone some restoration work in the past, with plans to build a dike and living shoreline in addition to the revetment that is already in place.

The Trustees considered restoration at this site, but determined there were significant risks to maintaining long-term habitat gains from a restoration project. Primary concerns centered on future sea-level rise impacting any nearshore constructed wetlands, in addition to the high wave energy and high erosion rates already present. The need to protect culturally important park components would likely require a significant berm landward of any shoreline project, limiting the short and long-term viability of the site to allow for migration and adaptation to sea level rise. Additionally, given the high energy and likely living shoreline costs well in excess of \$1,000 per linear foot, the Trustees

were not confident that a project could be scaled to provide protection for a significant reach of the park site, given available settlement funds.

Grassdale (part of Fort DuPont State Park)

Grassdale is the wetland component that makes up the western edge of the Fort DuPont site along the Chesapeake and Delaware Canal in Delaware City. The site of a former horse track facility, the area has been proposed for comprehensive wetlands restoration over the years, including extensive channel restoration, site elevation re-contouring, and wetland habitat improvements.

The site does have vulnerable tidal wetlands subject to periodic and increasing flooding, and proposed channeling and other site restoration could provide an ecological uplift to the site. At this time, however, there exists no comprehensive plan for the site, and restoration costs are anticipated to greatly exceed available funds from the Army Creek settlement. Additionally, during the alternatives analysis, it was learned that this portion of the park also might be considered for future privatization and/or development as a campground, which could require additional future actions such as covenants and restrictions so as to protect any Trustee investment made on site. Otherwise, the restoration project and associated benefits would be at risk of being reduced or eliminated.

Brandywine Dams

There are a number of dams along Brandywine Creek in Wilmington and further upstream that have been considered for removal or modification in order to attempt to restore historical runs of anadromous fish to the river. The removals or provisions of fish passage would provide access to historical riverine habitat for American shad, blueback herring, and alewives, along with white perch, American eel and resident fish. Numerous studies have estimated the anticipated increase in fish abundance that could be expected from incremental improvements in passage and access along the creek.

Dam 1 has been recently removed, and studies and plans are underway (with a commitment in place) to facilitate passage at Dam 2. Above Dam #2, there are an additional 9 dams over the next 4.3 miles, but the next dam above (Dam #3 located about 0.5 miles upstream) is already breached. Dam #3 has unclear ownership, and is 3-feet high by 135-feet long. Dam #4, located an additional 0.25 miles above that, is 4-feet high and 150-feet long, and owned by the state. It has a fish ladder that was installed in the 1970s, but is currently non-functional and would need study and refurbishment to potentially pass fish. Dams further up the creek will have additional challenges to address since they also provide historic context to the river and local area, and some are federally listed historic properties.

Access to habitat above Dam #2 would open up 0.7 miles of river access in the Brandywine, and based on fish production estimates would have a shad production

potential of about 300 fish in the reach immediately above Dam #2, and potentially up to a total of 1,000 fish with the addition of the accessible reach above the breached Dam #3.

The Trustees analysis concluded that while fish habitat gains in Brandywine Creek are an important effort, the habitat type impacted at the Army Creek site was more directly associated with tidal wetlands versus riverine habitat access.

Christina River Living Shoreline

A living shoreline demonstration project has been proposed at the site of the Kalmar Nyckel Foundation, located about 2 miles up from the mouth of the Christina River in Wilmington (New Castle County) on the north side of the river. The state has previously obtained a proposal to do design and permitting for the site. The site is city owned, and contains about 200 feet of frontage that could be initially restored. Additional parcels or easements on adjacent parcels may be available. Fort Christina, located upriver, is a National Park Service site.

While the habitat that would be provided by a potential living shoreline project would generally be consistent with that injured at the Army Creek site, the relatively small scale of the site, the highly urbanized location, and the uncertainty of the ability to aggregate the project with adjacent sites under federal control for historical protection led the Trustees to conclude that this proposed project would not provide the desired scale of ecological gains.

5.3. Proposed Alternative

Pickering Beach Marsh Tidal Wetlands Restoration Project

The primary goal of this project is to restore hydrology to approximately 175 acres of wetlands north of Pickering Beach Road, near Dover, Delaware (see Figure 2). Currently this area lacks daily tidal exchange. Historical inlets to the Delaware Bay no longer exist on the eastern portion of the marsh, while the remainder of the marsh is bound by existing roads and an impoundment dike at the north, west, and southern boundaries of the marsh. The proposed project involves the restoration of a previously existing north to south ditch of approximately 1.3 miles running from the Little Creek Main Impoundment at the north to the existing Lewis Ditch at the south, by excavating the channel to widen and deepen it and enhance tidal flow and volume. The crossing of Pickering Beach Road would involve replacement of existing undersized culverts with appropriately sized culverts at the correct elevation to maximize tidal flow, and result in restoration of associated riparian and upland habitat.

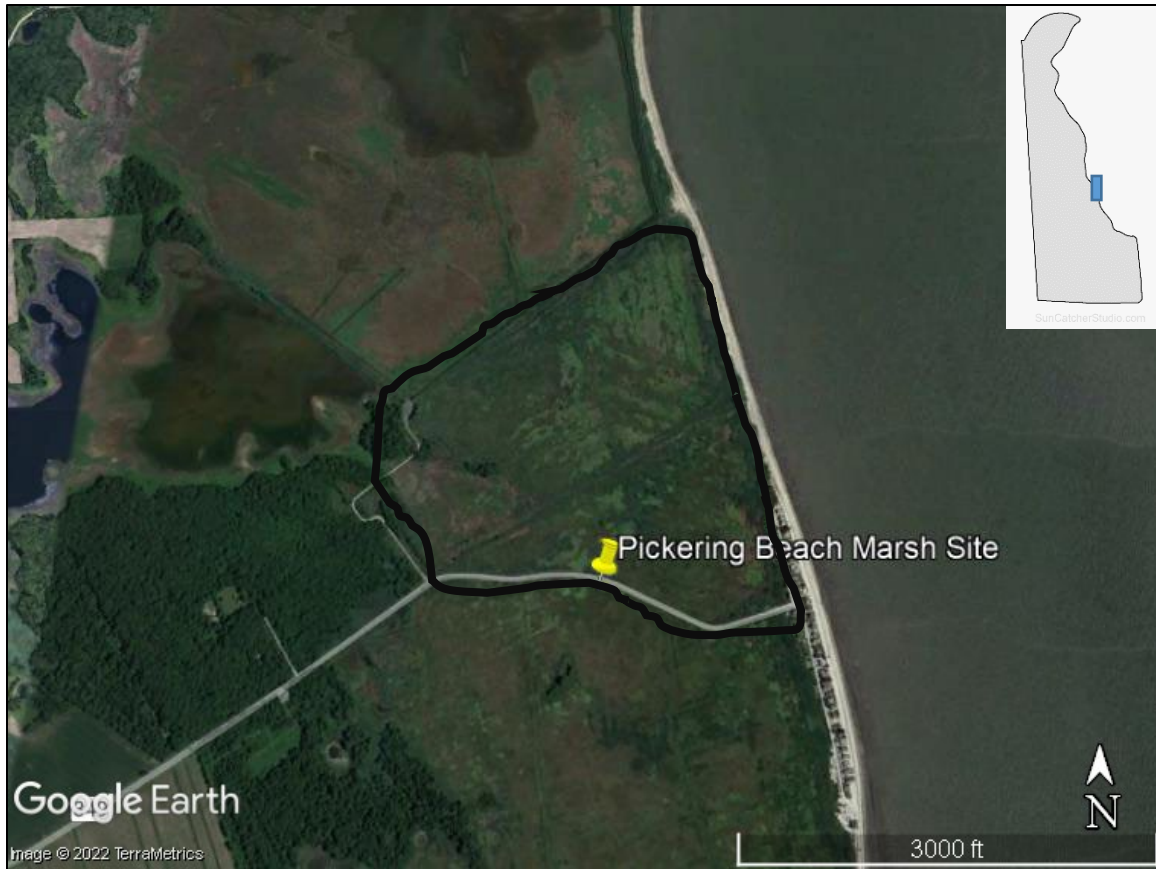


Figure 2. Pickering Beach Marsh proposed restoration site. Site pin shows the crossing at Pickering Beach Road, and the outlined area shows the general area that will have tidal hydrology restored.

A second component of this project would involve the replacement of a non-functioning water control structure located along the southern dike of the Little Creek Main Impoundment adjacent to the Pickering Marsh. Due to limited flow through the Pickering Marsh, this secondary water control structure on the impoundment has not been used and is currently in need of replacement. A functioning structure at this location would allow for tidal flow through the impoundment during portions of the year that the marsh would be used by estuarine fish, serving as a benefit to fisheries in addition to improving the health of the impounded wetland habitat to the benefit of an abundance of wildlife utilizing the area. The impoundment would be seasonally managed for winter waterfowl use consistent with state operations and management goals. Riparian and upland habitat immediately surrounding the impoundment would also be enhanced.

The proposed project will provide and restore wetland habitat (tidal wetland and channel restoration) and restore tidal exchange to those wetlands, which were desired outcomes of the initial NRDA restoration proposed for the Army Creek Superfund Site. The proposed project (175 acres) is also nearly the size of the originally envisioned scale of the Army Creek wetlands restoration (200 acres). Subject to the final design for the proposed project, a substantial amount of existing uplands would also be enhanced by tidal floodplain reconnection. The proportion of riparian and upland habitat within the

proposed Pickering Marsh project area would differ from the original Army Creek project.

The Trustees estimate that the project will cost approximately \$900,000. The funds received for Army Creek habitat restoration (originally \$600,000, but with interest now total ~\$930,000) are sufficient to cover the cost of the proposed project, including survey, design, permitting, construction, and monitoring. A detailed cost estimate has not yet been developed, but excess funds are not anticipated after the proposed project has been implemented.

5.4. No Action/Natural Recovery Alternative

The CERCLA regulations require consideration of a no action-natural recovery alternative (43 C.F.R. §11.82(c)(2)). Under this alternative, the Trustees would take no direct action to restore injured natural resources or compensate for lost services pending environmental recovery. Instead, the Trustees would rely on natural processes for recovery of the injured natural resources. While natural recovery would occur over varying time scales for the injured resources, the interim losses suffered would not be compensated under the no action alternative.

The principal advantages of this approach are the ease of implementation and low cost. This approach relies on the capacity of ecosystems to “self-heal”. CERCLA, however, clearly establishes Trustee responsibility to seek compensation for interim losses pending recovery of the natural resources. This responsibility cannot be addressed through a no action alternative. While the Trustees have determined that natural recovery is appropriate as primary restoration for injuries resulting from this incident, the no action alternative is rejected for compensatory restoration. Technically feasible and cost-effective alternatives exist to compensate for these losses.

The no action/natural recovery alternative would not result in impacts to the physical, biological, and cultural/human use environment since no restoration actions would be undertaken. However, the benefits from hydrologic and wetland restoration would not be fully achieved and the public would not be fully compensated for these losses resulting from the release of contaminants.

5.5. Preferred Alternative

After considering multiple alternatives, the Trustees select the Pickering Beach Marsh Tidal Wetland Restoration project as the preferred alternative to restore for natural resource injury of the type associated with the Army Creek Superfund Site. The Pickering project would be a cost-effective project that yields comparable benefits to the unimplemented original marsh restoration project proposed for the Army Creek site in the 1995 Final Restoration Plan. The trustees recognize that while the proposed Pickering Beach Marsh Tidal Wetland Restoration project does not have a direct spatial nexus to the Army Creek Superfund Site, the proposed action will provide the same types of habitat restoration that were envisioned for the Army Creek Marsh restoration project

(e.g., tidal wetland and channel restoration; and restoring tidal influence and managing tidal exchange) and will restore the same resource types that were injured at the site (migratory birds, anadromous and other fish, and the aquatic and wetland habitat utilized by those species). For these reasons, the Pickering project is also generally consistent with the alternatives identification and evaluation criteria described in section 5 above and in the Final RP.

The proposed habitat restoration at the Pickering Beach Marsh Tidal Wetlands Restoration project meets the restoration goal of restoring the type of lost natural resources impacted by contaminant releases from the Army Creek Superfund Site and the Trustees select it as the preferred restoration alternative.

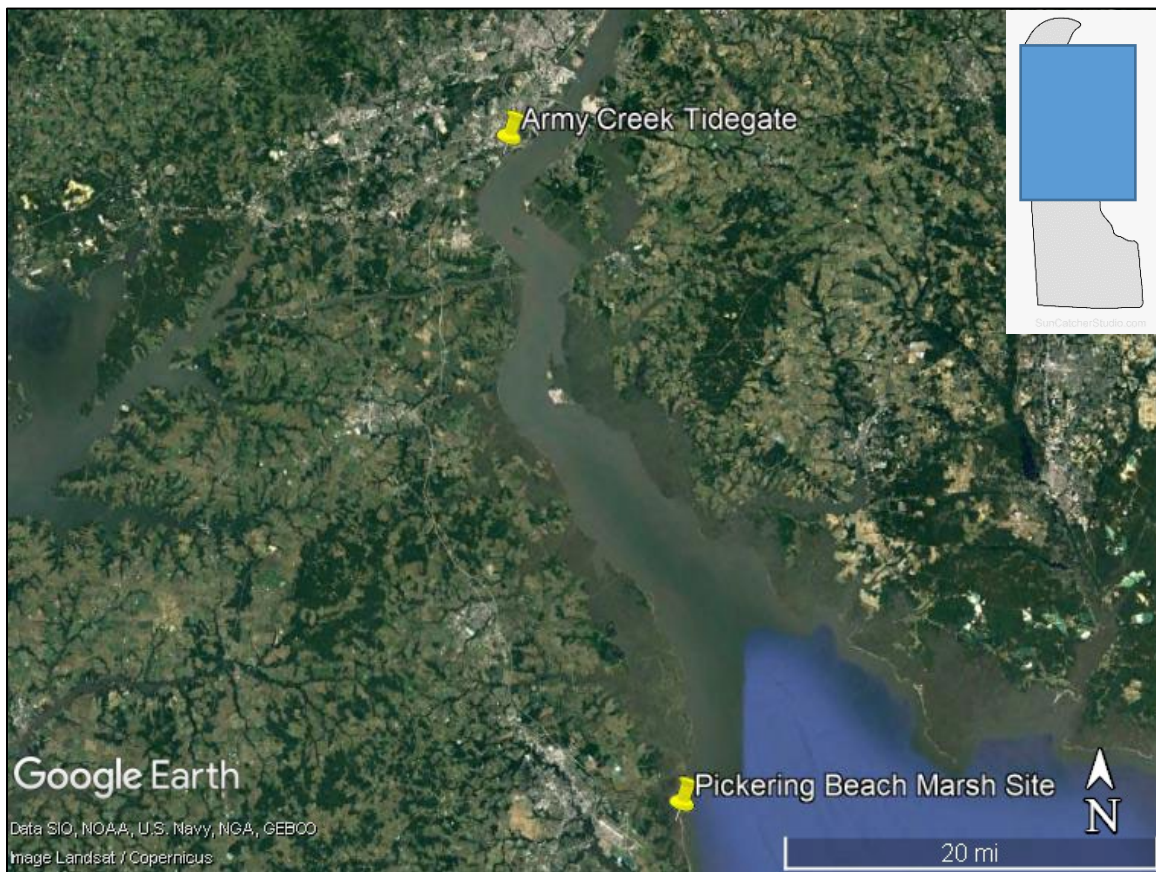


Figure 3. Location of originally proposed Army Creek tidegate site for restoration and now proposed Pickering Beach Marsh restoration site. Distance between two sites is approximately 36 miles.

6. Compliance with the National Environmental Policy Act

Actions undertaken by federal trustees to restore natural resources or services under CERCLA and other federal laws are subject to the National Environmental Policy Act, (NEPA), 42 U.S.C. § 4321 *et seq.* The original Army Creek Superfund Site Final RP included an integrated EA that analyzed the potential environmental impacts of the Army Creek Marsh project. Because the Trustees are proposing a new restoration action that

was not included in the Final RP, a new NEPA evaluation is needed to assess the impacts associated with the Pickering Beach Marsh Tidal Wetland Restoration project. The proposed approach to NEPA compliance for the project is discussed below.

6.1 Requirements for Analysis under NEPA

Under NEPA, federal agencies must evaluate potential impacts to the environment from their proposed actions and reasonable alternatives. If impacts are potentially significant an environmental impact statement (EIS) is required, but if impacts are either unclear or considered not significant, an environmental assessment (EA) may be prepared. Additionally, some types of actions may qualify for a Categorical Exclusion (CE), or otherwise not be subject to NEPA. NOAA is acting as the lead federal agency for NEPA compliance for this Final Amendment.

NEPA allows for broad programmatic analyses that subsequently can be used to meet NEPA requirements for project-level actions through incorporation by reference and “tiering.” This process is discussed further in section 6.2 below. The NEPA process ensures that public decision-makers are fully informed about the potential impacts of the proposed actions and alternatives. For this Final Amendment, the federal trustees propose to satisfy their NEPA obligations by applying the impacts analysis and conclusions drawn in another, previously published programmatic NEPA document—NOAA’s Restoration Center Programmatic EIS (RC PEIS). In particular, the Trustees have determined that the RC PEIS fully covers the scope of the proposed action and all environmental impacts, and a separate NEPA analysis and decision document is not needed. This determination has been documented in sections 6.4 - 6.7 below, and in a NEPA “Inclusion Analysis” (Appendix B).

6.2 NOAA Restoration Center Programmatic EIS

After decades of experience evaluating and implementing environmental restoration projects, NOAA’s Restoration Center (RC) has determined that many of its efforts involve similar types of activities with similar environmental impacts. To increase efficiency in conducting future NEPA analyses for a large suite of habitat restoration actions, the RC developed the “Programmatic Environmental Impact Statement for habitat restoration activities implemented throughout the coastal United States” (RC PEIS) in 2015.² After a public comment period, NOAA’s Record of Decision was signed on July 20, 2015. USFWS documented their adoption of the RC PEIS with a Record of Decision, dated August 20, 2019 (84 Federal Register 45515). The RC PEIS is available at the following link: <https://www.fisheries.noaa.gov/resource/document/restoration-center-programmatic-environmental-impact-statement>

The RC PEIS provides a program-level environmental analysis of NOAA’s habitat restoration activities throughout the coastal and marine environment of the United States.

² Consistent with the requirements of the Fiscal Responsibility Act of 2023 (42 U.S.C. § 4336b), the analysis and underlying assumptions in the RC PEIS were reviewed, and it was determined they remain valid and are relevant to the proposed action.

Specifically, it evaluates typical impacts related to a large suite of projects undertaken frequently by the RC, including, but not limited to: Coral Reef Restoration; Debris Removal; Beach and Dune Restoration; Signage and Access Management; Fish Passage; Fish, Wildlife, and Vegetation Management; Levee and Culvert Removal, Modification, and Set-Back; Shellfish Reef Restoration; Subtidal Planting; Wetland Restoration; Freshwater Stream Restoration; and Conservation Transactions. These analyses may be incorporated by reference in subsequent NEPA documents, where applicable. For example, a site-specific NEPA document may evaluate a restoration project where all potential impacts were addressed in the RC PEIS. In that instance, the site-specific NEPA document would, in effect, incorporate by reference the full impacts analysis from the RC PEIS. In those cases where the RC PEIS determined none of the potential impacts would be significant, the site-specific NEPA document could incorporate that conclusion by reference as well. In short, no further NEPA analysis may be necessary so long as the proposed activity is within the range of alternatives and scope of potential environmental consequences analyzed in the RC PEIS and would not cause significant adverse impacts. Conversely, if the site-specific restoration activity is not within the scope of alternatives or environmental consequences considered in the RC PEIS, it will require additional analysis through preparation of a new NEPA document.

The environmental impacts from the types of restoration actions proposed in this Final Amendment have been analyzed in the RC PEIS, specifically in section 4.5.2 (Riverine and Coastal Habitat Restoration). Those general analyses are incorporated here by reference and are summarized in the NEPA Inclusion Analysis (Appendix B), as discussed in section 6.5 below. The Trustees have determined that the RC PEIS fully covers the scope of the proposed action and all environmental impacts, and a separate NEPA analysis and decision document is not needed.

6.3 Affected Environment

This section provides a general description of the affected environment, and related resources, as they relate to the geographic area that may be affected by the restoration alternatives considered in this Final Amendment. A detailed description of the natural resources and socioeconomics of New Castle County is provided in the EA (section 4.0 Affected Environment), and that information is incorporated here by reference.

While coastal habitats are dynamic and highly variable environments, they do share certain qualities that are somewhat universal. This Final Amendment incorporates by reference and briefly summarizes the affected environment description of tidal wetlands and river channels in the RC PEIS (section 3.1.1 “Wetlands”; section 3.1.1.1 “Tidal Wetlands”; section 3.1.3 “Stream and River Channels”).

The Trustees have made the determination that the RC PEIS contains an applicable description of the affected environment generally associated with the restoration project types described in this Final Amendment.

Wetlands

Wetlands provide numerous beneficial ecological functions, including protection of shorelines from waves and storm surges, erosion control and buffering, carbon sequestration and storage, water storage, maintenance of water quality, removal of sediments, groundwater recharge, nutrient and pollution filtering, spawning and nursing areas for many fish species, and food and habitat for numerous species of aquatic and terrestrial plants and animals. Wetlands are among the most productive ecosystems in the world, supporting thousands of species of plants, animals, shellfish, finfish, birds, invertebrates, and microbes (NMFS 2004). Wetlands also provide important recreational and economic benefits for humans, such as opportunities for boating, fishing, hiking, waterfowl hunting, nature observation, and photography, among many others.

Wetland resources are found throughout the area potentially affected by NOAA-supported projects, including all regions and many areas along coastlines, rivers, streams, estuaries, and other water bodies or receiving areas. A wide variety of wetlands occur in the potentially affected area covered by the RC PEIS, including tidal and nontidal wetlands.

Tidal Wetlands

Tidal wetlands include salt, brackish, and fresh tidal marshes that are transitional habitats between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water tidally or seasonally (Thayer et al. 2003). Marshes occur on all coasts of the United States, in every region under NOAA jurisdiction. Most marine fish depend on the resources of tidal wetlands during some part of the life cycle. Marsh ecosystems, like all wetlands, are a function of hydrology, soil, and biota. Salt marshes exist on the transition zone between the land and the sea in protected low-energy areas such as estuaries, lagoons, bays, and river mouths (Copeland 1998). Tidal cycles allow salty and brackish water to inundate and drain the salt marsh, circulating organic and inorganic nutrients throughout the marsh. The marshes are strongly influenced by tidal flushing and stream flow, which affect the inundation and salinity regimes of salt marsh soils. In areas with enough freshwater input, salt marshes transition into brackish and freshwater marshes (Copeland 1998). Sand and mudflats occur throughout the tidal spectrum, whereas salt marsh vegetation develops where the soils are more exposed to the air than inundated by tides, usually above mean sea level.

Salt marshes are of paramount ecological importance because they 1) export vital nutrients to adjacent waters, 2) improve water quality through the removal and recycling of inorganic nutrients, 3) absorb wave energy from storms and act as a water reservoir to reduce damage further inland, and 4) serve an important role in nitrogen and sulfur cycling (Mitsch and Gosselink 1993) and in carbon sequestration and storage (McLeod et al. 2011).

Sand and mudflats occur throughout the tidal spectrum, whereas salt marsh vegetation develops where the soils are more exposed to the air than inundated by tides, usually above mean sea level. Salt marshes provide important habitat for invertebrates (such as crabs and bivalves) and fishes. Vital nutrient exchange takes place in salt marshes, as the detritus and algae in the marshes are consumed and nutrients excreted by birds, fish, and shellfish are recycled by the flora (Zedler 1992). Salt marshes, along with mangroves and seagrasses, are very productive ecosystems that also store and sequester substantial amounts of carbon belowground in soils at very high rates.

Brackish marshes are found in embayments and tidally influenced rivers where marine water is diluted with freshwater. Brackish water typically has a salinity of 0.5 to 35 parts per thousand; the salt content of soil in brackish marshes ranges from 0.5 to 18 parts per thousand. Species composition changes with salinity and water content. Fresh tidal marshes are found in areas where the tide rises and falls but the waters have no detectable salt content. Fresh tidal marshes feature the greatest diversity of tidal wetlands and support a larger number of plants than salt and brackish marshes.

Stream and River Channels

Tidal and nontidal stream and river systems are located in every region of the U.S. where NOAA and its co-trustees implement restoration. Many rivers and streams along the coast are tidal, with the effects of ocean tides extending upstream. The channel of a stream or river is the portion of the cross section that is usually submerged and totally aquatic. Channel substrates may be composed of various materials, including cobbles, boulders, sand, clay, and silt. Portions of a river channel often contain biological elements such as oyster reefs or submerged aquatic vegetation beds that help shape or define the channel.

Stream and river channels are critical to the viability of living coastal and marine resources. In addition to providing freshwater, rivers and streams transport nutrients and provide habitat for thousands of aquatic and terrestrial species, including birds, shellfish, finfish, amphibians, reptiles, mammals, plants, and invertebrates. Vegetation that grows along the banks of rivers and streams stabilizes the banks, shades the water, and provides cover and food for animals and nutrients for the ecosystem (e.g., from fallen leaves).

The integrity of stream and river channels is important to the viability of not only the streams and rivers themselves, but also to the estuaries, oceans, marshes, and wetlands connected to them. Processes such as accelerated channel erosion, pollution, diking, damming, channel alteration, scouring, and dumping can drastically affect the rivers and streams and their receiving waters by causing accelerated sedimentation, and alteration of temperature and water quality, among other factors.

Riparian/Upland habitats

Riparian zones are defined as the land immediately adjacent to a stream or a river, providing a form of wetland transition composed of multiple habitats located between

permanently saturated wetland and associated upland habitats. Riparian areas are commonly characterized by bottomland hardwood and floodplain forests in the East and as bosque (dense growth of trees and underbrush) or streambank vegetation in the West. Riparian environments are maintained by high water tables and experience seasonal or periodic flooding. Riparian zones contain or adjoin riverine wetlands and share many functions, including water storage, sediment retention, and nutrient and contaminant removal, as well as habitat functions.

The riparian zone is a characteristic association of substrate, flora, and fauna within the floodplain of a stream or, if a floodplain is absent, a zone hydrologically influenced by a stream or river. Riparian environments are maintained by high water tables and experience seasonal or periodic flooding. The width and other characteristics of the riparian zone vary greatly between regions and locally between river and watershed size and stream order. They may also contain or adjoin riverine wetlands and share with them many functions, including surface and subsurface water storage, sediment retention, nutrient and contaminant removal, and maintenance of habitat for plants and animals. They often share some of the characteristics of wetlands but cannot be defined as wetlands because they are saturated at much lower frequencies. Riparian ecosystems have distinctive vegetation and soils, and are characterized by the combination of species diversity, density, and productivity. Continuous interactions occur between riparian, aquatic, and associated upland ecosystems through exchanges of energy, nutrients, and species.

6.4. Evaluation of Preferred Alternative Relative to the RC PEIS

As discussed above in section 5.5, the preferred alternative is comprised of tidal wetland habitat restoration within the larger Pickering Beach Marsh site, located in Little Creek, Delaware and draining into the Delaware Bay (Figure 2). Section 2.2.2 of the RC PEIS addresses “Riverine and Coastal Habitat Restoration” alternatives, including the types of restoration activities proposed in this Final Amendment. Specifically, the RC PEIS describes the actions associated with tidal channel restoration in section 2.2.2.5.1 (“Channel Restoration”) of that document. The RC PEIS also describes tidal wetland restoration actions associated with replacement of culverts and water control structures for the purposes of enhancing or restoring hydrologic connections in tidal or riverine systems (section 2.2.2.11.1 “Levee and Culvert Repair, Modification, and Set-Back”).

The Trustees have determined that the project activities that comprise the preferred alternative described in this Final Amendment fall within the scope of the “Riverine and Coastal Habitat” alternatives considered in the RC PEIS. Further, the restoration activities associated with the preferred alternative described in this Final Amendment are fully described in the appended NEPA Inclusion Analysis (Appendix B) under “Project Description/Scope of Activities.”

6.5. Impacts Analyzed for Preferred Alternative

The RC PEIS impacts analysis includes a description of the impacts associated with the types of restoration activities proposed in this Final Amendment. That information can

be found in section 4.0 of the RC PEIS (“Environmental Consequences”; also see Table 11 of the RC PEIS). The environmental consequences from activities related to tidal wetland and channel restoration are described in sections 4.5.2 (“Riverine and Coastal Habitat Restoration”) of the RC PEIS, and more specifically, in sections 4.5.2.5.1 (“Channel Restoration”) and 4.5.2.11.1 (“Levee and Culvert Removal, Modification, and Set-Back”). Also, see Tables 23 and 33 of the RC PEIS for a summary of these impacts. Direct, indirect, and cumulative impacts to relevant resources (e.g., geology and soils, water resources, living coastal and marine resources and EFH, threatened and endangered species, cultural and historic resources, land use and recreation, and socioeconomics) with the preferred alternative are also fully summarized in the NEPA Inclusion Analysis (“Project Impact Analysis – IV.4 and IV.5,” core questions 4 and 5) (Appendix B).

The Trustees have also determined that the preferred alternative would not have adverse impacts beyond the scope of those analyzed in the RC PEIS, or meet any other criteria for exclusion from analysis under the RC PEIS (refer to Table 10 of the RC PEIS).

Ultimately, the RC PEIS concludes that the anticipated impacts would not be significant, and the Trustees propose to adopt that conclusion and the analysis in this Final Amendment. A more detailed description of the Trustees’ justification for doing so can be found in the NEPA Inclusion Analysis (Appendix B).

6.6. Evaluation of the No Action Alternative

The Trustees evaluated the impacts of the no action alternative on relevant resources (e.g., geology and soils, water, air, living coastal and marine resources and Essential Fish Habitat, threatened and endangered species, cultural and historic resources, land use and recreation, and socioeconomics). As noted above, the no action alternative was a non-preferred alternative because it fails to compensate the public for losses associated with the Army Creek Superfund Site. However, NEPA mandates that federal agencies evaluate the environmental impacts of no action.

By definition, the no action alternative lacks physical interaction with the environment. Accordingly, the no action alternative would cause no direct impacts to any of the elements of the environment listed above. However, if the Trustees undertook no action, the environment would not benefit from the ecological uplift created by active restoration. Conversely, the active restoration with the proposed action would restore the types of resources and services that were injured by the Army Creek Superfund Site. The no action alternative would have either no effect or minor to moderate indirect adverse effects on the environment.

6.7. Impacts when Combined with Past, Present, and Reasonably Foreseeable Future Actions

As part of the analysis of reasonably foreseeable effects of the proposed alternatives, the Trustees also considered the incremental (cumulative) effects of the actions when

combined with other activities that have occurred, are occurring, and are likely to occur in the future (i.e., past, present, and reasonably foreseeable future actions).

Because the proposed restoration is restoring natural habitat structure and function, the Trustees expect that there will be long-term, minor to moderate positive cumulative effects on the biological and physical health of the project area under the preferred alternative. Cumulative impacts will not occur at a regional scale, and are consistent with those described in the RC PEIS (section 4.9, “Cumulative Impacts”). Relative to the magnitude of ecological impacts that currently exist in the area, the positive cumulative benefits of these proposed restoration actions are not expected to be significant as defined under NEPA. Cumulative impacts to relevant resources with the proposed action are also summarized in the NEPA Inclusion Analysis under “Project Impact Analysis – IV.5” (Appendix B).

Cumulatively, it is anticipated that there may be a long-term adverse effect to the physical and biological resources of the project area were the no action alternative selected because the restoration would not occur. However, relative to the magnitude of adverse ecological impacts that currently exist in the affected area, the adverse cumulative effect of the no action alternative is not expected to be significant as defined by NOAA.³

6.8. NEPA Conclusion

Based on the analysis in this Final Amendment, the Trustees have made the determination that the Pickering Beach Marsh Restoration alternative (preferred) is within the range of alternatives and scope of environmental consequences described in the RC PEIS and will not have significant adverse impacts. Moreover, the Trustees have fully considered and determined that there are no project- or site-specific conditions, sensitivities, unique habitats, or resources that warrant additional NEPA analyses beyond what is provided in the RC PEIS. As such, the Trustees will not be preparing any further NEPA analysis or seeking a new FONSI determination or ROD for the proposed restoration.

7. Conclusions

In conclusion, the Trustees are confident that the proposed restoration in this Final Amendment, the tidal wetland habitat restoration project at Pickering Beach Marsh (including the aquatic, riparian, and floodplain uplands), will be a cost-effective project that yields comparable benefits to the unimplemented original marsh restoration project proposed for the Army Creek site.

The proposed action can be implemented in compliance with all applicable federal, state and local permits and approvals, and associated state water quality certification. All

³ Companion Manual for NOAA Administrative Order 216-6A, “Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities.”

permits and environmental compliance would be obtained and satisfied prior to project implementation, as discussed in section 8 below.

8. Compliance with other Laws and Regulations

Individual permits will need to be issued for the proposed project under Section 404 of the Clean Water Act and in accordance with Section 10 of the Rivers and Harbors Act. With the consultation and coordination for that review once the proposed project is designed, the Trustee agencies will ensure consistency with the Coastal Zone Management Act, the Endangered Species Act, the Fish and Wildlife Coordination Act, the Magnuson-Stevens Act for Essential Fish Habitat, the Marine Mammal Protection Act, and the National Historic Preservation Act.

9. Request for Information

Requests for further information about this Final Amendment may be directed to Stephanie Westby, National Oceanic and Atmospheric Administration – National Marine Fisheries Service, 200 Harry S. Truman Parkway, Room 460, Annapolis, Maryland 21401 or stephanie.westby@noaa.gov.

10. References

Army Creek Natural Resources Trustees. 1995. Restoration Plan for Army Creek Landfill Settlement.

Copeland, B.J. 1998. Salt marsh restoration: coastal habitat enhancement. UNC-SG-98-08. North Carolina Sea Grant College Program, Raleigh, North Carolina.

McLeod, E., G. L. Chmura, S. Bouillon, R. Salm, M. Bjork, C. M. Duarte, C. E. Lovelock, W. H. Schlesinger, and B. R. Silliman. 2011. A blueprint for blue carbon: toward an improved understanding of the role of vegetated coastal habitats in sequestering CO₂. *Frontiers in Ecology and the Environment*. 9:552-560.

Mitsch, W.J. and J.G. Gosselink. 1993. *Wetlands*. New York, Van Nostrand Reinhold.

Thayer, G.W., T.A. McTigue, R.J. Bellmer, F.M. Burrows, D.H. Merkey, A.D. Nickens, S.J. Lozano, P.F. Gayaldo, P.J. Polmateer, and P.T. Pinit. 2003. Science-based restoration monitoring of coastal habitats, volume one: A framework for monitoring plans under the Estuaries and Clean Waters Act of 2000 (Public Law 160-457). NOAA Coastal Ocean Program Decision Analysis Series No. 23, Volume 1. NOAA National Centers for Coastal Ocean Science, Silver Spring, MD.

National Marine Fisheries Service (NMFS). 2004. *Wetlands: Why are coastal wetlands important to fish?*

Zedler, J. B. 1992. “Restoring Cordgrass Marshes in Southern California.” Chapter 1. In, G.W. Thayer, Ed., Restoring the Nation’s Marine Environment, Maryland Sea Grant College, College Park, MD

11. Responsiveness to Comments Summary

Two (2) written comment letters (CL) were received in response to the Draft Amended Restoration Plan for the Army Creek Superfund Site. A list of the CLs is included in the table below, and original versions of each of the CLs, and the Trustees response to each CL, are provided in Appendix A: Comment Letters and Trustee Response.

ID	Author	Entity	Date
1	Danielle Ellis	DNREC	June 6, 2023
2	John Cartier & Simeon Hahn	County Councilman, 8 th District; Member, Delaware Community Benefits Agreement Coalition	May 18, 2023

APPENDIX A: Comment Letters and Trustee Response



STATE OF DELAWARE
 DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
 DIVISION OF FISH & WILDLIFE
 RICHARDSON & ROBBINS BUILDING
 89 KINGS HIGHWAY
 DOVER, DELAWARE 19901

DIRECTOR'S
OFFICE

PHONE
(302) 739-9910

June 6, 2023

Richard Takacs
 NOAA Restoration Center
 200 Harry S. Truman Parkway
 Suite 460
 Annapolis, MD 21401

Re: DNREC 2023 Amended Army Creek Habitat Restoration

Dear Richard:

Thank you for contacting the Species Conservation and Research Program (SCRCP) about information on rare, threatened and endangered species, unique natural communities, and other significant natural resources as they relate to the above referenced project.

State Natural Heritage Site

A review of our database indicates that the following state-rare or federally-listed plants, animals or natural communities occur at or adjacent to the project site:

Scientific Name	Common Name	Taxon	State Rank	State Status	SGCN Tier or Global Rank	Federal Status
<i>Laterallus jamaicensis</i>	Black rail	Bird	S1B	E	Tier 1	T
<i>Melospiza georgiana nigrescens</i>	Coastal Plain swamp sparrow	Bird	S3B		Tier 1	
<i>Ammodramus caudacutus</i>	Saltmarsh sparrow	Bird	S1N, S3B		Tier 1	

State Rank: S1 – Extremely rare within the state (typically 5 or fewer occurrences); S2 – Very rare within the state (6 to 20 occurrences); S3 – Rare to uncommon in Delaware; S4 – Apparently secure, at fairly low risk of extinction or extirpation due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors; S5 – Demonstrably secure, at very low risk of extinction or extirpation due to a very extensive range, abundant populations or occurrences, or little to no concern from declines or threats; SX – Extirpated or presumed extirpated from the state. All historical locations and/or potential habitat have been surveyed; SH – Historically known, but not verified for an extended period (usually 15+ years); there are expectations that the species may be rediscovered; SE – Non-native in the state (introduced through human influence); not a part of the native flora or fauna; SNR – Not yet ranked in Delaware; SN – Occurrences in DE of limited conservation value, **of concern due to a restricted range; SU – Status uncertain within the state. Usually, an uncommon species which is believed to be of conservation concern, but there is inadequate data to determine the degree of rarity; B – Breeding; M – Migratory; N – Nonbreeding.

State Status: E – Endangered, i.e., designated by the Delaware Division of Fish and Wildlife as seriously threatened with extinction in the state pursuant to State of Delaware Code (7 Del. §601 *et seq.*) and implementing regulation (Title 7, 3900, 16.0 Endangered Species); NA – Plants are not included in Title 7; NL – Not listed.

SGCN Tiers: Tier 1 – Species of Greatest Conservation Need (SGCN) that are most in need of conservation action in order to sustain or restore their populations. They are the focus of the Delaware Wildlife Action Plan (DEWAP), which is based on analyzing threats to their populations and habitats, and on developing conservation actions to eliminate, minimize, or compensate for these threats; Tier 2 – SGCN that are also in need of conservation action, although not with the urgency of Tier 1 species. Their distribution across the landscape will help determine where DEWAP conservation actions will be implemented on the ground; Tier 3 – These species are for the most part still relatively common in Delaware, but are listed as SGCN for various reasons, including documented population declines, high responsibility of the Northeast region for the global population, or continued need for monitoring and/or management. This tier also includes non-breeding species that are uncommon in Delaware. NA – Plants are not addressed in DEWAP.

Federal Status: E – Endangered, i.e., designated by the U.S. Fish and Wildlife Service as being in danger of extinction throughout its range; T – Threatened, i.e., designated by USFWS as being likely to become endangered in the foreseeable future throughout all or a significant portion of its range; C – Candidate, i.e., taxa for which the U.S. Fish and Wildlife Service has on file enough substantial information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species. NOAA Managed Candidate: SC – Species of Concern, i.e., species about which NOAA's National Marine Fisheries Service (NMFS) has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the ESA; NL – Not listed.

While one or more state-rare species were identified near the project location, at present, this project does not lie within a State Natural Heritage Site, nor does it lie within a Delaware National Estuarine Research Reserve, which are two criteria used to identify “Designated Critical Resource Waters” in the Army Corps of Engineers (ACOE) Nationwide Permit General Condition No. 22. A copy of this letter shall be included in any permit application or pre-construction notification submitted to the Army Corps of Engineers for activities on this property.

Marsh Nesting Birds (incl. Black Rail)

Marsh bird Species of Greatest Conservation Need (SGCN) that have been detected during point counts in this project area and/or while nest searching include the federally-listed threatened black rail (*Laterallus jamaicensis*), Coastal Plain swamp sparrow (*Melospiza georgiana nigrescens*), seaside sparrow (*Ammodramus maritimus*), saltmarsh sparrow (*Ammodramus caudacutus*), marsh wren (*Cistothorus palustris*), Virginia rail (*Rallus limicola*), clapper rail (*Rallus longirostris*), and willet (*Tringa semipalmata*). SGCN that have been confirmed breeding either by observing chicks or by starting to monitor active nests in study plots this season include the Coastal Plain swamp sparrow, marsh wren, and clapper rail. Other confirmed breeders that are not marsh bird SGCN, but are still important to consider, include the red-winged blackbird (*Agelaius phoeniceus*), common yellowthroat (*Geothlypis trichas*), and mallard (*Anas platyrhynchos*). Although we believe this project will improve marsh bird habitat in the long run, the project could result in direct nest destruction or in breeding bird disturbance. It will alter hydrologic conditions as well, which could be fatal to nests in the middle of a breeding season. Therefore, we recommend a time of year restriction of **April 1st to July 31st** to avoid impacts to marsh nesting birds.

If you are interested in coordinating with our marsh bird biologist, please contact Erin Rogers at Erin.Rogers@delaware.gov or 302-735-3600.

We are continually updating our records on Delaware’s rare, threatened and endangered species, unique natural communities and other significant natural resources. If the start of the project is delayed more than a year past the date of this letter, please contact us again for the latest information.

Please feel free to contact me with any questions or if you require additional information.

Sincerely,

DNREC 2023 Amended Army Creek Habitat Restoration



Danielle Ellis
Environmental Review Coordinator
Phone: (302) 223-2446
6180 Hay Point Landing Road
Smyrna, DE 19977

DNREC 2023 Amended Army Creek Habitat Restoration

One letter was received from the State of Delaware Department of Natural Resources and Environmental Control, Division of Fish and Wildlife, denoting information on rare, threatened and endangered species, unique natural communities, and other significant natural resources as they relate to the preferred alternative. The Trustees note that, as the preferred alternative project moves through planning, design, and permitting, it will need to undergo additional consultation and permit issuance to ensure consistency with the state plans, protective measures, and time of year restrictions.

May 18, 2023

Richard Takacs

NOAA Restoration Center

200 Harry S. Truman Parkway, Suite 460

Annapolis, MD 2140

Subject: Amended Restoration Plan Released for Army Creek Habitat Project

Dear Mr. Takacs,

The following comments are provided on the subject document per the DNREC public notice of April 5, 2023.

I, New Castle County Councilman John Cartier, have made restoration of aquatic habitats and riverfronts in New Castle County a high priority and am coordinating with my elected colleagues and officials at the federal, state, and local level and the public on this issue. I have asked Simeon Hahn to volunteer and help on several important restoration initiatives in New Castle County, especially in the urban, historically impacted, and environmental justice areas.

We welcome the opportunity to provide public input into the Amended Restoration Plan to spend \$900,000+ dollars of NRDA funds on natural resource restoration. We feel the process would be enhanced by soliciting public input directly with the local community before a plan was released with the trustees "decision" and recommended approach.

- (1) We request a public information meeting be scheduled to provide for more public information and engagement on the Restoration Plan for restoration funds from the Army Creek NRDA settlement. The title is misleading as the plan does not include an "Army Creek Habitat Project".
- (2) The evaluation of alternative restoration projects to the "Army Creek Project" should not be limited to the restoration criteria used in 1995 by the trustees, which focused on tidal restoration. Furthermore, the trustees should include evaluation criteria relative to environmental justice considerations in New Castle County and the Route 9 and urban NCC Delaware River Corridor where the injuries occurred. Injury categories in Army Creek are not limited to migratory fish and associated habitats, which have also been impacted by the historical and updated tide gates. There are other aquatic and semi aquatic resources and habitats and recreation impacts which occurred at Army Creek and should be considered in the restoration planning. This outdated project evaluation process has resulted in a proposal to There are other aquatic and semi aquatic resources and habitats and recreation impacts which occurred at Army Creek and should be considered in the restoration planning.
- (3) NRDA restoration dollars for injuries occurring in New Castle County should be allocated to restoration projects in New Castle County. Although some projects in New Castle County were evaluated the amended plan

- (4) dismissed the value of urban locations and the scaling of such benefits without any detailed evaluation or engagement with the public. A focused effort with community input and local restoration expertise to identify and evaluate projects in New Castle County is essential. There are also additional restoration opportunities which were not identified and evaluated by the trustees.
- (5) The trustee selected project in Pickering Beach (Dover DE) which includes culvert and other infrastructure restoration should seek infrastructure funding from alternative sources including but not limited to the Bilateral Infrastructure Law and not take restoration dollars away from impacted citizens of New Castle County. Furthermore, the salinity regime and other characteristics of the site do not match particularly well with the impacted resources in Army Creek.
- (6) The restoration dollars available (originally \$600,000 and now with interest estimated to be over \$900,000) are sufficient to perform important restoration in New Castle County and fulfill the spirit of in-place restoration under NRDA as well as begin to address significant environmental justice issues in the area.

I welcome your response on this matter and can be reached at john.cartier@newcastlede.gov and 302-293-3189.

Sincerely,

John Cartier
New Castle County Councilman 8th District

Simeon Hahn (member, Delaware Community Benefits Agreement Coalition)

A second letter was received from the Office of New Castle County Councilman John Cartier, of District 8. The major comments essentially request that the Trustees: 1) hold a public information meeting to provide for more engagement; 2) change the type and priority of the injury that was initially determined needed to be compensated for in the original injury assessment, settlement and Restoration Plan; 3) focus restoration site considerations on New Castle County and specifically urban areas, and 4) solicit additional restoration opportunities.

In response to the request to hold an additional opportunity for public information and engagement, the Trustees advertised and held a public meeting on October 23, 2024 at DNREC facilities that included both a live and online hosted session. The meeting also allowed an additional 30 days following the meeting for any public comments to be submitted.

The original injury documents and restoration plan noted actions needed to restore, replace, and/or acquire the equivalent of the natural resources injured, destroyed or lost during operation of a municipal and industrial waste landfill at the Army Creek Superfund Site. The settlement funds and restoration were intended to compensate for injury and to offset losses to marsh downstream of the Army Creek Superfund Site and to restore upland habitat injuries caused by installation of the landfill cap using upland-areas within the watershed. No recreational losses were quantified or included as part of the damage assessment or settlement.

The Army Creek watershed was not considered then, nor now, a heavily urbanized watershed, certainly not to the scale of the heavily urbanized areas in the northern and more densely populated parts of New Castle County. While the upper watershed does contain both residential and commercial development upstream of the Route 13 crossings, the lower portion was at the time and remains to this day largely undeveloped. The Trustees agree with the commenter that portions of New Castle County are highly urbanized, though a distance from the original Army Creek Superfund Site. The Army Creek site is located in the Southern most portion of New Castle County, a considerable distance from the closest urbanized city, being the town of New Castle.

Restoration planning and injury compensation regularly seek to be in-kind and in-place when that can be practically realized. That planning did not at the time of settlement, nor does it now, unnecessarily constrain itself to specific boundaries, such as New Castle County or urban communities. Notably, the originally proposed Army Creek project, and all of the other sites evaluated, were located in New Castle County. That the preferred alternative selected by the Trustees was not in New Castle County was a direct result of the resulting ecological value of the projects, the funds available, and the feasibility to implement the projects.

The comment letter opines that the Trustees should have been constrained by the need to complete urban restoration, and/or restoration in New Castle County. The Trustees evaluated potential projects within New Castle County in the April 2023 Draft Amendment to the Final Restoration Plan, and even solicited for additional projects during the public meeting held after the release of the Draft Amendment, but this did not result in the Trustees identifying a restoration project within the Army Creek watershed or New Castle County that also fulfilled the intent of compensating for the original injury.

The analysis in the Draft Amendment to the Final Restoration Plan is clear in that it states that the Trustees recognize that the preferred alternative does not have a spatial nexus to Army Creek, but that it will restore in-kind benefits. Conversely, the Trustees also evaluated dam removal within the Brandywine Creek system, which would not have had a spatial nexus to the Army Creek site either, but did have an urban connection and restored a complementary, migratory fish habitat. The Trustees ultimately concluded that, while fish habitat gains in urbanized portions of Brandywine Creek are an important effort, the habitat type impacted at the Army Creek site was more directly associated with tidal wetlands versus riverine habitat access.

The comment letter did not provide any other restoration alternatives for the Trustees to consider, in New Castle County or otherwise, just that it wished that the Trustees would re-start the process and return back to initial scoping once again via renewed outreach to agencies, resource experts, and the public. The Trustees note that they did utilize resource experts from within each of the federal and state agencies involved, who were familiar in detail with both proposed projects and viable sites to conduct restoration that would be in concert with the original injury and habitat types. As noted above, the Trustees also held an additional public meeting and comment period to solicit input and any potential alternative projects to consider, and none were submitted.

Lastly, the preferred alternative Pickering Marsh hydrologic project is not an infrastructure project being led by the need to enlarge the existing culvert under Pickering Beach Road for flood protection. Rather, the initial concept designs and early hydrology analysis suggest that additional culvert size and redesign is needed in order to allow more water to flow under the existing road for ecological purposes. The project is not envisioned nor proposed as a flood control infrastructure project.

APPENDIX B: NOAA Restoration Center NEPA Inclusion Analysis

NOAA Restoration Center NEPA Inclusion Analysis

Award Number

I. IDENTIFYING PROJECT INFORMATION

Project Name Pickering Beach Marsh Tidal Wetland Restoration - Final Amendment to the Army Creek Final RP		Project State DE
Project Proponent / Applicant NOAA, USFWS, Delaware NREC - "Trustees"		Project Contact Stephanie Westby

II. OTHER FEDERAL PARTNERS AND LEVEL OF NEPA ANALYSIS

Has another Federal agency completed NEPA?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is NOAA the lead federal agency for this NEPA analysis?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

III. PROJECT DESCRIPTION / SCOPE OF ACTIVITIES FOR ANALYSIS

Please check one of the following conditions:

I am analyzing impacts of project planning and design activities, in order to gather all required project information

I have all information needed to complete the final analysis of impacts for the entire project

Has a NEPA review been conducted for prior project activities?	<input type="checkbox"/> Yes	Date of NEPA completion for prior phase
	<input checked="" type="checkbox"/> No	N/A

Describe the full scope of the project, including historic/ geographic/ ecological context, the type of restoration, and how it will be conducted.

Pickering Beach Marsh Tidal Wetland Restoration:
 The primary goal of this project is to restore hydrology to approximately 175 acres of wetlands north of Pickering Beach Rd., DE. Currently this area is void of daily tidal exchange. Historical inlets to Delaware Bay no longer exist on the eastern portion of the marsh, while the remainder of the marsh is bound by existing roads and impoundment dike at the north, west, and southern boundaries of the marsh. This project involves the restoration of a previously existing north to south ditch of approximately 1.3 miles running from the Little Creek Main Impoundment at the north to the existing Lewis Ditch at the south. The crossing of Pickering Beach Rd. would involve replacement of existing culverts with appropriated sized culverts to allow tidal flow. A second component of this project would involve the replacement of a non-functioning water control structure located along the southern dike of the Little Creek Main Impoundment adjacent to the Pickering Marsh. Due to limited flow through the Pickering Marsh, this secondary water control structure on the impoundment has not been placed in used and is currently in need of replacement. A functioning structure at this location would allow for tidal flow through the impoundment during portions of the year serving as a benefit to fisheries in addition to improving the health of the impounded wetland and adjacent habitat, to the benefit of an abundance of wildlife utilizing the area.

Describe the proposed action (i.e. the portion of the project that NOAA is funding/approving).

The Trustees are funding the proposed project in its entirety, using remaining NRDA settlement funds for the Army Creek Superfund Site, New Castle County, Delaware. These restoration activities will replace comparable tidal wetland restoration activities originally selected in the Final Restoration Plan (RP) for the Army Creek Superfund Site that were not able to be implemented, as discussed in the Final Amendment to the Final RP (Final Amendment). The proposed project will provide and restore wetland habitat (tidal wetland and channel restoration) by improving and managing tidal exchange, which was a desired outcome for the initial natural resources damages assessment and settlement for the Army Creek Superfund site. The project will restore the same resource types that were injured at the site—e.g., migratory birds, anadromous and other fish, and the aquatic and wetland habitat utilized by those and other wildlife species. Riparian and upland habitat immediately surrounding the impoundment would also be enhanced.

The non-preferred alternative to the proposed action described above includes the no action alternative, which is premised on natural recovery and is further described and evaluated in the Final Amendment.

Check the types of activities being conducted in this project:

Technical Assistance		
<input type="checkbox"/> Implementation and Effectiveness Monitoring	<input type="checkbox"/> Environmental Education Classes, Programs, Centers, Partnerships and Materials; Training Programs	<input type="checkbox"/> Fish and Wildlife Monitoring
<input type="checkbox"/> Planning, Feasibility Studies, Design Engineering, and Permitting		

Riverine and Coastal Habitat Restoration

NEPA Inclusion Analysis

<input type="checkbox"/> Beach and Dune Restoration	<input type="checkbox"/> Bank Restoration and Erosion Reduction	<input type="checkbox"/> Water Conservation and Stream Diversion
<input type="checkbox"/> Debris Removal	<input type="checkbox"/> Coral Reef Restoration	<input checked="" type="checkbox"/> Levee & Culvert Removal, Modification, Set-back
<input type="checkbox"/> Dam and Culvert Removal & Replacement	<input type="checkbox"/> Shellfish Reef Restoration	<input type="checkbox"/> Fringing Marsh and Shoreline Stabilization
<input type="checkbox"/> Technical and Nature-like Fishways	<input type="checkbox"/> Artificial Reef Restoration	<input type="checkbox"/> Sediment Removal
<input type="checkbox"/> Invasive Species Control	<input type="checkbox"/> Road Upgrading/Decommissioning; Trail Restoration	<input type="checkbox"/> Sediment/Materials Placement
<input type="checkbox"/> Prescribed Burns/Forest Management	<input type="checkbox"/> Signage and Access Management	<input type="checkbox"/> Wetland Planting
<input type="checkbox"/> Species Enhancement	<input type="checkbox"/> SAV Restoration	
<input checked="" type="checkbox"/> Channel Restoration	<input type="checkbox"/> Marine Algae Restoration	

<i>Conservation Transactions</i>		
<input type="checkbox"/> Land Acquisition	<input type="checkbox"/> Water Transactions	<input type="checkbox"/> Restoration/Conservation Banking

IV. PROJECT IMPACT ANALYSIS

Core Questions

1. Are the activities to be carried out under this project fully described in Section 2.2 of the NOAA RC PEIS?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
2. Are the specific impacts that are likely to result from this project fully described in Section 4.5.2 of the NOAA RC PEIS?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
3. Does the level of adverse impact for the project exceed that described in Table 11 of the NOAA RC PEIS for any resource, including significant adverse impact?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

4. Describe the project impacts to resources (including beneficial impacts) and any mitigating measures being implemented.

Pickering Beach Marsh Tidal Wetland Restoration—Proposed tidal wetland and channel restoration activities are similar to those described in section 2.2.2 ("Riverine and Coastal Habitat Restoration") of the RC PEIS--specifically section 2.2.2.5.1 ("Channel Restoration") and 2.2.2.11.1 ("Wetland Restoration - Levee and Culvert Repair, Modification, and Set-Back"). Impacts from the proposed habitat restoration activities are consistent with (or less than) those described in sections 4.5.2.5.1 ("Channel Restoration") and 2.2.2.11.1 ("Wetland Restoration - Levee and Culvert Repair, Modification, and Set-Back") and Tables 23 and 33 of the RC PEIS, and the relevant impacts are summarized below. The proposed activities do not have impacts beyond those analyzed in the RC PEIS, including adverse effects that are significant, or meet any other criteria for exclusion from analysis (Table 10 of the RC PEIS).

1. Channel Restoration:
Construction activities related to restoration of in-stream channel and off-channel habitat (including riparian and associated upland habitat) can cause direct and indirect, short- and long-term, minor and moderate, localized, beneficial and adverse impacts.

Geologic and aquatic resources would receive direct, short-term, minor adverse impacts due to a temporary increase in turbidity and exposure of bare stream banks as a result of the restoration activity. Channel and in-stream restoration can involve the use of heavy equipment, which could disturb soil and the channel beds. Exposure of bare soil can cause erosion, and channel bed disturbances can cause stream turbidity.

Potential impacts to air quality could include direct, short-term, minor adverse impacts to air quality during construction or other on-the-ground activities. These impacts include exhaust emissions from off-road construction equipment, on-road hauling, construction worker employee commuting vehicles, and fugitive dust emissions from paved roads and earthmoving activities. These impacts may extend beyond the project site.

In-stream and off-channel (including riparian and associated uplands) restoration would cause direct and indirect, short- and long-term, minor and moderate, beneficial and adverse impacts to living coastal and marine resources and EFH and threatened and endangered species. More in-stream complexity promotes higher benthic organism productivity throughout the system, increased feeding opportunities, lowered predation rates on juvenile fish, more suitable spawning substrate, and deeper rearing habitat—conditions that are beneficial to living coastal and marine resources and EFH, and threatened and endangered species. In-stream restoration construction activities could cause temporary alteration of EFH and disruption or mortality of living coastal marine resources. In-stream and channel restoration projects would only occur in work windows when low flow conditions are present at the project site, and when the least number of ESA species are present in the project area.

In-stream channel restoration could have direct, minor, short- and long-term adverse impacts on cultural and historic resources if unknown sites are disturbed during construction.

NEPA Inclusion Analysis

Core Questions (continued)	
<p>This restoration activity will also have direct, short- and long-term, minor and moderate adverse and beneficial impacts to land use and recreation. In the long term, recreational opportunity will likely increase in the project area and in the river system. However, short-term use may be curtailed during construction activities. Increased fishing pressure may occur in the short and long term. In-stream restoration activities can result in indirect short and long-term, minor and moderate beneficial impacts to socioeconomic.</p> <p>2. Wetland Restoration - Levee and Culvert Repair, Modification, and Set-Back: The removal and/or modification of culverts and similar infrastructure would cause direct and indirect, short-term, localized, minor adverse impacts on geology and soils, water, air, living coastal and marine resources and EFH, and threatened and endangered species during the construction phase of the project. The use of heavy machinery and construction equipment is the primary cause of the direct, adverse impacts associated with this activity, which may include soil compaction, emissions from heavy equipment, removal or crushing of under-story vegetation, increased soil erosion in the immediate area of construction operations, and unintentional introduction of non-native, potentially invasive, species. Impacts to threatened and endangered species may include effects from handling, noise, turbidity, contaminants, hydrology, additional habitat quality/quantity, and displacement. Removal of barriers may also open pathways for invasive species. Cultural and historic resources and land use could experience indirect, long-term, minor adverse impacts. The land use in the floodplain, including any potential culturally sensitive areas, could change as the water resources in the floodplain changed. Because land use would stabilize in the floodplain over time, the impact would be minor.</p> <p>These restoration activities would provide direct and indirect benefits to geologic and aquatic resources, as well as essential fish habitat (EFH) and threatened and endangered species. These activities result in benefits to riparian and associated upland, stream and river channel habitats, and shoreline habitats such as wetlands, beaches, and mudflat areas. Restoration of natural hydrology would aid in the development of vegetated communities that provide vital rearing, feeding, and refuge habitat for fish and benthic communities and wildlife species. This technique is beneficial for anadromous fish that need connected coastal waterways and rivers with unaltered hydrology for passage during migration events, as well as for estuarine fish species that benefit from increased habitat area. Long-term major beneficial effects to the quality of surface water resources at the project site and beyond are expected due to restoration of tidal flow and water movement. Restoration of these areas to natural states would enhance water quality and salinity, reduce turbidity and soil erosion, and enhance habitat quality, although some increases in turbidity in the water column could result due to increased water movement. Indirect, long-term minor beneficial effects would be expected nutrients uptake and transformation resulting from enhanced vegetative growth in the restoration area.</p> <p>3. No Action - The no action alternative, which is premised on natural recovery, is the non-preferred alternative to the proposed activities described above and is further described and analyzed in sections 5.4 and 6.6 of the Final Amendment.</p>	<p>5. Describe any potential cumulative impacts that may result from past, present or reasonably foreseeable future actions (beneficial or adverse). Cumulative project impacts would not be significant or occur at a regional scale, and are consistent with those described in the RC PEIS (section 4.9, "Cumulative Impacts"). Because the proposed restoration is restoring natural habitat structure and function, the Trustees expect that there will be long-term, minor to moderate positive cumulative effects on the biological and physical health of the project area under the preferred alternative (including living Coastal and Marine Resources and EFH).</p> <p>There may be a long-term adverse effect to the physical and biological resources of the project area were the no action alternative selected because the restoration would not occur. However, relative to the magnitude of adverse ecological impacts that currently exist in the affected area, the adverse cumulative effect of the no action alternative is also not expected to be significant.</p>
<p>6. Describe the public outreach and/or opportunities for public comment that have taken place to this point. Are any future opportunities for public input anticipated? The Draft Amendment to the Final Restoration Plan was released and circulated for public comment by the Trustees, electronically and through a NOAA web-based posting (https://darrp.noaa.gov/hazardous-waste/amended-restoration-plan-released-army-creek-habitat-project), for a 45-day comment period beginning on April 5, 2023. The Trustees received two comment letters on the Draft Amendment, which are included in Appendix A of the Final Amendment, along with the Trustees response to those comments. There were no substantive changes made to the Final Amendment based on the public comments and the Trustees' evaluation of those comments.</p>	<p>7. Have any public comments raised issues of scientific/environmental controversy? Please describe.</p> <p>No. All comments on the Draft Amendment and Inclusion Analysis were addressed prior to finalization and approval of the Final Amendment.</p>

NEPA Inclusion Analysis

8. Describe the most common positive and negative public comments on issues other than scientific controversy described above in Question 7.
 The proposed restoration activities are similar to those that have been occurring throughout the northeast for many years, and the public has generally been supportive of spending restoration funding (including CERCLA case settlement funds) on on-the-ground restoration projects, especially those associated with restoring natural resources and providing public access to those resources. All public comments received on the Draft Amendment have been included in the Final Amendment, along with the Trustees consideration and response to those comments (Appendix A).

Levee and Culvert Removal, Modification and Set-back


Describe the extent and the height of the levee/culvert targeted in the restoration project. How is it consistent with the types and impacts of species enhancement presented in the NOAA RC PEIS in Sections 2.2 and 4.5.2?
 The proposed culvert replacement at Pickering Beach Road and the water control structure replacement at the Little Creek Main Impoundment near Pickering Marsh will restore tidal influence and manage tidal exchange, and are consistent with the types of actions described in section 2.2.2.11.1 of the RC PEIS. Specific dimensions and specifications for the culverts and control structure and are not yet determined, but will be appropriately sized to restore hydrologic connection to the adjacent wetlands. Anticipated environmental impacts are consistent with those described in section 4.5.2.11.1 of the RC PEIS.
 In general, these types of culvert/water control structure replacement projects produce short-term adverse ecological impacts and considerations, but longterm ecological benefits—e.g. improved water quality, sediment transport, development of vegetated communities, and improved habitat and passage for migratory and estuarine fish species and other wildlife.

V. NEPA DETERMINATION

The action is completely covered by the impact analysis within the NOAA RC Programmatic EIS (PEIS). The project and its potential impacts may be limited through terms or conditions placed on the recipient of NOAA funds. It requires no further environmental review. An EIS Inclusion Document will be prepared.

The action analyzed here has unknown impacts. At this time, funding will be limited to those portions of the action and impacts analyzed in the PEIS. These limitations will be described in terms or conditions placed on the recipient of NOAA funds. If all remaining activities and impacts are later determined to be described in the PEIS, this analysis will be documented in the program record and the applicant may then proceed with the project. If all remaining activities and impacts are later determined to not be described in the PEIS, further NEPA review will be required; see below.

The action or its impacts are not covered by the analysis within the PEIS. It will require preparation of an individual EA, a supplemental EIS, adoption of another agency's EA or EIS, or will be covered by a Categorical Exclusion.

Signature  Digitally signed by FIorentino,JOHN.FRANK,1383193571 Date: 2025.06.12 08:50:59 -0400 Date Signed _____

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION APPROVAL OF
THE 2025 FINAL AMENDMENT TO THE ARMY CREEK 1996 RESTORATION PLAN
AND ENVIRONMENTAL ASSESSMENT**

In accordance with the Memorandum of Agreement, as amended, among the United States Fish and Wildlife Service (DOI), the National Oceanic and Atmospheric Administration, and the State of Delaware, NOAA indicates by signature below their agreement to concur, in its entirety, with this 2025 Final Amendment to the Army Creek 1996 Restoration Plan and Environmental Assessment on behalf of their agency.

Approved:

**DOLEY.CHRISTOPHER.DAVID.136
5844042**

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DOLEY.CHRISTOPHER.DAVID.1365844042
Date: 2025.08.28 12:47:05 -04'00'

Christopher Doley
Division Chief
NOAA Restoration Center
U.S. Department of Commerce

Date

**U.S. DEPARTMENT OF THE INTERIOR APPROVAL OF THE 2025 FINAL
AMENDMENT TO THE ARMY CREEK 1996 RESTORATION PLAN AND
ENVIRONMENTAL ASSESSMENT**

In accordance with the U.S. Department of Interior 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 with their associated National Environmental Policy Act documentation, with concurrence from the Department's Office of the Solicitor.

The Authorized Official for the Army Creek Superfund Site is the Regional Director for the U.S. Fish and Wildlife Service's Northeast Region.

By the signature below, the 2025 Final Amendment to the Army Creek 1996 Restoration Plan and Environmental Assessment is hereby approved.

Approved:

**SHARON
MARINO**

Digitally signed by SHARON
MARINO
Date: 2025.09.14 21:49:25
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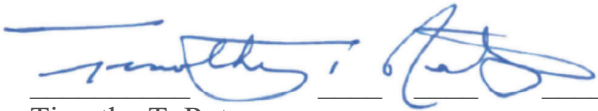
Sharon Marino
Acting Regional Director
Northeast Region
U.S. Fish and Wildlife Service

Date

STATE OF DELAWARE APPROVAL OF THE 2025 FINAL AMENDMENT TO THE ARMY CREEK 1996 RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT

In accordance with the Memorandum of Agreement, as amended, among the United States Fish and Wildlife Service, the National Oceanic and Atmospheric Administration, and the State of Delaware, Delaware indicates by signature below their agreement to concur, in its entirety, with this 2025 Final Amendment to the Army Creek 1996 Restoration Plan and Environmental Assessment.

Approved:



Timothy T. Ratsep
Division Director
Delaware Department of Natural Resource
and Environmental Control
State of Delaware

9/11/2025
Date