FINDING OF NO SIGNIFICANT IMPACT
ABINGTON ENVIRONMENTAL INFRASTRUCTURE IMPROVEMENT PROJECT
ABINGTON TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA
SECTION 566, WATER RESOURCE DEVELOPMENT ACT of 1996

OVERVIEW

The United States Army Corps of Engineers (USACE), Philadelphia District has evaluated the construction of ecological improvements at Roychester Park and Grove Park in the community of Abington Township in Montgomery County, Pennsylvania.

PURPOSE AND SPECIFICATIONS

The authority for this project is Section 566 of the Water Resources Development Act (WRDA) of 1996. Section 566 of WRDA established a pilot program to provide design and construction assistance for water-related environmental infrastructure and resource protection and development projects for non-Federal interests in Bucks, Chester, Delaware, Montgomery and Philadelphia counties in Southeastern Pennsylvania.

COORDINATION

The project was developed in partnership with USACE and Abington Township. Initial scoping was conducted in 2017. The draft Environmental Assessment (EA) for the project was forwarded to the U.S. Environmental Protection Agency (EPA), Region III, the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), Pennsylvania Department of Environmental Protection (PADEP), Pennsylvania State Historic Preservation Officer (SHPO), Pennsylvania Game Commission (PGC), Pennsylvania Fish and Boat Commission (PFBC), and all other known interested parties for review and comment.

SUMMARY OF POTENTIAL EFFECTS

For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

Table 1: Summary of Potential Effects of the Recommended Plan

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Air quality	☒	☐	☐
Water quality	☒	☐	☐
Wetlands	☒	☐	☐
Aquatic resources	☒	☐	☐
Fish and wildlife habitat	☒	☐	☐
Threatened/endangered species	☐	☐	☒
Cultural resources	☒	☐	☒
Floodplains	☐	☐	☒
Hazardous, toxic & radioactive waste	☐	☐	☒

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Environmental justice	☐	☐	☒

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) as detailed in the EA will be implemented, if appropriate, to minimize impacts.[1]

ENDANGERED SPECIES IMPACT

A Pennsylvania Natural Diversity Inventory (PNDI) search on the Pennsylvania Natural Heritage Program website indicated no known effects to threatened and endangered species and/or special concern species and resources within the project areas. Consultation with Pennsylvania Department of Conservation and Natural Resources (DCNR) has been completed and concluded that the project is not likely to affect species and resources under DCNR's responsibility.

Responses to the project's National Environmental Policy Act (NEPA) scoping letter in 2017 did not identify any known resources of concern in the project area. However, a species list generated using the Information for Planning and Consultation (IPaC) tool on December 2, 2020 indicates that the project site is located within the range of the Federally endangered Indiana bat (*Myotis sodalis*) and Federally threatened Northern Long Eared Bat (*Myotis septentrionalis*) (USFWS 2020). In accordance with the project review procedures provided by the USFWS Pennsylvania Field Office, a PNDI review was completed for this project. The PNDI screening concluded that no further consultation is required for all four of the federal and state agencies that have jurisdiction over federal and state-listed species, including the U.S. Fish and Wildlife Service, Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, and Pennsylvania Department of Conservation and Natural Resources. This was coordinated with USFWS, who confirmed that no further consultation with their agency is required under Section 7 of the Endangered Species Act of 1973 as amended by P.L. 96-159.

WATER QUALITY COMPLIANCE

USACE is designing the project to provide a net increase in aquatic resources function and services and meet the terms and conditions of Nationwide Permit 27 (Aquatic Habitat Restoration), and therefore qualifies for the associated section 401 Water Quality Certificate from PADEP. In addition, the project will comply with Title 25 Pa. Code Chapter 102, Erosion and Sediment Control and Stormwater Management.

1 40 CFR 1505.2(C) all practicable means to avoid and minimize environmental harm are adopted.

WETLANDS
There are several small forested wetlands associated with a historic meander of Sandy Run in the Grove Park. Additionally, there is one small riparian wetland found in the project area at Roychester Park.

Minor wetland impacts are possible in Grove Park; however, the goal of the project is to expand and enhance the forested wetland area by maintaining and enhancing wetland hydrology. Designs for this forested wetland area are currently being refined. Current designs include excavating upland areas to introduce wetland hydrology, avoiding and minimizing any excavation in wetlands, grading the new channel no lower than the existing wetlands, designing the new stream's floodplain to encourage water to continue accumulating in the forested wetlands, and planting the area with native wetland and riparian plants. Negative effects on wetland hydrology in existing wetlands are not anticipated and will be avoided to the maximum extent possible. USACE will continue to work with the resource agencies during the design phase to avoid and minimize any risk on existing wetlands and their function.

No impacts to wetlands are proposed for Roychester Park.

COASTAL ZONE
Based on the information gathered during the preparation of the EA, the project is not located in the area defined under the Coastal Zone Management Act of 1972. Therefore, the project will not need a Federal consistency determination for the Coastal Zone Management Program of Pennsylvania.

CULTURAL IMPACTS
The Pennsylvania State Historic Preservation Office (PA SHPO) recommended a Phase I investigation due to the relative high probability of the project area to contain significant archaeological deposits. A Phase I investigation was conducted that involved both research and field survey. No historic properties eligible for or listed on the National Register of Historic Places were found and no additional work is required. A negative survey form was provided to the PASHPO and the Tribes.

FINDING
Because the EA concludes that the work described does not constitute a major Federal action significantly affecting the human environment, I have determined that an Environmental Impact Statement is not required.

_____ _____

David C. Park, P.E. Date
Lieutenant Colonel, Corps of Engineers
District Commander

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ENVIRONMENTAL ASSESSMENT

ABINGTON ENVIRONMENTAL INFRASTRUCTURE IMPROVEMENT PROJECT

ABINGTON TOWNSHIP

MONTGOMERY COUNTY, PENNSYLVANIA

SECTION 566, WATER RESOURCE DEVELOPMENT ACT

PREPARED BY:

PHILADELPHIA DISTRICT

U.S. ARMY CORPS OF ENGINEERS

PHILADELPHIA, PENNSYLVANIA 19107

April 2021

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DRAFT
ENVIRONMENTAL ASSESSMENT
ABINGTON ENVIRONMENTAL INFRASTRUCTURE IMPROVEMENT
ABINGTON TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA
SECTION 566, WATER RESOURCE DEVELOPMENT ACT

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1.0 Introduction

The Abington Environmental Infrastructure Improvement Project (project or proposed action) is a stream and habitat improvement project in Abington Township, Pennsylvania adjacent to and along Sandy Run Creek (Figure 1). The project was authorized under Section 566 of the Water Resources Development Act (WRDA) of 1996 (Public Law 104-303), which was amended by Section 552 of WRDA 1999 (Public Law 106-53) to include environmental restoration as an authorized project purpose.

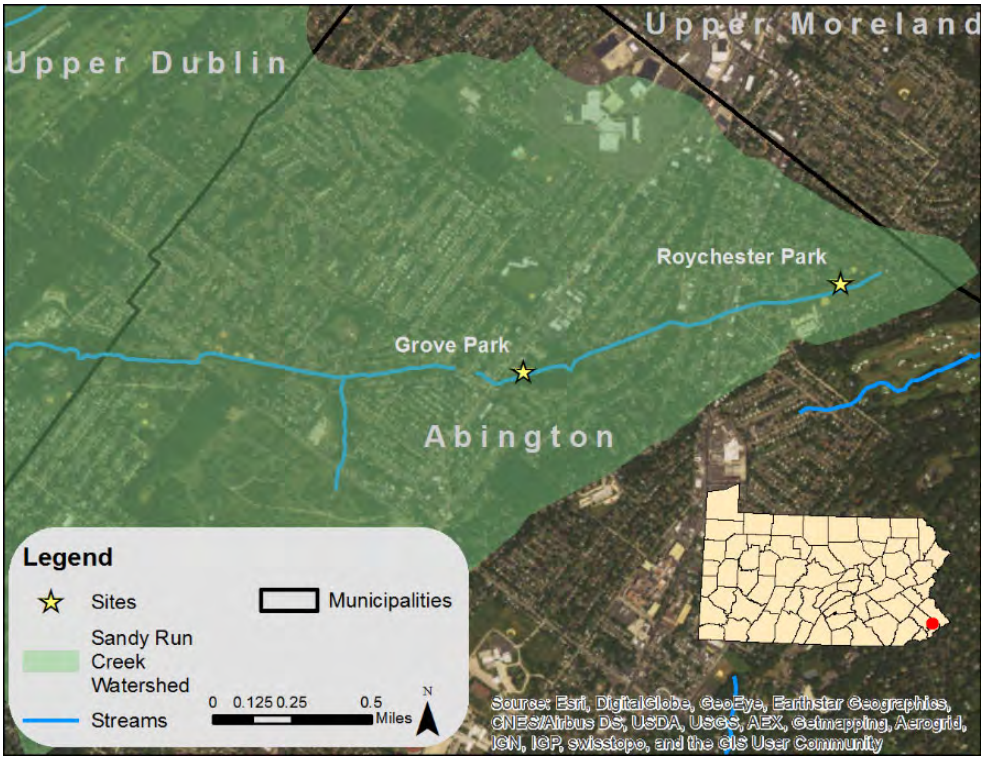

Figure 1: Project Location

Sandy Run Creek (also referred to as Sandy Run), part of the Wissahickon Creek Watershed, is a stream system that has been adversely affected by development and land use practices over the past century. Due to high levels of impervious surfaces throughout the watershed, the creek responds quickly during rain events, and increases in stream flow with erosive forces occurring almost immediately following the onset of storm events. These changes in hydrologic conditions within the watershed have caused severe channel destabilization and riparian habitat degradation within much of the watershed.

In April 2016, staff from USACE and Abington Township visited potential project sites along Sandy Run Creek and considered the five locations along Sandy Run Creek for environmental infrastructure and stream improvements. These include:

- Roychester Park

- Grove Park
- Roslyn Park
- Ardsley Wildlife Sanctuary, and
- Deal Park

During the site visit, it was determined that all five sites had potential for projects under the 566 authority. Ardsley Wildlife Sanctuary, Deal Park, and Roslyn Park were identified as lower priority projects because of higher levels of uncertainty in defining the problem areas. The team identified areas within Roychester Park and Grove Park (Figure 1) as potential high priority sites for ecosystem restoration.

Roychester Park is a municipally owned park of approximately 12.7 acres. Many recreational and community features are present in the park including a playground, baseball fields, basketball courts, tennis courts, and the Roychester Community House, which serves as a venue for community functions and gatherings. The headwaters of Sandy Run Creek flow through Roychester Park. The park contains approximately 950 linear feet of stream and about 150 linear feet of which is currently diverted into a below-ground piped channel (Figure 2). The segment of stream which has been diverted underground currently has no aquatic habitat value. The banks of the above ground segments of Sandy Run Creek within Roychester Park are severely eroded and the channel is deeply incised (Figure 3).

Figure 2: Map of Roychester Park showing location of Sandy Run Creek

Figure 3: Eroded stream bank in Roychester Park

Grove Park is a municipally owned park of approximately 2 acres. The park contains approximately 1,300 linear feet of Sandy Run Creek (Figure 4). About 400 linear feet of stream within the park has a concrete channel bottom (24 feet wide and 12 inches thick and reinforced with rebar) lined with gabion baskets along the banks (Figure 5). The concrete channel provides no useful aquatic habitat and increases the velocity and temperature of the water, which further impairs downstream habitat through increased sedimentation and water temperature. Downstream of the concrete lined stream bottom, the stream banks are lined with gabion baskets (Figure 6). The gabions provide low quality habitat for aquatic species and prevent the stream bed from connecting to the surrounding floodplains.

Figure 4: Map of Grove Park showing location of Sandy Run Creek

Figure 5: Concrete lined stream in Grove Park

Figure 6: Gabion lined stream in Grove Park

2.0 Study Authority

Under Section 566 of the WRDA of 1996, USACE is authorized to design and construct water related environmental infrastructure and resource protection and development projects in southeastern Pennsylvania. The authority is limited to the Pennsylvania Counties of Bucks, Chester, Delaware, Montgomery and Philadelphia. Philadelphia District entered into an agreement with the Township of Abington to implement this project under Section 566 of the WRDA of 1996. USACE developed this Environmental Assessment (EA) to serve as the decision document for the selection of the proposed action, in accordance with the appropriate policies and procedures specified in the Corps of Engineers Regulations (ER) 200-2-2, as well as of the National Environmental Policy Act (NEPA) (40 Code of Federal Regulation [CFR] 1501.5). Scoping was conducted in 2017 and public review and consultation is being conducted in accordance with all applicable requirements.

3.0 Purpose and Need for Action

The purpose of the project is to stabilize, naturalize, and improve ecosystem function along Sandy Run Creek at Roychester Park and Grove Park while maintaining the recreational functions of the parks.

The project is needed to reduce erosion and improve habitat function along the upper reaches of Sandy Run Creek. The specific objectives are to enhance and restore aquatic, wetland, and riparian habitat, improve infiltration of flood waters, stabilize stream banks, control invasive species, and reconnect floodplains along the Sandy Run Creek in Roychester Park and Grove Park in Abington Township, Pennsylvania.
The banks of the above ground segments of Sandy Run Creek within Roychester Park are severely eroded (Figure 3). The significant erosion of these banks disconnects the streambed from the surrounding floodplain, provides poor habitat for both aquatic and wetland species, and transports sediment to downstream locations creating further aquatic habitat impairment. The municipality has installed native vegetation plantings in the riparian buffer area of the very upper reaches of the stream in Roychester Park, but the presence of invasive species in the remaining riparian areas continue to degrade the riparian habitat by preventing the further recruitment and establishment of native species. Native plant species provide vital habitat to wildlife inhabiting the riparian buffer areas.

The main stem of Sandy Run Creek in Grove Park has been channelized and lined with concrete and gabions. The main stem of Sandy Run Creek was relocated to its current location in Grove Park several decades ago. Prior to this, the creek and two small tributaries meandered through the park. The original channel and at least one tributary still exist but they lack base flow; and only serve as a high flow channels during storm events (Figure 7). The easternmost tributary is significantly silted in. The limited vegetated buffer of this high flow channel has significant invasive species issues, which severely degrades the habitat value of the riparian buffer.

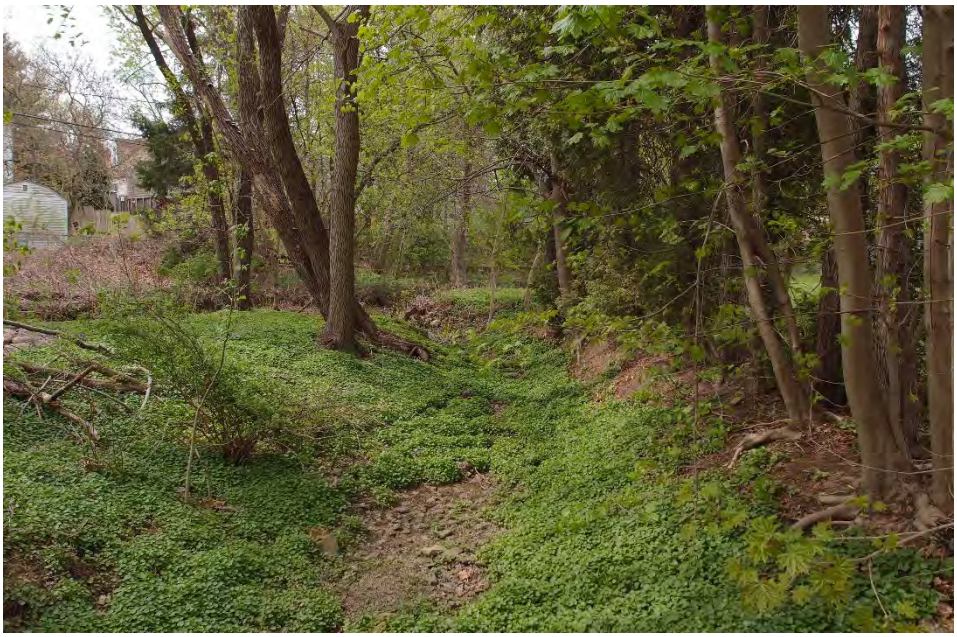

Figure 7: Historic channel in Grove Park

4.0 Alternatives Analysis

The Project Delivery Team (PDT), together with the Township of Abington, have considered five locations within the Township for ecosystem restoration, and after preliminary discussions, decided to focus efforts on Roychester Park and Grove Park (described in Section 1). The PDT met again with Township Officials and the local Environmental Advisory Committee (EAC) to further explore opportunities at the two identified locations. The PDT recommended the following three preliminary alternatives for more detailed investigations:

- No Action
- Proposed Action and Alternatives at Roychester Park
- Proposed Action and Alternatives at Grove Park

4.1 No Action

The No Action Alternative (without project condition) is required to be evaluated as prescribed by the NEPA and Council of Environmental Quality (CEQ). The No Action Alternative serves as a baseline against which the Proposed Action and alternatives are to be evaluated. Evaluation of the No Action Alternative involves assessing the environmental effects that would result if the proposed action did not take place.

Under the No Action alternative, riparian and wetland habitat at Roychester and Grove Parks along Sandy Run Creek would not be stabilized or naturalized. Ecosystem

function along Sandy Run Creek at Roychester Park and Grove Park would not improve. The No Action Alternative would not meet the purpose and need for the study.

4.2 Proposed Action and Alternatives at Roychester Park

At Roychester Park, opportunities exist to stabilize eroding banks, reconnect the floodplains, and restore riparian and wetland habitat along the eroded above ground reaches of the creek (approximately 800 linear feet). This would include restoring riparian and wetland habitat within Roychester Park where the stream banks are currently extremely eroded (Figures 2 and 3). The proposed action includes the following components.

- Bank Stabilization: Stream banks will be regraded, stabilized, and planted to reduce erosion and sedimentation in this stretch of Sandy Run.
- Culvert Replacement: Replace two culverts with pre-fabricated steel footbridges.
- Sanitary Sewer Relocation: Replace and relocate approximately 760 feet of sewer line and manholes that have been exposed due to ongoing erosion.
- Riparian Enhancement: provide 20 to 25 feet of continuous riparian buffers along the creek, to the extent possible.
- Upland Native Planting: plant a native wildflower meadow near Corinthian Avenue on a hill that has little recreational value.

In addition, several components of the proposed action were considered as alternatives but eliminated because they did not meet the purpose and need of the proposed action. These include the following:

- Daylighting approximately 150 linear feet of Sandy Run Creek currently below ground - eliminated because it conflicts with recreational uses at the park, as it is located at the bottom of a sledding hill.
- Wetland enhancement adjacent to Corinthian Avenue– eliminated because hydrology at the location was not appropriate for wetland enhancement, with a low potential for success.
- Storm water improvements at Corinthian Avenue – eliminated because existing infrastructure is sufficient (i.e., low potential for improvements) and potential conflicts with native riparian plantings undertaken by Abington Township.
- High flow diversion to the skating rink – eliminated because of recreational conflicts; it has the potential to flood the field which is also used for other sports such as football.

The alternatives considered at Rochester Park and are compared in Table 1.

Table 1: Summary Roychester Park Alternatives

Alternative	Benefits	Potential Issues	Conclusion
Roychester Alternative 1: No action	None	Will not provide any ecological or societal benefit	Not recommended
Roychester Alternative 2: Stream Restoration, including: Bank Stabilization, Sanitary Sewer Relocation, Riparian Zone Enhancement, and potential Upland Native Plantings	• Reduction in erosion and sedimentation in Sandy Run • Removal of sanitary sewer line from stream bed, which will prevent potential failure and associated contamination of Sandy Run and future utility work from needing to occur in the stream bed • Restoration of approximately 0.6 acres of riparian buffer habitat • Creation of approximately 0.15 acres of wildflower meadow		Recommended
Roychester Alternative 2a: Proposed Action with Daylighting Sandy Run	• Provide all the benefits of the proposed action and additional ecological benefits by reconnecting an additional 150 feet of Sandy Run with the floodplain	• Conflicts with recreational uses	Not recommended
Roychester Alternative 2b: Proposed Action with Wetland Enhancement near Corinthian Avenue	• Creation of approximately 0.3 acres of biofiltration area planted with wetland species • All the benefits of the proposed action and additional ecological benefits by enhancing wetlands, if successful	• Hydrology at this location is not appropriate for wetlands; there is a low potential for success	Not recommended
Roychester Alternative 2c: Proposed Action with Storm water Improvements at Corinthian Avenue	• All the benefits of the Alternative 2	• Existing infrastructure is sufficient (i.e., low potential for improvement) • Potential conflicts with native riparian plantings undertaken by Abington Township.	Not recommended
Roychester Alternative 2d: Proposed Action with High Flow Diversion to Skating Rink	• All the benefits of the proposed action	• Conflicts with recreational uses	Not recommended

4.3 Proposed Action and Alternatives at Grove Park

At Grove Park, opportunities exist to reconnect the floodplains and restore riparian habitat by removing the concrete lining on an approximately 400 linear foot portion of the stream bed (Figures 4 and 5) and the gabion baskets lining approximately 1,300 linear feet of stream bank (Figures 5 and 6) and use natural stream stabilization methods and native vegetation plantings. The forested floodplain south of Sandy Run contains wetlands and two ephemeral tributaries; parts of these may be remnants of the former main stem of Sandy Run Creek within Grove Park (Figure 7). The forested floodplains are dominated by invasive species (especially multiflora rose [*Rosa polyantha]*). The tributaries are degraded due to sedimentation, disconnection from regular flow, and predominance of invasive plants. The forested floodplain and wetland habitat will be enhanced by relocating a tributary through the forested floodplain to increase storm water storage within the forested floodplain.

- Stream Naturalization and Stabilization: Remove existing gabion baskets, regrade banks with stream benches to better connect the main channel with the forested riparian buffer. Remove 370 linear feet of concrete channel bottom and replaced with stream substrate of riprap choked with smaller stone. Provide additional stream stabilization using large woody debris.
- Riparian Enhancement: Plant riparian area from the top of bank to a width of approximately 50 feet on both sides of the stream with native tree, shrub, and herbaceous species. Plant upland areas with native trees, shrubs and herbaceous plants to expand the riparian buffer into open high ground and connect the riparian buffer to the existing adjacent forested floodplain.
- Expand Walking Path: Expand existing walking path with mulch paths or boardwalks through stream or wetland areas to improve public access. Add interpretive sign to educate the general public on the restoration project and the value of wetlands and their ecosystem services.
- Install New Footbridge: A new pre-fabricated steel footbridge will be installed near the Easton Road entrance to the park.
- Forested Floodplain Enhancement: Excavate a tributary channel in a low-lying area of the forested floodplain. Fill the stormwater channel at the east end of the park and redirect the storm water outfall into the excavated channel. The goal is to utilize the filtrating and storage capacity of the forested floodplain and wetlands in the park. Excavate small areas in the forested floodplain to enhance wetland functions. Remove multiflora rose from this section of the park.

The proposed action without the forested floodplain enhancement was also considered but eliminated because it does not provide all the potential ecosystem benefits of the proposed action. The alternatives considered at Grove Park are compared in Table 2.

Table 2: Summary of Grove Park Alternatives

Alternative	Benefits	Potential Issues	Conclusion
Grove Park Alternative 1: No action	None	Will not provide any ecological or societal benefit	Not recommended
Grove Park Alternative 2: Proposed Action	• Removal of gabion baskets and naturalization of stream banks along 980 linear feet of creek • Removal of concrete stream bed in approximately 370 linear feet of creek • Enhancement of approximately 2.3 acres of riparian buffer habitat • Improved walking trail and environmental education in the project area. • Re-introduction of 750 linear feet tributary channel to take advantage of the natural water storage and filtration capabilities of the existing forested floodplains and reduce flows and erosion in the main channel. • Provides opportunity to enhance forested wetlands.	• Dog Park fencing may need to be reconfigured to accommodate increased riparian buffer footprint • Needs to be planned in a manner to avoid effects on forested wetlands. • Mulch path to be expanded in manner to avoid fill in wetlands • .	Recommended
Grove Park Alternative 2a: Proposed Action without Forested Floodplain Enhancement	• Benefits listed in Alternative 2 with the exception of the benefits to the forested floodplain.	• Dog Park fencing may need to be reconfigured to accommodate increased riparian buffer footprint. • No additional flood storage in forested floodplains during storm events.	Not recommended

4.4 Detailed Description of the Proposed Action

Based on the analysis of alternatives, the recommended plan and proposed action for restoration along Sandy Run includes Alternative 2 at Roychester Park and Alternative 2 at Grove Park. While final plans are still in development, the general plans for the 65% design for Roychester Park and Grove Park are depicted in Figure 8 and Figure 9, respectively. The recommended plan minimizes negative effects while maximizing habitat benefits in Sandy Run. The recommended plan was also selected with consideration for existing and adjacent land uses, economics, real estate, and recreational value. The proposed action provides the greatest ecological uplift and benefits to the local community.

4.4.1 Roychester Park

The project in Roychester Park was designed to be compatible with Abington's current stormwater efforts at the park; specifically, the Abington "Growing Greener" project (see Figure 8). The Abington "Growing Greener" project was funded by a PA DEP grant and constructed in 2019.

To reduce erosion and sedimentation, approximately 840 linear feet of the stream bank in Roychester Park will be regraded, stabilized, and re-planted with native plants A list of plantings is contained in Table 3. These plants will be planted in Reaches A, B, C or D(see Figure 8). This includes 100 linear feet of floodplain bench construction on both banks in Reach A, 390 linear feet on the river left bank in Reach B, and 350 feet on the river right bank in Reach C (see Figure 8). Typical floodplain bench sections for these reaches will vary approximately 5-10 feet in width. Additionally, approximately 75 square feet of riprap will be placed around the headwall to stabilize eroded banks.

Table 3: Possible Planting Plan

PLANTING ZONE	COMMON NAME	TYPE	SCIENTIFIC NAME
RIPARIAN	SEEDING - RIPARIAN FORMULA		
RIPARIAN TREE	GREEN ASH	5' HT., CONTAINER	FRAXINUS PENNSYLVANICA
RIPARIAN TREE	SILVER MAPLE	5' HT., CONTAINER	ACER SACCHARINUM
RIPARIAN TREE	AMERICAN SYCAMORE	5' HT., CONTAINER	PLATANUS OCCIDENTALIS
RIPARIAN TREE	RIVER BIRCH	5' HT., CONTAINER	BETULA NIGRA
RIPARIAN TREE	SWAMP WHITE OAK	5' HT., CONTAINER	QUERCUS BICOLOR
RIPARIAN TREE	BLACK WALNUT	5' HT., CONTAINER	JUGLANS NIGRA
RIPARIAN TREE	SWEET GUM	5' HT., CONTAINER	LIQUIDAMBAR STYRACIFLUA
RIPARIAN TREE	BLACK GUM	5' HT., CONTAINER	NYSSA SYLVATICA
RIPARIAN SHRUB	SMOOTH ALDER	3' HT., CONTAINER	ALNUS SERRULATA
RIPARIAN SHRUB	SILKY DOGWOOD	3' HT., CONTAINER	CORNUS AMOMUM
RIPARIAN SHRUB	COMMON WINTERBERRY	3' HT., CONTAINER	LLEX VERTICILLATA
RIPARIAN SHRUB	RED CHOKEBERRY	3' HT., CONTAINER	ARONIA ARBUTIFOLIA
RIPARIAN SHRUB	VIRGINIA SWEETSPIRE	3' HT., CONTAINER	ITEA VIRGINICA
RIPARIAN SHRUB	RED-OSIER DOGWOOD	3' HT., CONTAINER	CORNUS SERICEA
RIPARIAN SHRUB	GRAY DOGWOOD	3' HT., CONTAINER	CORNUS RACEMOSA
RIPARIAN SHRUB	SILKY WILLOW	3' HT., CONTAINER	SALIX SERICEA
LIVE STAKE	SEEDING - RIPARIAN FORMULA		
LIVE STAKE	SILKY DOGWOOD	36" LIVE STAKE	CORNUS AMOMUM
LIVE STAKE	BLACK WILLOW	36" LIVE STAKE	SALIX NIGRA
LIVE STAKE	SHINING WILLOW	36" LIVE STAKE	SALIX LUCIDA
LIVE STAKE	RED-OSIER DOGWOOD	36" LIVE STAKE	CORNUS SERICEA
LIVE STAKE	RED WILLOW	36" LIVE STAKE	SALIX DISCOLOR
LIVE STAKE	SILKY WILLOW	36" LIVE STAKE	SALIX SERICEA
LIVE POLES			
LIVE POLE	SHINING WILLOW	6' LIVE POLE	SALIX LUCIDA
LIVE POLE	RED WILLOW	6' LIVE POLE	SALIX DISCOLOR
LIVE POLE	SILKY WILLOW	6' LIVE POLE	SALIX SERICEA

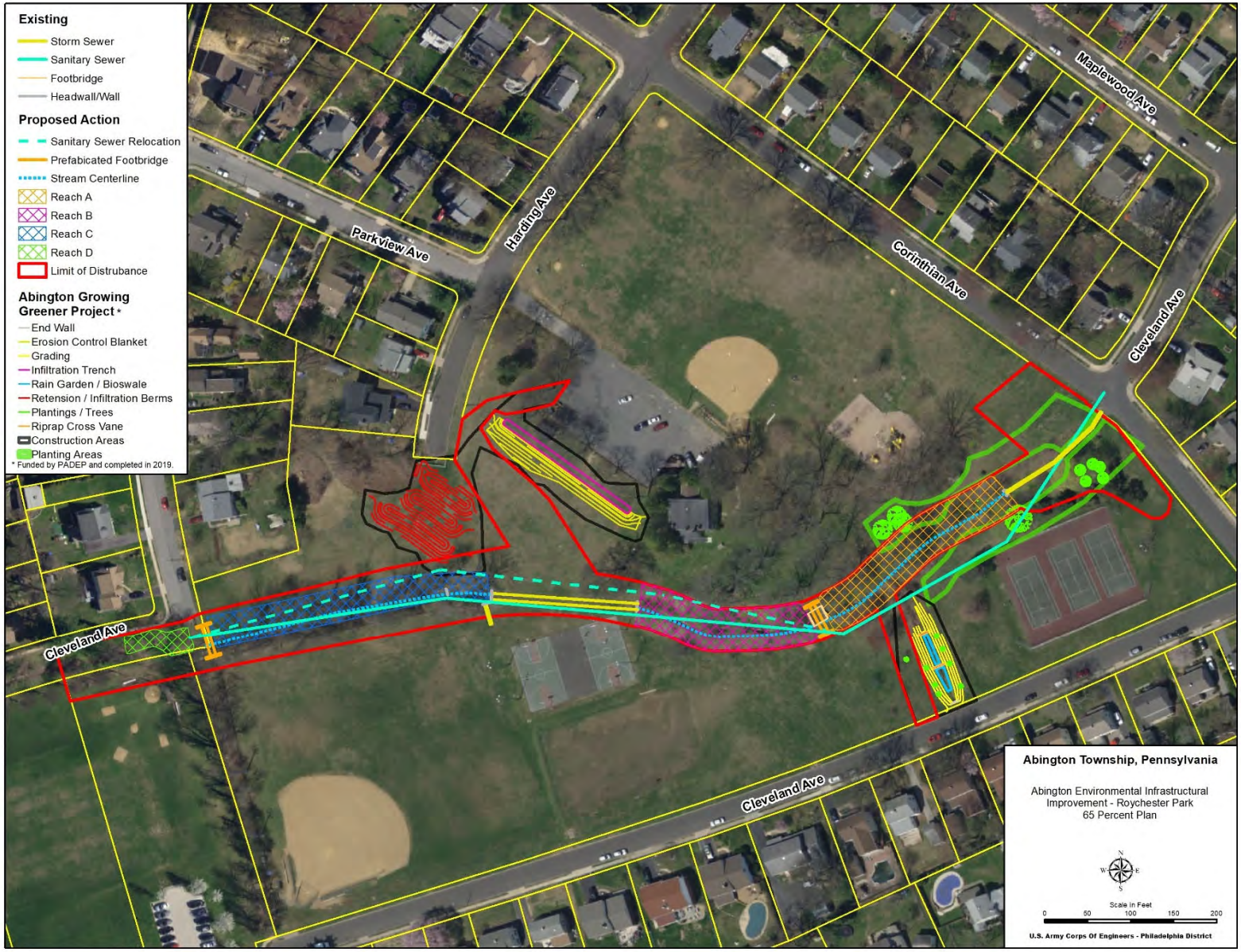

Figure 8: Conceptual design for Roychester Park (Alternative 2)

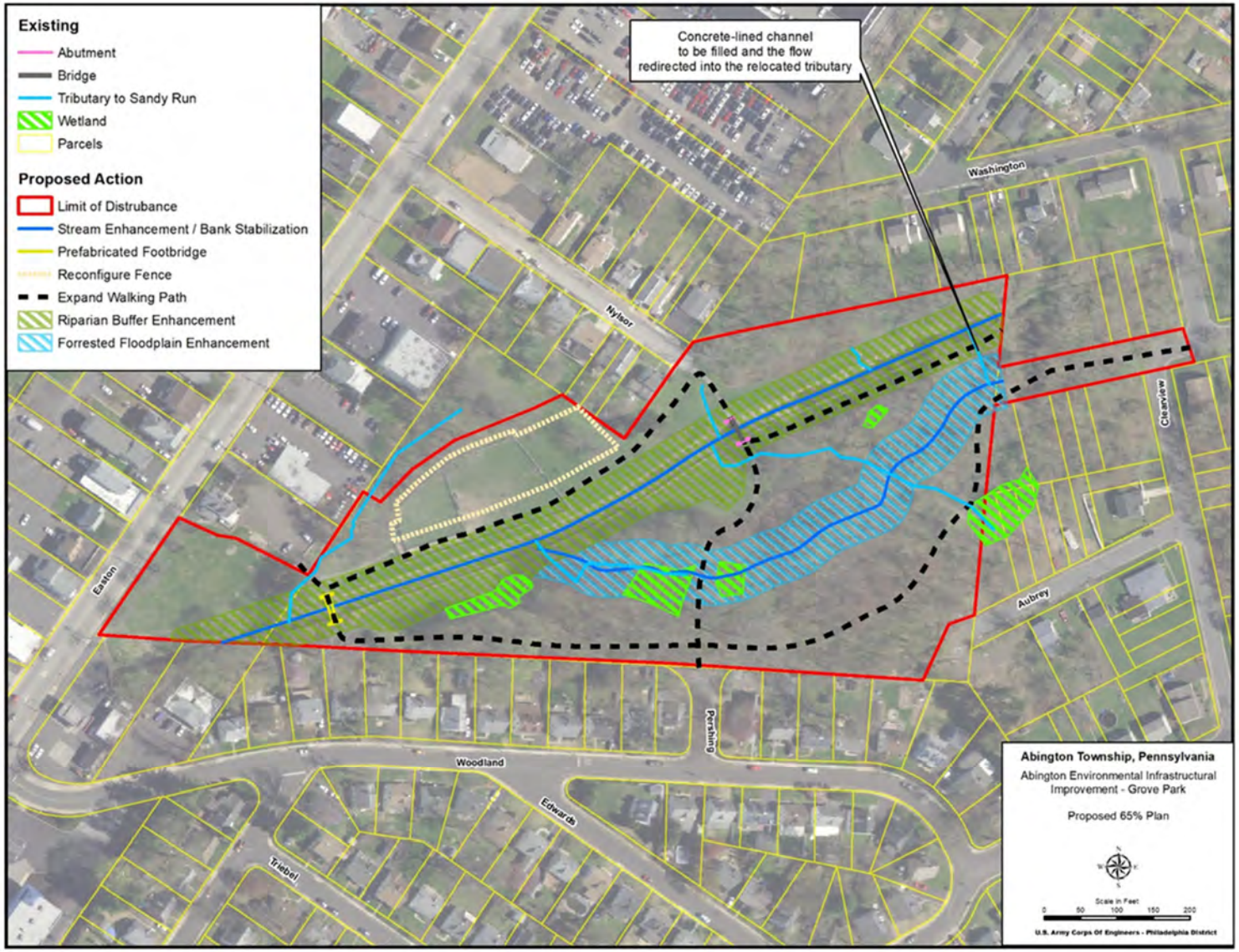

Figure 9: Conceptual design for Grove Park (Alternative 2)

Approximately 75 linear feet of the Sandy Run stream channel will be realigned in Reach D. The existing channel will be filled, and a similar size channel will be excavated. The stream channel fill and excavation will be approximately 10 feet wide and 4 feet deep. The banks will be stabilized with riprap choked with smaller stone, to a depth of 3 feet. The stream will have a total width of approximately 8 feet from bank to bank with 3H:1V side slopes and a longitudinal grade of approximately 1.5%, consistent with the existing stream channel in this area.

Targeted areas of the riparian zone along Sandy Run (approximately 0.6 acres) will be enhanced and connected to provide 20 to 25-foot continuous riparian buffers along the creek, to the extent possible. These will be planted with native riparian trees and herbaceous plants consistent with the Township's recent "Growing Greener" project. Table 3 provides a list of possible native plants that could be planted in reaches A, B, C, or D.

Two existing culverts within the stream will be replaced with pre-fabricated steel footbridges. The first of these culverts is located near Silver Ave between Reaches C and D and the other is located near the center of the park between Reaches A and B (see Figure 8).

In multiple locations throughout the Roychester Park reach of Sandy Run Creek, the sewer lines and manholes have been exposed due to ongoing erosion. The sanitary sewer will be relocated by removing approximately 755 feet of existing 10" vitrified clay sewer pipe, 2 concrete manholes, approximately 90 feet of existing 8" vitrified clay sewer pipe and 1 sanitary clean out. Approximately 780 feet of 10" PVC sewer pipe and 2 precast reinforced concrete manholes will then be installed in an alignment outside of the stream to eliminate future erosive damage. The pipe will be relocated outside of the eroding bank (see Figure 8).

The work at Roychester Park may also include the planting of a wildflower meadow on an existing upland adjacent to the stream. This wildflower meadow would be planted with native flowering species to support local pollinators.

4.4.2 Grove Park

Approximately 1,250 linear feet of Sandy Run will be regraded, stabilized, and re-planted with native plants in Sandy Run in Grove Park (Figure 9). The mainstem will remain in its current channel, but meanders for the low flow course (thalweg) will be created using large trees and boulders. The existing gabion baskets will be removed, and the stones will be reused and incorporated into the proposed design features. The banks will be re-graded with stream benches to better connect the main channel with the forested riparian buffer and more frequent access to the forested wetland enhancement area. The existing 370 linear feet of concrete channel bottom will be removed and replaced with stream substrate of riprap choked with smaller stone to a depth of approximately 3 feet, keeping the overall invert/slope the same as existing conditions. The banks will be bio-engineered where possible. Examples of situation where bio-engineering may be ruled out include areas where velocities/shear stresses are too

high or where space is limited, such as steep slopes (rock can be placed on steeper slopes, typically).

The riparian buffer will be planted with native tree, shrub, and herbaceous species and will be approximately 50 feet in width from the top of bank on both sides of the stream. Where needed, additional stream stabilization will be provided by using large woody debris. Upland plantings of native trees, shrubs and herbaceous plants will expand the riparian buffer into open high ground and will connect the riparian buffer to the existing adjacent forested area.

The dog park fence will be reconfigured to maintain the same area using approximately 510 linear feet of new split rail fence and the existing split rail fence. A new pre-fabricated steel footbridge will be installed near the Easton Road entrance to the park.

Approximately 70 linear feet of existing concrete channel will be removed and local drainage will be redirected by constructing a new concrete cutoff wall into a small historic tributary of Sandy Run located in the forested floodplain area on the eastern side of Grove Park. This tributary will be re-introduced with the goal increasing flood storage by utilizing the filtrating and storage capacity of the forested floodplain and wetlands in the park. The channel will be defined by excavating in the forested floodplain area. This channel will be approximately 750 linear feet long, 12 feet wide, and 2.5 feet deep, and have a longitudinal slope of approximately 0.5%.

Large woody debris will be used to dampen velocity, create storage, and improve habitat diversity. A biodegradable erosion control mat will be used for stabilization of the tributary channel prior to the establishment of vegetation. The outlet to the mainstem will be re-routed, leaving a 250-foot length of existing stream channel that will no longer receive flow; but resulting in 200-foot net increase in stream length meandering through the forested floodplain. Targeted areas within the forested floodplain will be graded to facilitate wetland function and provide additional habitat variability. Tree removal will be avoided and minimized as much as possible, and any large woody debris removed from the site will be reused to the extent possible. The goal is to improve ecosystem function in this area by improving habitat diversity. Habitat diversity will be increased by 1) enhancing forested floodplain development by improving on-site storage of more frequent smaller rain events through within the forested floodplain and 2) enhancing forested upland by expanding the riparian buffer into open higher ground. Additional benefits associated with directing the stormwater channel through the forested floodplain and channel creation will be to alter timing, reduce peak flows, and allow natural treatment of stormwater runoff through the adjacent wetlands.

An existing walking path will be expanded with mulch paths or boardwalks to improve public access to the forested area. An interpretive sign may be added to help educate the general public on the restoration project and the value of wetlands and their ecosystem services.

5.0 Existing Environment

The project is located in two separate community parks within the urbanized Sandy Run Creek watershed. Roychester Park and Grove Park contain upper headwater segments of Sandy Run Creek. At Roychester Park, the stream channel runs alongside recreational fields and a school and is experiencing high rates of erosion and sedimentation due to runoff from surrounding neighborhoods. At Grove Park, the stream channel was previously channelized, lined with cement, and armored with gabion baskets, which stabilized this segment of the stream but prevents the stream from accessing its floodplain and providing aquatic habitat. The high ratio of impervious surfaces within the Sandy Run Creek watershed have impacted the function and health of its stream network, causing significant erosion and sedimentation problems and reducing the quality and quantity of aquatic habitat.

The Sandy Run Creek watershed is 12.6 square miles and drains portions of Abington, Upper Dublin, Springfield, and Whitemarsh Townships in the eastern portion of Montgomery County, Pennsylvania. The watershed is home to approximately 37,500 people and the population density for the watershed is approximately 3000 persons per square mile, roughly twice that of the county as a whole (Gaadt Perspectives 2001). Stream channels within the watershed have not been able to keep up with the continual reduction in the watershed's absorptive capacity, floodplain access, and increases in runoff.

5.1 Air and Water Quality

5.1.1 Air Quality

Ambient air quality is monitored by PADEP and is compared to the National Ambient Air Quality Standards (NAAQS) throughout the state, pursuant to the Clean Air Act of 1970. Six principal "criteria" pollutants are part of oxides of nitrogen (NO_x), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). Stationary sources include power plants that burn fossil fuels, factories, boilers, furnaces, manufacturing plants, gasoline dispensing facilities, and other industrial facilities. Mobile sources include vehicles such as cars, trucks, boats, and aircraft.

The project is located within Montgomery County, which is included in the Philadelphia-Wilmington-Atlantic City Nonattainment Area, PA-NJ-MD-DE (Philadelphia-Wilmington-Atlantic City Area) marginal ozone nonattainment for the 2008 8-hour ozone (oxides of nitrogen [NOx] and hydrocarbons [HC]) NAAQS (Appendix A).

5.1.2 Water Quality

Pennsylvania, as required by the Federal Clean Water Act (CWA), has established water quality standards that apply to all streams and other waterbodies in the Commonwealth. The

water quality standards, codified in Title 25 Pennsylvania (PA) Code Chapter 93, establish water quality criteria that need to be maintained to protect designated water uses.

The protected water use designation for a given waterway is an indicator of its value for the protection and propagation of aquatic life. Since each protected use has chemical and biological characteristics, and other stream conditions that need to be maintained, the designations are also indicators of stream quality. Therefore, the designations can be used to prioritize the unprotected stream and stream valley resources in a municipality. Sandy Run Creek is the main tributary of the Wissahickon Creek. The Wissahickon Creek Basin has two designated uses including Trout Stocking (TSF) and Migratory Fish (MF) (25 PA Code 93.9f). The protected TSF use designation requires the “maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat” (25 PA Code 93.3). The protected MF use designation requires the “passage, maintenance and propagation of anadromous and catadromous fishes and other fishes which move to or from flowing waters to complete their life cycle in other waters” (25 PA Code 93.3).

The Pennsylvania Department of Environmental Protection (DEP) is required under Section 303(d) of the CWA to list the stream segments in the State that do not meet water quality standards or do not achieve designated use. This list is referred to as the "Impaired Waters and 303(d) List." Sandy Run Creek watershed was included as part of the 303(d) listing in 1998 and is still listed as of 2020 (PA DEP 2020). The 2020 Pennsylvania Integrated Report map viewer shows Sandy Run having an impairment for the TSF designated use (PA DEP 2020). The list attributes the impairment of the creek's designated use to urban runoff, including storm sewers, municipal and industrial point sources, and habitat modification (PA DEP 2020).

DEP is required to develop Total Maximum Daily Loads (TMDLs) for impaired waters to meet their designated uses. A TMDL allocates loading to a creek for both point and non-point sources, including a designated margin of safety. Permits for point source discharges (NPDES permits) will be adjusted over time to become compliant with the TMDL (Gaadt Perspectives 2001). TMDLs for Sandy Run as part of the Wissahickon Creek Basin were developed in 2003 for nutrients and sediment (PA DEP 2020).

5.2 Wetlands

Wetlands are located in the project area in both Roychester and Grove Parks. While no wetlands were mapped in either area in the USFWS National Wetlands Inventory (NWI 2017), USACE biologists identified wetlands within the project area at both sites. A complex of palustrine forested wetlands (NWI category PF01A or a palustrine forested broad-leaved deciduous wetland that gets temporarily flooded) is located on the eastern side of Sandy Run

in Grove Park. These forested wetlands total approximately 0.5 acre. A small emergent wetland is also located within the floodplain of Sandy Run Creek in Roychester Park. Wetland delineations were completed for the project sites in 2019 and 2020, and are described in further detail in Appendix B.

5.3 Aquatic Resources

5.3.1 Fish

Aquatic habitat within the Sandy Run Creek is typical of stressed urban streams, containing minimal species diversity. A study of the Wissahickon Creek watershed was completed by the Wissahickon Valley Watershed Association (WVWA) in 2017, using data collected from 2004 to 2016. As part of this study, data was collected at three locations in and along Sandy Run. Data collected nearest to the project area (collected and analyzed from 2011 – 2013) demonstrated that fish habitat in the upper reaches of Sandy Run Creek was marginal. Similarly, fish habitat throughout the entire length of Sandy Run Creek was marginal. Gravel and sand were the dominant substrate components throughout the creek. One or more locations in Sandy Creek (not near the project site), were considered relatively deep, contained above average riffle conditions and contained longnose dace (*Rhinichthys cataractae*). One location downstream from the project exhibited relative paucity of tessellated darters (*Etheostoma olmstedi*) and centrarchids, likely due to more turbid water conditions and wastewater treatment plant discharge. One trout was collected further downstream near the confluence with the Wissahickon Creek, which suggested that the fish had overwintered in the Wissahickon Creek Watershed. This is approximately 0.5 mi from the upstream extent of the trout stocking zone. Researchers concluded that this was a positive sign that water quality (in at least some parts of the watershed) is suitable for some salmonids to overwinter (WVWA 2017).

There is no Essential Fish Habitat in the project area pursuant to the Magnuson-Stevens Fishery Conservation and Management Act of 1976. In a letter dated 2017, NMFS stated that no NOAA trust resources are located in the project area. NMFS has identified resources within the Schuylkill River and in the lower portions of Wissahickon Creek including diadromous species, but both the natural and man-made conditions of Sandy Run Creek and the upper portions of Wissahickon Creek do not contain habitat that supports these species. As a result, they will not be providing any additional comments on this project beyond expressing their support for the ecological restoration of this waterway.

5.3.2 Benthic Macroinvertebrates

Benthic macroinvertebrates were collected from 2011-2013 to understand the macroinvertebrate community throughout the stream system (WVWA 2017). The study utilized

the Pennsylvania's index of biotic integrity (IBI) which uses six metrics for taxa richness, diversity, and pollution tolerance to measure a stream's ability to support healthy aquatic communities.

The study found that the Wissahickon Creek, as well as sites sampled within Sandy Run all had an IBI below 26% for all sampling events, indicating all sites were impaired. The study found that there were few or no sensitive individuals at any of the Sandy Run sites, and that diversity was low for all sites and sampling events. Macroinvertebrate communities throughout the stream system were typically dominated by one taxon, Chironomidae, commonly known as midges. Overall, there was little variability throughout the watershed or over the study years (WVWA 2017).

5.4 Wildlife Resources

With very limited open space or intact riparian areas in the watershed, there is limited habitat for wildlife resources. The white-tailed deer (*Odocoileus virginianus*), chipmunk (*Tamias striatus*), woodchuck or groundhog (*Marmota monax*), opossum (*Didelphis virginiana*), skunk (*Mephitis spp.)*, red fox (*Vulpes vulpes*), eastern cottontail (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), big brown bat (*Eptesicus fuscus*), little brown bat (*Myotis lucifugus*), muskrat (*Ondatra zibethicus*), eastern mole (*Scalopus aquaticus*), mouse and rat species (Muridae), and the gray squirrel (*Sciurus carolinensis*) are common mammalian species that occur throughout the Sandy Run Creek Watershed. These species are also known throughout the rest of the State. The watershed generally lacks species diversity as a direct result of the elimination of habitat.

A Natural Areas Inventory (NAI) was prepared for Montgomery County by The Nature Conservancy in 1995. The NAI contains information on the locations of rare, threatened, and endangered species and of the highest quality natural areas in the county. None of the 59 priority sites identified within the NAI, were located within the Sandy Run Creek watershed. In addition, none of the Important Bird Areas designated by the Audubon Society are located within the watershed as it is primarily suburban in nature (>50% residential and 12% non-residential) and consists of less than 1,200 acres of greatly dispersed woodlands, the habitat for sizeable or unique biological resources is limited (Gaadt Perspectives 2011).

While the project is located in a heavily developed area, it is possible that several protected species may use the habitat in the project area, as well as several birds protected under the Migratory Bird Treaty Act. Threatened and endangered species that may be in the project area are outlined in the following section. A list of migratory birds that may be present in the project area can be found in the IPaC List located in Appendix C.

5.5 Threatened and Endangered Species

Responses to the project's NEPA scoping letter in 2017 did not identify any known resources of concern in the project area (Appendix A). However, a species list generated using the Information for Planning and Consultation (IPaC) tool on December 2, 2020 indicates that the project site is located within the range of the Federally endangered Indiana bat (*Myotis sodalis*) and Federally threatened northern long-eared bat (*Myotis septentrionalis*) (USFWS 2020) (Appendix C). Based on the results of a Pennsylvania Natural Diversity Inventory (PNDI) screening, which accounts for known maternity roosts or hibernacula for these species, no such habitat is located in the vicinity of the project area.

A PNDI search (March 20, 2017, re-verified 12-18-20) indicated no known effects to threatened and endangered species and/or special concern species and resources within the project areas (PANHP 2017, 2020) (Appendix C). This PNDI screening was coordinated with the Pennsylvania Department of Conservation and Natural Resources (DCNR) in 2019 (see Appendix A). DCNR determined that the project is not likely to affect species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features, based on the nature of the project, the immediate location, and DCNR's detailed resource information (letter dated June 2019). Furthermore, the PNDI concluded "no known impacts" to threatened and endangered species and/or special concern species and resources within the project area under the purview of PA Game Commission, PA Fish and Boat Commission, and the U.S. Fish and Wildlife Service.

5.6 Floodplains

Much of the proposed action occurs within the base floodplain of Sandy Run Creek and its tributaries. Executive Order 11988 requires Federal agencies to avoid to the extent possible the long and short-term adverse effects associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

5.7 Cultural Resources

As a Federal agency the USACE has certain responsibilities for the identification, protection and preservation of cultural resources that may be located within the Area of Potential Effect (APE) associated with the proposed action. Present statutes and regulations governing the identification, protection and preservation of these resources include the National Historic Preservation Act of 1966 (NHPA), as amended; the National Environmental Policy Act of 1969; Executive Order 11593; the regulations implementing Section 106 of the NHPA (36 CFR Part 800, Protection of Historic Properties, August 2004); and the U.S. Army Corps of Engineers Identification and Administration of Cultural Resources (33 CFR 305). Significant cultural

resources include any material remains of human activity eligible for inclusion on the National Register of Historic Places (NRHP). This work is done in coordination with the Pennsylvania State Historic Preservation Office (PASHPO), Tribal Nations and other consulting parties.

The USACE contacted the PASHPO and the Tribes during the scoping period in 2017 (Appendix A). The PASHPO stated that there may be above ground historic properties within the project area of potential effect; however, the project as proposed will have no effect on historic properties. They further stated that the APE has a high probability for significant archaeological sites and recommended a Phase I archaeological survey (see Section 6.7 for results). There were no comments from the Tribes.

5.7.1 Description of Undertaking

The proposed action/recommended plan includes Roychester Park Alternative 2 and Grove Park Alternative 2. Roychester Park Alternative 2 consists of streambank restoration, storm water improvements, upland wildflower meadow, and sanitary sewer relocation. Grove Park Alternative 2 consists of stream restoration with relocation of storm water outfalls, tributary relocation, and riparian floodplain enhancement. See Section 4.4 for a detailed description of the proposed action.

5.7.2 Area of Potential Effect

The area of potential effects (APE) for below ground cultural resources includes the boundaries of both parks, Roychester Park and Grove Dog Park, and the limits of disturbance that would be caused during construction along with access and staging. The APE for above ground cultural resources includes those locations that would be anticipated to have effects visually from the completed project.

5.7.3 Cultural Context and Known Resources

Native American Cultural Context

In order to better understand the changes evident in Native American archaeology over the past 16,000 years, archaeologists have developed temporal frameworks, or chronologies, to divide Middle Atlantic prehistory into periods defined on the basis of diagnostic tools, ceramics, inferred cultural adaptations, associated radiocarbon dates, and settlement patterns. Over the past few decades, the basic Middle Atlantic chronological framework has evolved through an assortment of observed environmental, cultural, adaptive, and stylistic changes. Although, these divisions of time are imperfect, at this point in archaeological history they are necessary for explaining cultural change through time. The cultural chronological framework commonly used for the Middle Atlantic region is divided into three major periods; these are Paleoindian (14,000 B.C. – 8000 B.C), Archaic (8,000 B.C. – 1000 B.C.), and Woodland (1000 B.C. – A.D.

1600). From this, further refinements are made dividing the periods into sub-periods of Early, Middle, and Late.

Historical Context

The earliest recorded European visitors to the lower Delaware Valley arrived in the sixteenth century, although settlement did not occur until the seventeenth century. The principal tribe of Native Americans at the time of European settlement along the Delaware River was the Lenape, who spoke a Unami dialect of the coastal Algonquian language group (Kraft 1986:xv). Early in the 1600s, the Dutch began to settle the area between the Delaware and Hudson Rivers, establishing the colony of New Netherlands from Delaware Bay to Albany. King Charles II granted William Penn in 1691 the charter for Pennsylvania. Pennsylvania was to be a place of safety for the Quakers. With religious tolerance as its main value, Quakers and other religious groups that were persecuted in their home country came to Pennsylvania, with many settling in what is now Montgomery County (HSMCPA 2020). The project area lies within Abington Township, Montgomery County, located northwest of Philadelphia. The name Abington Township came into use around 1702, though there is no formal record of the town's organization (Hocker 1956). Table 4 presents population data for Abington Township, Montgomery County, Pennsylvania for 1800-1980.

Table 4. Population data for Abington Township

Year	Abington Township Population	Year	Abington Township Population
1800	1,080	**1910**	5,896
1820	1,455	**1920**	8,684
1850	1,836	**1930**	18,648
1860	2,058	**1940**	20,857
1870	2,440	**1950**	28,988
1880	2,185	**1960**	55,831
1890	2,703	**1970**	63,625
1900	3,803	**1980**	58,836

The early transportation network leading out of Philadelphia resembled a hub and spoke structure, with roads connecting the City to Wilmington, Delaware, New Hope, York, Easton, Bethlehem, and Lebanon. One of the oldest of Pennsylvania's roads is Old York Road which passes through Abington Township and the project area. The lower part of this road was authorized by the Governor's Council in 1693; however, it had been in use for years prior. The extension of Old York Road was ordered in 1711 (Hocker 1956: 18). A trolley car line was built on Old York Road that ran from Willow Grove to Philadelphia in 1894 and was replaced by bus

service in 1940 (Hocker 1956: 19). The North Pennsylvania Railroad was the first rail line into the project area in 1857 and created an immediate and significant effect on the region's growth (Bean 1884:802). Farmers and millers obtained ready access to the Philadelphia markets, and the city's elites acquired "country" estates a short train ride away. As mill seats had done in the previous century, rail stations became the nucleus for commercial and residential development in the nineteenth century. Trains also heralded the transition from water-powered to steam-powered mills, allowing for increased production and the manufacture of finished iron implements (PDP 1999).

The first recorded mill along Tookany Creek, which runs approximately 2 miles southwest of the project area, was Richard Dungworth's gristmill, built in 1690 (Fisher 1939). Other gristmills were built in following years and became the nucleus for the villages of Shoemakertown, Ashbourne, and Abington Township where the project area is located. It was in Abington that the first Quaker Meeting House in Montgomery County was established in 1697 (Bean 1884:684).

Since a majority of Abington's residents were members of the Society of Friends and thus pacifists, they experienced unease during the time of the American Revolution. The project area was significantly affected by the political and military events of the American Revolution. In 1777, when it became evident that the British were preparing to proceed against Philadelphia, General Washington had his army advance from New Jersey into Pennsylvania, marching down Old York Road passing through Abington Township (Hocker 1956). After the British occupied Philadelphia, the residents of Montgomery County were cut off from commerce with the region's largest port. They also found themselves in harm's way following the defeat of Washington's forces at Germantown and the Continental Army's retreat to Whitemarsh, northwest of the project area. In early December 1777, General William Howe, British commander in Philadelphia, led his army up Old York Road through Cheltenham to attack the Americans before the onset of winter. Skirmishes occurred between the British and American militia at Edge Hill in Cheltenham on December 8, 1777. Although the fighting was largely favorable for the British, Howe decided that American defenses were too strong and returned his forces to Philadelphia (Bean 1884: 688). Following the withdrawal of British forces from Philadelphia in June 1778, Montgomery County residents reclaimed a substantial amount of economic and political stability.

In 1832 Abington contained only about ten to twelve residences and by 1870 there were as many as forty residences (Shaffer 1976). There was also a significant jump in population in Abington from this time, which could be due to the North Pennsylvania Railroad going through Abington Township and creating growth for commercial and residential development. This commercial and residential growth paved the way for the transition of Abington Township from an agricultural landscape to a more suburban landscape. Abington's population continued to grow slowly throughout the nineteenth century. Population growth continued more strongly into

the twentieth century with the updating and construction of roads and the invention of the car. The population of Abington Township more than doubled between 1920 and 1930 and continued to grow following World War II, reaching almost 60,000 people in 1980 and stabilizing around that number up through today.

Identified Historic Properties

Database research was conducted to assess potential effects to recorded historic properties, and to assess the probability for below ground cultural resources, such as Native American archaeological sites.

Research identified 184 non-linear historic sites, 3 linear historic sites and 333 unmapped historic sites within one mile of Grove Dog Park, of which 11 are eligible for or listed on the NRHP. The review identified 51 non-linear historic sites, 3 linear historic sites, and 372 unmapped historic sites within one mile of Roychester Park, of which 16 are eligible for or listed on the NRHP.

5.8 Hazardous, Toxic, Radioactive Waste (HTRW)

Roychester Park, acquired by Abington Township in 1900, was formerly farmland and is now surrounded primarily by residential housing. No particular areas of potential chemical contamination were noted during an initial reconnaissance. Review of historical aerial photographs revealed no buildings or facilities on the site.

Grove Park, acquired by Abington Township in 1977, is dominated by a channelized stream. Some of the surrounding area is residential, but there is an automobile repair facility adjacent to the project area. The current plan does not require extensive earthwork near this facility. No particular areas of potential chemical contamination were noted during an initial reconnaissance. Review of historical aerial photographs revealed no buildings or facilities on the site. Additionally, a search of the PADEP Environmental Site Assessment Database indicates that there has been no contamination at either project site (see Appendix C).

6.0 Environmental Effects

6.1 Air and Water Quality

6.1.1 Air Quality

As stated previously, Montgomery County, Pennsylvania within which the Federal Action will take place is located in the Philadelphia-Wilmington-Atlantic City Area marginal 8-hour ozone nonattainment area.

Construction of the stream restoration project would result in temporary effects on local ambient air quality due to fugitive dust and emissions generated by construction equipment. These temporary effects would not have a significant effect on the long-term air quality of the surrounding area.

General Conformity Review and Emission Inventory

The 1990 Clean Air Act Amendments include the provision of Federal Conformity, which is a regulation that ensures that Federal Actions conform to a nonattainment area's State Implementation Plan (SIP) thus not adversely impacting the area's progress toward attaining the National Ambient Air Quality Standards (NAAQS). In the case of the Abington Environmental Infrastructure Improvement Project, the proposed action is the stabilization and restoration of Sandy Run Creek at Roychester Park and Grove Park, as well as the relocation and replacement of the sanitary sewer line in Roychester Park. The U.S. Army Corps of Engineers, Philadelphia District would be responsible for construction.

There are two types of Federal Conformity: Transportation Conformity and General Conformity (GC). Transportation Conformity does not apply to this project because the project is not funded by the Federal Highway Administration and it does not affect the on-road transportation system. GC however is applicable. Therefore, the total direct and indirect emissions associated with the proposed action must be compared to the GC trigger levels presented in Table 5.

Table 5: General Conformity Triggers

Pollutant	Trigger Level (tons per year)
NOx	100
VOC	50
$PM_{2.5}$	100

The Clean Air assessment/GC review and emission inventory is provided in Appendix D. The GC review and emission inventory includes a list of equipment necessary for construction and an estimate of for NOx, VOC, and $PM_{2.5}$ emissions from the equipment based on the number of engines, engine size (hp), and duration of operation, load factor (LF) (i.e., average percentage of rated horsepower during use). Appendix D provides the emission factors and emission estimates for NOx, VOC, and $PM_{2.5}$ for each individual equipment/engine category and the combined total.

The total estimated emissions that would result from the proposed action is 1.3 tons of NOx,

0.1 ton of VOC, and 0.05 ton of $PM_{2.5}$ (Appendix D). Construction of the project will be completed in approximately 8 months. These emissions are well below the General Conformity trigger levels of 100 tons of NOx and $PM_{2.5;}$ and 50 tons of VOC per year.

General Conformity under the Clean Air Act, Section 176 has been evaluated for the proposed action according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this project because the total direct and indirect emissions from the project are below the conformity threshold values established at 40 CFR 93.153 (b) for ozone (NOx and VOC) in a Marginal Nonattainment Area (100 tons and 50 tons of each pollutant per year); therefore a Record of Non Applicability (RONA) can be found in Section 11.0. The project is not considered regionally significant under 40 CFR 93.153 (i).

6.1.2 Water Quality

Implementation of this project will have temporary effects to water quality during construction due to an increase in turbidity. Best management practices, such as standard erosion and sediment controls, will be used during construction to avoid and minimize these effects. The proposed project is not anticipated to have any long-term adverse effects on water quality in the Sandy Run Creek watershed. It is anticipated that this project will provide water quality improvements for Sandy Run Creek in Abington by stabilizing eroding banks, naturalizing the stream corridor, reconnecting areas of floodplain, and incorporating native plantings.

USACE is designing the project to provide a net increase in aquatic resources function and services and meet the terms and conditions of Nationwide Permit 27 (Aquatic Habitat Restoration), and therefore qualifies for the associated section 401 Water Quality Certificate from PADEP. In addition, the project will comply with Title 25 Pa. Code Chapter 102, Erosion and Sediment Control and Stormwater Management.

6.2 Wetlands

Roychester Park

The proposed action will improve riparian habitat in Roychester Park by stabilizing the eroding banks of Sandy Run, reconnecting the floodplains, and restoring riparian habitat along the eroded above ground reaches of the creek. The proposed action will have no effect on wetlands in Roychester Park. All areas temporarily disturbed during construction will be planted with native plant species appropriate for the habitat type.

Grove Park

The proposed action will improve riparian habitat along Sandy Run in Grove Park by removing gabions and naturalizing this reach through regrading, stabilizing, and re-planting the banks with native plants. The forested floodplain and wetland habitat at Grove Park would be enhanced by redirecting local drainage into a created/re-aligned tributary to increase storm water storage within the forested floodplain. The outlet to the mainstem will be re-routed, leaving a 250-foot length of existing concrete lined channel that will no longer receive flow; but would result in a net increase of approximately 200 feet of stream meandering through the forested floodplain. All areas temporarily disturbed during construction will be planted with native plant species appropriate for the habitat type.

The final plans for the tributary relocation in Grove Park are still in development. Final plans will avoid direct and indirect effects on forested wetlands to the maximum extent practicable. For those areas of existing wetlands that cannot be avoided, work will be designed to minimize adverse effects. The proposed stream channel route was intentionally located along an existing overland flow path through the flat, low lying forested floodplain and intersects two depressional forested wetlands along its path. This alignment will take advantage of the existing onsite hydrology and minimize excavation in the forested area. In the unlikely event that excavation of the new stream channel through wetlands is necessary, there would be a direct impact, resulting in the permanent conversion of 0.01 acre of existing forested wetlands to open water due to becoming part of the new stream channel.

The project intent is to maintain and enhance wetland hydrology in the existing forested wetlands while also providing for peak flow reduction in the main channel of Sandy Run through the creation of a new tributary. Directing stormwater through the new channel in the forested floodplain will alter stormwater timing, reduce peak flows, and allow natural treatment of stormwater runoff through the adjacent wetlands. The project is being designed to maintain and enhance wetland hydrology in the area of the existing wetlands that are located in the path of the proposed stream. This includes grading the new channel no lower than the existing wetlands and designing the new stream's floodplain to encourage water to continue accumulating in the forested wetlands. However, if these efforts are not successful, it is possible that excavation for the new stream channel could result in indirect effects and effectively drain the existing wetlands, meaning that soils would not be saturated for a long enough period of the growing season to support hydrophytic plants or demonstrate hydric soil characteristics. This potential change in hydrology could result in an additional permanent loss of between 0.07 acre and 0.24 acre of forested wetlands. However, the alteration of wetland hydrology is not anticipated and will be avoided to the maximum extent possible. It is anticipated that most of the surface area of these wetlands will continue to function as wetlands and may even grow in size due to the introduction of additional water to the forested area.

In the worst-case scenario, the potentially impacted wetlands would be incorporated into the riparian corridor of the new tributary. Furthermore, the proposed plans include regrading areas along the excavated tributary to facilitate hydrologic conditions suitable for the creation of new wetlands. The project plans are currently being refined as the team works toward the 95% construction plans.

USACE is developing plans with the goal of no net decrease in forested wetland habitat acreage and quality and an overall improvement in forested floodplain habitat quality. These plans will be coordinated with PADEP as they become available. USACE will work with agencies to minimize loss of wetlands and their function.

6.3 Aquatic Resources

Fisheries and other aquatic resources in the project area and in the upper reaches of Sandy Run Creek are extremely limited, likely due to stressors throughout the Sandy Run Creek watershed (WVWA 2017). Minor, temporary effects on aquatic resources could occur during construction. These include direct sediment disturbance, downstream sedimentation, and bypass flows (if used). Best management practices will be used to minimize disturbance to the stream and aquatic resources, including fish, fish habitat, and macroinvertebrates. The project is designed to improve aquatic habitat and therefore would be beneficial. The restoration of the wetlands and riparian habitats in this watershed will have a beneficial effect on downstream aquatic habitat.

6.4 Wildlife Resources

No long-term effects to the wildlife resources in the Sandy Run Creek watershed are anticipated as a result of the proposed action. A Pennsylvania Natural Diversity Inventory (PNDI) screening was completed (PANHP 2017) and subsequently coordinated with the Pennsylvania Department of Conservation and Natural Resources (DCNR) in 2019. In 2019, DCNR screened the project for potential effects to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features. DCNR determined that the project is not likely to affect these resources based on the nature of the project, the immediate location, and DCNR's detailed resource information (letter dated June 2019). An updated PNDI search in December 2020 confirmed previous findings (PANHP 2020). Furthermore, there will be noise and general disturbances in the stream area as a result of construction activities, but these will be temporary in nature and should not have a long-term negative effect on wildlife in the area. The project is designed to provide a long-term positive effect to the wildlife in the Sandy Run Creek watershed by improving habitat quality and availability along the riparian corridor.

6.5 Threatened and Endangered Species

A web based PNDI search and subsequent coordination with State resource agencies have confirmed that no State listed species are located within the project area. However, a web based IPaC screening determined that Indiana bat (Federally endangered) and northern long-eared bat (Federally threatened) may be located in the project area, along with several migratory birds (USFWS 2020). In accordance with the project review procedures provided by the USFWS Pennsylvania Field Office, which directs project proponents to use PNDI to screen projects for potential impacts to species of special concern, including federally listed and proposed species, a PNDI review was completed for this project. The PNDI screening concluded that no further consultation is required for all four of the federal and state agencies that have jurisdiction over federal and state-listed species, including the USFWS, Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, and Pennsylvania Department of Conservation and Natural Resources. This was coordinated with USFWS, who confirmed that no further consultation with their agency is required under Section 7 of ESA, as PNDI constitutes the best available scientific information as PNDI screens for known maternity roosts and hibernacula used by these species, whereas IPaC does not (personal communication dated 31-March-2021). Based on the best scientific data available, the USACE has concluded that the project would not affect these species. Therefore, no further consultation is required under Section 7 of the Endangered Species Act of 1973 as amended by P.L. 96-159. Coordination with USFWS under the Fish and Wildlife Coordination Act is being completed and will be concluded prior to construction. As discussed with USFWS, an informal consultation is appropriate for this project in relation to resources under the purview of the agency (see Appendix A).

No threatened or endangered species under the jurisdiction of NMFS will be impacted by this project. In a letter dated 2017, NMFS stated that there are no species listed as threatened or endangered under the ESA under NMFS jurisdiction (i.e. sturgeon), and that no interagency consultation under section 7 of the Act is therefore needed. Consultation with NMFS will be necessary if any new information or information not previously considered should indicate that project activities may affect listed species.

6.6 Floodplains

This project has been reviewed in accordance with and complies with Executive Order 11988. This project is being completed at the request of the municipality to improve floodplain function and connectivity with the stream channel. An alternative outside of the floodplain would not achieve the basic project purpose; therefore, an in-floodplain alternative is the only feasible option. The project does not involve construction of new facilities within the floodplain and has been designed to minimize harm to the floodplain, and to preserve, restore, and enhance the natural and beneficial values of the floodplain. None of the proposed work would result in an

increase of flood risk, nor will it result in a loss of floodplain surface area, connectivity, or function. The proposed action will be implemented in compliance with minimization plans and flood insurance requirements.

6.7 Cultural Resources

Above Ground Cultural Resources
Although the proposed action for Roychester Park and Grove Park may be in the vicinity of potentially eligible historic structures, the potential to cause visual adverse effects is unlikely due to the temporary effects and limited scope of the project.

Below Ground Cultural Resources
Both Roychester Park and Grove Park have a moderate potential for the presence of intact below ground cultural resources potentially eligible for listing in the National Register of Historic Places (NRHP); therefore, a Phase I cultural resource investigation was conducted within the APE for each park based on the limits of construction.

The Phase IA investigation included background research and literature review of pertinent information on environmental conditions and cultural and historic conditions of the project area, a review of archaeological site forms and locational data maintained on PACRGIS, as well as a review of historic maps related to the project area. The Phase IB investigation consisted of walkover and subsurface testing of the APE within the portions of the project area that would be subject to significant disturbance by construction activities. A total of 34 shovel test pits (STPs) were excavated within the Roychester Park APE and 77 STPs within the Grove Dog Park APE.

No historic properties eligible for or listed on the National Register of Historic Places were found and no additional work is required. A copy of the Cultural Resource Phase I A/B report, and a negative survey form was sent to the PASHPO on February 19, 2021. As of March 29, 2021 we have received not comment. Due to the fact that no cultural material was found, we are assuming that the PASHPO is in concurrence with our *No Historic Properties Found* determination. A copy of the Negative Survey form will be submitted to the Tribes and other Consulting Parties for their review.

6.8 Hazardous, Toxic, Radioactive Waste (HTRW)

Final plans, including grading and excavation plans, are still in development. Excavated soil that requires offsite disposal would be sampled for HTRW and disposed according to all requirements. Soil that remains on site and is used for fill or regrading would not be sampled for HTRW. It is unlikely that the soils will be contaminated to the point of requiring the need to dispose of the soils offsite as a hazardous waste. This assumption is based upon what is

known of the areas' former and current uses and the PADEP Environmental Site Assessment Database results (see Appendix C).

If sampling is necessary prior to construction, the USACE Geo-Environmental Section will prepare and execute a Sampling and Analysis Plan (SAP) for sampling areas with proposed soil disturbance at each of the two sites in accordance with all appropriate guidance and requirements.

If USACE forgoes prior site sampling and analysis, the Contractor will be required to prepare a SAP for review and acceptance by the District. The Contractor will then execute the SAP, prepare the report(s) for District review and acceptance and provide the results to the selected disposal facilities. During construction, contractors will be required to dispose of soils in accordance with all requirements.

6.9 Cumulative Effects

According to CEQ regulations (40 CFR 1508.7), the cumulative effect is defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of who undertakes these actions. The proposed action must be evaluated with the additive effects of other actions in the project area to determine whether all the actions will result in a significant cumulative impact on the natural and human environment of the area.

No other known significant activities are planned within the project area and region that could potentially cumulatively affect the environment in conjunction with the Abington Township Environmental Infrastructure Improvement Project. However, it is expected that positive effects on the natural and human environment will result from the stream bank restoration, sanitary sewer relocation, and tributary relocation and forested floodplain enhancement. Furthermore, the riparian planting component of this project will build on recent native planting work in Roychester Park, which was completed by the municipality through PADEP's "Growing Greener" program. All negative effects associated with this project are short-term and minor. As a result, it is anticipated that future environmental benefits will be realized in the project areas at Roychester and Grove Parks as well as in the surrounding watershed will be realized with respect to improved aquatic and riparian habitats. It has been determined that there will be no cumulative negative effects as a result of this project and long term cumulative beneficial effects will be realized.

7.0 Environmental Justice

In February of 1994 President Clinton signed EO 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This EO directs

Federal agencies “to make achieving environmental justice part of its mission by identifying and addressing, as appropriate disproportionately high and adverse human health or environmental effects of programs, policies, and activities on minority populations and low income populations in the United States….” The purpose of this order is to avoid the disproportionate placement of adverse environmental economic, social, or health impacts from Federal actions and policies on minority and low-income populations. In order to prevent the potential for discrimination and disproportionately high and adverse effects on specific populations, a process must identify minority and low-income populations that might be affected by the implementation of a proposed action or alternatives.

As defined by the “Environmental Justice Guidance Under NEPA” (CEQ 1997), “minority populations” includes persons who identify themselves as Asian or Pacific Islander, Native American or Alaskan Native, black (not of Hispanic origin), or Hispanic. Race refers to Census respondents’ self-identification of racial background. Hispanic origin refers to ethnicity and language, not race, and may include persons whose heritage is Puerto Rican, Cuban, Mexican, Central or South American.

A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations are identified using the Census Bureau’s statistical poverty threshold, which is based on income and family size. The Census Bureau defines a “poverty area” as a census tract with 20 percent or more of its residents below the poverty threshold and an “extreme poverty area” as one with 40 percent or more below the poverty level.

Based on census data collected for Montgomery County, the project area is not one of a minority (19.9%) or low-income population (5%) (US Census Bureau 2020).

8.0 Relationship of Selected Plan to Environmental Requirements, Protection Statutes, and Other Requirements

Compliance with environmental quality protection statutes and other environmental review requirements is ongoing. Table 6 provides a listing of compliance with environmental statutes.

Table 6: Compliance with Appropriate Environmental Quality Protection Statutes and other Environmental Review Requirements

STATUTE	COMPLIANCE STATUS
Clean Water Act	Partial
Coastal Zone Management Act	N/A

STATUTE	COMPLIANCE STATUS
Endangered Species Act	Partial
Fish and Wildlife Coordination Act	Partial
National Historic Preservation Act	Full Compliance
National Environmental Policy Act	Partial
Clean Air Act	Full Compliance
Executive Order 11988 (Floodplains)	Full Compliance
Executive Order 12898 (Environmental Justice)	Full Compliance

NOTE:
Full Compliance: Having met all requirements of the statute, E.O., or other environmental requirements for the current stage of planning.
Partial Compliance: Some requirements of the statute, E.O., or other policy and related regulations remain to be met.
*All applicable laws and regulations will be fully complied with upon completion of the environmental review, obtaining state water quality certification, coastal zone consistency determination, and concurrence with our determination on cultural resources.
Noncompliance: None of the requirements of the statute, E.O., or other policy and related regulations remain to be met.

9.0 Section 404(b)(1) Analysis

A review of the impacts associated with discharges to waters of the United States for the Abington Environmental Infrastructure Improvement Project in Abington, PA is required by Section 404(b)(1) of the Clean Water Act, as amended (Public Law 92-500). This project has been reviewed in accordance with Section 404(b)(1) of the Clean Water Act and has been found to be in compliance. Documentation of the review is located in Appendix E.

10.0 References

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11.0 Record of Non-Applicability (RONA)

RECORD OF NON-APPLICABILITY (RONA)

Project Name: Abington Environmental Infrastructure Improvement Project

Reference: Abington Environmental Infrastructure Improvement Project Environmental Assessment.

Project/Action Point of Contact: Rachel Ward, CENAP-PL-E

Begin Date (tentative): October 2021

End Date (tentative): May 2022

1. Project Description: The project entails improvements to two distinct reaches of Sandy Run Creek in Abington, PA. Improvements will be made by relocation of a sewer line, replacement of culverts, grading and planting degraded sections of the stream channel to restore connection to the floodplain, stabilizing eroding areas with stone, removing concrete lining and gabion baskets, and encouraging a meandering thalweg with stone, logs, and root wads. Additionally, a stormwater outlet will be re-located to create a stream, which will entail grading in a forested area for the new stream channel as well as grading to create depressional areas to encourage on-site storage of runoff and stream overflows. The purpose of this project is to improve channel stability, floodplain function, and aquatic habitat in Sandy Run Creek at Roychester Park and Grove Park in Abington Township, Pennsylvania.

2. An emissions estimate was completed to determine the Nitrogen Oxides (NOx) and Volatile Organic Carbon (VOC) emissions (precursors to ozone formation) associated with the Abington Environmental Infrastructure Project. The total estimated emissions that would result from the construction is 1.3 tons of NOx and 0.1 ton of VOC (Table 1 – Appendix D). Construction of the project will be completed in approximately 8 months. These emissions are well below the General Conformity trigger levels of 100 tons of NOx and $PM_{2.5}$; and 50 tons of VOC per year. The requirements of this rule are not applicable to this project because the total direct and indirect emissions from the project are below the conformity threshold values established at 40 CFR 93.153 (b) for ozone (NOx and VOC) in a Marginal Nonattainment Area (100 tons and 50 tons of each pollutant per year). The project is not considered regionally significant under 40 CFR 93.153 (i).

3. The project described above has been evaluated for Section 176 of the Clean Air Act. Project related emissions associated with the Federal action were estimated to evaluate the applicability of General Conformity regulations (40CFR§93 Subpart B).

4. The project is located in Abington, PA, which has the following nonattainment-related designations with respect to the National Ambient Air Quality Standards (40CFR§81.133): Marginal Nonattainment 20015 8-hour Ozone Standard (primary and secondary).

5. The requirements of this rule do not apply because the total direct and indirect emissions from this project are less than the 100 tons trigger level for NO_x for each project year and significantly below the 50 tons trigger level for VOC (40CFR§93.153(b)(1) & (2)), as VOCs, are typically a fraction of total NOx emissions. The estimated emissions for the project for each pollutant are provided below.

CALENDAR YEAR	MONTHS	TONS NOx	TONS VOC	TONS PM2.5
2021-22	8	1.3	0.1	0.05

6. The project conforms with the General Conformity requirements (40CFR§93.153(c)(1)), and is exempted from the requirements of 40 CFR §93 Subpart B.

Peter R. Blum, P.E.
Chief, Planning Division

Date

APPENDICES

Appendix A: Pertinent Correspondence

Pertinent Coordination and Correspondence

Part 1 – Correspondence during Public Review of the Draft Environmental Assessment and Preparation and Review of the Final Environmental Assessment – Section to be Added After Conclusion of Draft Report Reviews
Part 2 – Correspondence during Preparation of the Draft Environmental Assessment
Part 3 – Correspondence During Scoping

Part 1 – Correspondence during Public Review of the Draft Environmental Assessment and Preparation and Review of the Final Environmental Assessment – Section to be Added After Conclusion of Draft Report Reviews

Part 2 – Correspondence during Preparation of the Draft Environmental Assessment

From:	Minnichbach, Nicole C CIV USARMY CENAP (USA)
To:	PA SHPO Environmental Review
Subject:	USACE Abington_Negative Survey Form_20201116.pdf
Date:	Friday, February 19, 2021 11:03:00 AM
Attachments:	USACE Abington Phase I Report Negative Survey Form_20201116.pdf

Please see the attached negative survey form for the Abington Environmental Infrastructure Improvement Project, Montgomery County, PA.

Thank you

Nicole Cooper Minnichbach
Cultural Resource Specialist and Tribal Liaison
CENAP-PLE
100 Penn Square East
Philadelphia, PA 19107
(O) 215-656-6556
(M) 215-834-1065

From: McCorkle, Richard
To: Ward, Rachel J CIV USARMY CENAP (US)
Subject: [Non-DoD Source] Re: [EXTERNAL] Abington Township Ecological Restoration Project (UNCLASSIFIED)
Date: Wednesday, March 25, 2020 11:06:16 AM

Dear Ms. Ward,

Thank you for following up on these proposed projects, and for including the previous correspondence between me and Mark to refresh my memory. Yes, the informal consultation approach should work well for these projects. I did share your follow up message with the person in my office who oversees our endangered species program to make sure he is comfortable with the approach, but I anticipate he will concur. I will let you know if he has any concerns. Otherwise, I look forward to seeing the draft EA in a few months.

Rick

Richard C. McCorkle
Fish and Wildlife Biologist
U.S. Fish & Wildlife Service
Pennsylvania Field Office
110 Radnor Road, Ste 101
State College, PA 16801
Office: 814-206-7470
Personal cell (while teleworking): 302-382-0284

"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation
increased and not impaired in value."

-

President Theodore Roosevelt

From: Ward, Rachel J CIV USARMY CENAP (US) <Rachel.J.Ward@usace.army.mil>
Sent: Tuesday, March 24, 2020 10:20 AM
To: McCorkle, Richard <richard_mccorkle@fws.gov>
Subject: [EXTERNAL] Abington Township Ecological Restoration Project (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Dear Mr. McCorkle,

I am contacting you to follow up on the Abington Township Ecological Restoration project that my colleague Mark Eberle discussed with you in 2017. I wanted to let you know that I am now writing

the EA for this project in Mark's stead, since he has taken a job with the National Park Service.

The Draft EA is a few months away from being published and I wanted to revisit the discussion of doing an informal consultation. Does informal consultation still sound like a good path forward to you? In this scenario we would send your office the draft EA and your office would reply with a letter stating your comments and our compliance with the FWCA. The project details remain the same as they did in 2017 when you and Mark spoke.

I have included the email between you and Mark just to refresh your memory (see below). I have also attached a recent PNDI coordination letter from DCNR.

Please feel free to contact me with any questions.

Thank you,

Rachel Ward
Biologist
USACE Philadelphia District
(215) 656-6733

-----Original Message-----
From: McCorkle, Richard [mailto:richard_mccorkle@fws.gov]
Sent: Thursday, May 11, 2017 9:30 AM
To: Eberle, Mark D CIV USARMY CENAP (US) <Mark.D.Eberle@usace.army.mil>
Subject: [Non-DoD Source] Re: USACE Philadelphia Area Ecosystem Restoration Projects - Abington Twp. And Bartram's Garden

Hi Mark,

Thank you for taking the time to describe the two proposed projects, both of which will be ecologically beneficial, including benefits to some of our federal trust resources. Given the small scale and urban nature of the projects, the approach you propose for completing FWCA review sounds reasonable. If the project managers have not already done so, we recommend that they screen their proposed projects using the Pennsylvania Natural Heritage Program's Conservation Planning and PNDI Environmental Review tool (BlockedBlockedhttps://conservationexplorer.dcnr.pa.gov/) which will help to identify any resource concerns up front. We look forward to reviewing the projects and providing comments, including FWCA and Endangered Species Act compliance determinations.

Best regards,

Rick

On Fri, May 5, 2017 at 10:36 AM, Eberle, Mark D CIV USARMY CENAP (US) <Mark.D.Eberle@usace.army.mil
<mailto:Mark.D.Eberle@usace.army.mil> > wrote:

Hi Rick,

I wanted to discuss with you two small ecosystem restoration projects that we have started working on in the Philadelphia area. The first project is Abington and we are working closely with the Township of Abington to evaluate alternatives for ecological restoration along Sandy Run Creek, a

tributary of the Wissahickon Creek in Abington Township, Pennsylvania. The main objectives of this effort are to enhance and restore aquatic, wetland, and riparian habitat. In addition, secondary objectives include: improve infiltration of flood waters, stabilize streambanks, control invasive species, and reconnect floodplains along the Sandy Run Creek. We have identified two locations in this suburban area to do stream and riparian buffer restoration. We sent your office a NEPA scoping letter (attached) in February 2017, but did not receive a response.

The other project that I wanted to discuss is the Schuylkill River Aquatic Ecosystem Restoration project and is located in the city of Philadelphia. This project is located at Bartram's Garden on the Schuylkill River (see attached maps) and our conceptual ideas include a living shoreline, freshwater mussel habitat creation, and wetland restoration. The proposed feasibility study will develop an array of alternatives to restore subtidal, intertidal and supratidal habitat along the Schuylkill River in Philadelphia. From our discussions with the Partnership for the Delaware Estuary (PDE), it are our understanding that there are a few vestigial mussel beds remaining in the Schuylkill River to provide source material. In addition, the PDE and Bartram's Garden are also planning a joint project to install a mussel hatchery at Bartram's Garden. Wetland species that could benefit from this project include many species of migratory birds and native plant species. Waders would be a guild of birds that would likely benefit from increased foraging and roosting areas along the Schuylkill River. Native plant species that would benefit from the project will depend on the final planting plan, but would likely include wild rice, water celery, and spadderdock. In addition, the newly created tidal marshes will be benefit key migratory fish species, such as
American shad and blueback herring that are found in the Schuylkill River.

Due to the small scale and urban nature of these two projects areas, as well as your office's busy work load, I was hoping that we could complete our requirements under the Fish and Wildlife Coordination (FWCA) in the same simple and informal way that we did recently with the Cobbs Creek Fish Passage Project in Philadelphia. As a reminder, that was very informal with no negotiated signed scope of work, no Planning Aid or 2(b) report, and consisted of us sending your office the draft EA and your office replying with a letter (dated 4/29/16 - also attached) stating your comments and our compliance with the FWCA. Does this approach sound reasonable to you for these two projects? If so, can you please send me an email confirming that and I'll share with the Project Managers on
these two studies.

Any questions, please let me know-

Thanks,
Mark

Mark Eberle, Biologist
U.S. Army Corps of Engineers, Philadelphia District
100 E Penn Sq Fl 7, Wanamaker Bldg.
CENAP-PL-E
Philadelphia, PA 19107-3390
(215) 656-6562
CLASSIFICATION: UNCLASSIFIED

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

Date: June 11, 2019

PNDI Number: 682780
Version: Final_1; 5/8/2019

Genevieve Rybicki
U.S. Army Corps of Engineers
100 Penn Square East
Philadelphia, PA 19107

Email: Genevieve.t.rybicki@usace.army.mil (hard copy will not follow)

Re: Roychester Park (Stream restoration)
Township: Abington **County: Montgomery**

Dear Ms. Rybicki,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number **682780 (Final_1)** for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

No Impact Anticipated

PNDI records indicate species or resources under DCNR's jurisdiction are located in the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, DCNR has determined that no impact is likely. No further coordination with our agency is needed for this project.

Recommended Actions to avoid the spread of invasive species:

- Clean boot treads, construction equipment, and vehicles thoroughly (especially the undercarriage and wheels) before they are brought on site. This will remove invasive plant seeds and invasive earthworms/cocoons that may have been picked up at other sites.
- Do not transport unsterilized leaves, mulch, compost, or soil to the site from another location.
- Do not use seed mixes that include invasive species. Please also use weed-free straw or hay mixes. More information about invasive species in Pennsylvania can be found at the following link: http://www.dcnr.pa.gov/Conservation/WildPlants/InvasivePlants/Pages/default.aspx
- Use habitat appropriate seed mixes. For example, when reseeding along a waterway, utilize a riparian seed mix. The Bureau of Forestry Planting & Seeding Guidelines can be found here for recommendations: http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_20031083.pdf
- Report occurrences of invasive species to iMapInvasives at https://www.imapinvasives.org/. Focus on large infestations and species that are not yet well established in the region or in Pennsylvania (https://www.paimapinvasives.org/be-on-the-lookout).

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter and a permit has not been acquired, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative, description of project changes and accurate map). As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review.

Should you have any questions or concerns, please contact Rich Shockey, Ecological Information Specialist, by phone (717-772-0263) or via email (c-rshockey@pa.gov).

Sincerely

Greg Podniesinski, Section Chief
Natural Heritage Section

Part 3 – Correspondence During Scoping

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
100 EAST PENN SQUARE, FLOOR 7, WANAMAKER BUILDING
PHILADELPHIA, PENNSYLVANIA 19107-3390

FEB 06 2017

Environmental Resources Branch

Mike Kaufmann
Pennsylvania Fish and Boat Commission
PO Box 356
Revere, PA 18953

Dear Mr. Kaufmann:

In accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, the U.S. Army Corps of Engineers, Philadelphia District, working closely with the Township of Abington is evaluating alternatives for ecological restoration along Sandy Run Creek, a tributary of the Wissahickon Creek in Abington Township, Pennsylvania. The main objectives of this effort are to enhance and restore aquatic, wetland, and riparian habitat. In addition, secondary objectives include: improve infiltration of flood waters, stabilize streambanks, control invasive species, and reconnect floodplains along the Sandy Run Creek. This project is in the information gathering stage and we are soliciting comments from the public and resource agencies to identify any significant issues, problems and concerns, as well as any pertinent information regarding ecosystem restoration along Sandy Run Creek and the enclosed list of preliminary alternatives. In accordance with NEPA, an Environmental Assessment or Environmental Impact Statement will be prepared accordingly in the future for this project. That document will discuss the selected plan of action and will be circulated to the public for comment.

By this letter, we are inviting your agency to participate in the scoping of this study. Please review the enclosed project scoping summary (Enclosure #1) and provide any relevant information within your agency's purview, and any comments or suggestions within 30 days of the date of this letter. Please direct comments to Mr. Mark Eberle of the Environmental Resources Branch at the address provided above. If you have any questions, you may reach Mark at (215) 656-6562. Enclosure #2 provides a list of all addressees receiving this letter. Thank you for your cooperation.

Sincerely,

Peter R. Blum

Peter R. Blum, P.E.
Chief, Planning Division

Enclosures
Scoping Summary
Coordination List

NEPA Scoping Summary (Enclosure #1)
Abington Township, Pennsylvania

The project areas are located in Abington Township, Pennsylvania adjacent to and along Sandy Run Creek (Figure 1). Sandy Run Creek, part of the Wissahickon Creek Watershed, is a stream system adversely affected by development and land use practices over the past century. Due to high levels of impervious surfaces throughout the watershed, the creek responds quickly during rain events, and increases in stream flow with erosive forces occur almost immediately following the onset of storm events. These changes in hydrologic conditions within the watershed have caused severe channel destabilization and riparian habitat degradation within much of the watershed.. The objectives of the project are to enhance and restore aquatic, wetland, and riparian habitat, improve infiltration of flood waters, stabilize stream banks, control invasive species, and reconnect floodplains along the Sandy Run Creek in Roychester Park and Grove Park in Abington Township, Pennsylvania

Figure 1: Location of the Sandy Run Creek Project Locations within Abington Township, Montgomery County, PA.

In April 2016, staff from the US Army Corps of Engineers (USACE) and Abington Township visited potential project sites along Sandy Run Creek to identify areas within Roychester Park and Grove Park (Figure 1) as potential high priority sites for ecosystem restoration.

Roychester Park

Roychester Park is a municipally owned park of approximately 12.7 acres. Many recreational and community features are present in the park including a playground, baseball fields, basketball courts, tennis courts, and the Roychester Community House, which serves as a venue for community functions and gatherings. The headwaters of Sandy Run Creek flow through Roychester Park. The park contains approximately 950 linear feet of stream and about 150 linear feet of which is currently diverted into a below ground channel (Figure 2). The segment of stream which has been diverted underground currently has no aquatic habitat value.

Figure 1: Map of Roychester Park showing location of Sandy Run Creek

The banks of the above ground segments of Sandy Run Creek within Roychester Park are severely eroded (Figure 3). The significant erosion of these banks disconnects the streambed from the surrounding floodplain, provides poor habitat for both aquatic and wetland species, as well as transports sediment to downstream locations creating further aquatic habitat impairment. The municipality has installed some native vegetation plantings in the riparian buffer area of the

stream, but the presence of invasive species in the riparian area continue to degrade the riparian habitat by preventing the further recruitment and establishment of native species. Native plant species provide vital habitat to wildlife inhabiting the riparian buffer areas.

Figure 2: Eroded stream bank in Roychester Park

Grove Park

Grove Park is a municipally owned park of approximately 2 acres. The park contains approximately 1,300 linear feet of Sandy Run Creek (Figure 4). About 400 linear feet of stream within the park are lined with gabion baskets on the banks and a 24 foot wide and 12 inches thick rebar enforced concrete channel on the stream bottom (Figure 5). The concrete channel provides no useful aquatic habitat and increases the velocity and temperature of the water, which further impairs downstream habitat through increased sedimentation and water temperature. Downstream of the concrete lined stream bottom, the stream banks are lined with gabion baskets (Figure 6). The gabions provide lower quality habitat for aquatic species and prevent the stream bed from connecting to the surrounding floodplains.

Figure 3: Map of Grove Park showing location of Sandy Run Creek

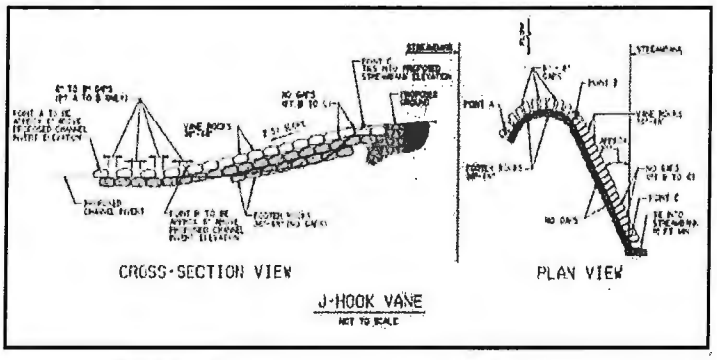
Figure 4: Concrete lined stream bottom with gabion baskets lining the stream banks of Sandy Run Creek in Grove Park

Figure 5: Gabion lined stream banks of Sandy Run Creek downstream of Figure 5 in Grove Park

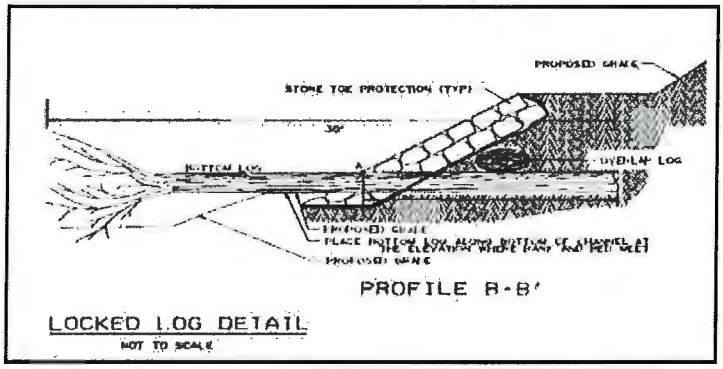
The main stem of Sandy Run Creek was relocated to its current location in Grove Park. The original channel still exists, but it does not have base flow; and only serves as a high flow channel during storm events (Figure 7). The limited vegetated buffer of this high flow channel has significant invasive species issues, which severely degrade the habitat value of the riparian buffer.

Figure 6: Former location of main stem of Sandy Run Creek in Grove Park

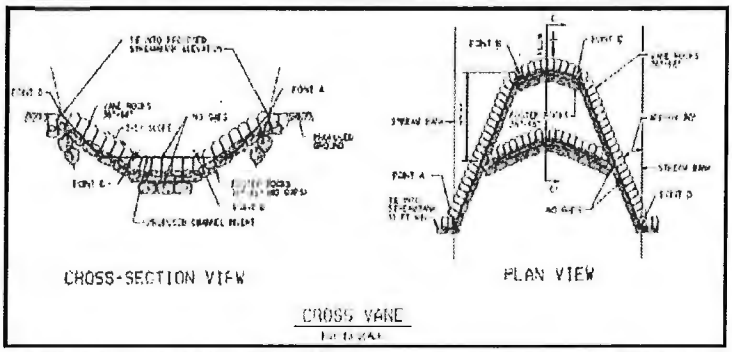
This project will investigate, select, design and construct the best alternative to restore ecosystem function along Sandy Run Creek at Roychester Park and Grove Park using natural stream stabilization methods such as J-hook vanes, locked logs, cross vanes, bendway weirs, longitudinal stone toe protection, and native streambank vegetation (Figures 8 and 9).



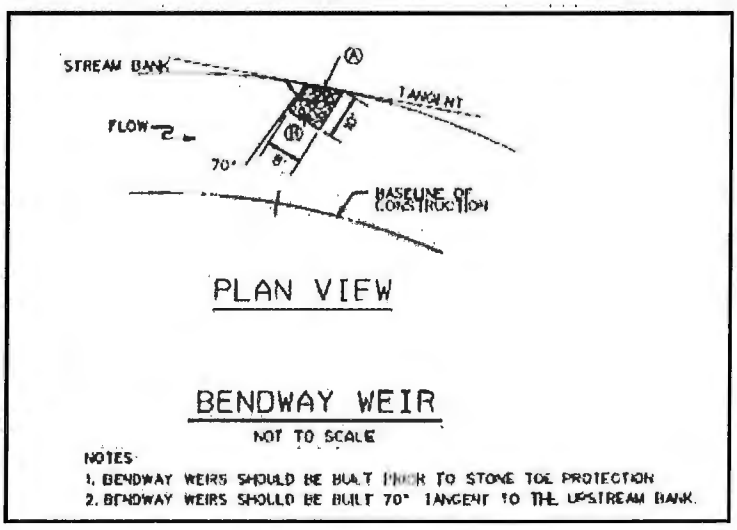
J-Hook Vanes: redirect higher velocity flows away from outside banks reducing erosion and create aquatic habitat through riffle formation



Locked Logs: Dissipate energy, reduce near-field scour, provide toe protection, and provide aquatic habitat complexity



Cross vanes: Redirect water away from stream banks and into the center of the channel, decreasing stress on unstable banks and forming pool habitat in the channel center. Double cross vanes (W weirs) area variation suitable for wider channels.



Bendway Weirs: Redirect flow from the outside streambank as the water moves through a bend in the channel.

Figure 7: Conceptual Examples of Natural Stream Stabilization Structures

Figure 9: Example of a stream that was restored using natural stream stabilization structures and native vegetation Image Source: .Doll, B.A., Grabow, G.L., Hall, K.R., Halley, J, Harman, W.A., Jennings, G.D., & D.E. Wise. 2003. Stream Restoration: A Natural Channel Design Handbook. NC Stream Restoration Institute, NC State University.

Under the authority of Section 566 of the Water Development Resource Act (WRDA) of 1996 (Public Law 104-303), the US Army Corps of Engineers (USACE), Philadelphia District entered into an agreement with the City of Philadelphia to implement this project. The USACE will complete an Environmental Assessment or Environmental Impact Statement to serve as the decision document for the selection of a recommended plan in accordance with the appropriate policies and procedures specified in the Corps of Engineers Regulations (ER).

The Project Delivery Team (PDT), together with the Township of Abington, developed an initial list of potential alternatives. The PDT recommended the following three preliminary alternatives for more detailed investigations:

- **No Action**
- **Potential Actions at Roychester Park**
- **Potential Actions at Grove Park**

The USACE completed an internal review of available alternatives and are now seeking comments from external sources. Again, these alternatives, including the no action alternative, are in the preliminary planning stages, and the COE will review all available information prior to selecting a preferred alternative.

1. No Action.

The "no action" alternative would not restore riparian and wetland habitat along Sandy Run Creek, and therefore the USACE considers this option unacceptable. The USACE will keep the "no action" alternative in the analysis pursuant to National Environmental Policy Act regulations.

2. Potential Action at Roychester Park

At Roychester Park, opportunities exist to daylight the approximately 150 linear feet of Sandy Run Creek that is currently below ground and to implement natural stream stabilization methods and native vegetation plantings to reconnect the floodplains and restore riparian and wetland habitat of the 800 linear feet of above ground reaches of Sandy Run Creek within Roychester Park where the stream banks are currently extremely eroded (Figures 2 and 3).

3. Potential Action at Grove Park

At Grove Park, opportunities exist to remove the concrete lining on an approximately 400 linear foot portion of the stream bed (Figures 4 and 5) and the gabion baskets lining the approximately 1,300 linear feet of stream banks (Figures 5 and 6) and use natural stream stabilization methods and native vegetation plantings to reconnect the floodplains and restore riparian and wetland habitat of the banks of Sandy Run Creek. The former main stem of Sandy Run Creek within Grove Park (Figure 7) is populated by the invasive species multiflora rose (*Rosa polyantha*), which degrades the existing habitat by competing with native species. Removal of multiflora rose from this section of the park will be a priority as a way to improve the success of the native vegetation plantings around the main stem of Sandy Run Creek at Grove Park.

COORDINATION LIST (Enclosure #2)

Mike Kaufmann
Pennsylvania Fish and Boat Commission
PO Box 356
Revere, PA 18953

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Attn: Lora Zimmerman, Field Supervisor
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State College, PA 16801

Pennsylvania Department of Environmental Protection
Division of Coastal Programs
Attn: Coastal Zone Management Coordinator
Rachel Carson State Office Building
P.O. Box 2063
Harrisburg, Pennsylvania 17105-8555

Pennsylvania Department of Environmental Protection
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Michelle Magliocca, NOAA Fisheries
Habitat Conservation Division
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Annapolis, MD 24104

Mark Murray-Brown, Section 7 Coordinator
Protected Resources Division
NOAA National Marine Fisheries Service
Greater Atlantic Regional Fisheries Office
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Mr. Christopher A. Urban, Chief
Pennsylvania Fish and Boat Commission
Division of Environmental Services
Natural Diversity Section
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Mr. Douglas C. McLearen
Chief, Division of Archaeology and Protection
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
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Pennsylvania Department of Environmental Protection
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Jack Kraeuter, Chief, Environmental and Geological Services Section
Pennsylvania Department of Environmental Protection
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Bob Pierson
Federal Emergency Management Agency
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American Rivers
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Ms. Susan Bachor
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Ms. Nekole Alligood,
NAGPRA and Cultural Preservation Director
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Anadarko, OK 73005

Ms. Robin Dushane
Cultural Preservation Director
Eastern Shawnee Tribe of Oklahoma
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Mr. Jesse Bergevin
Tribal Historic Preservation Officer
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Tribal Historic Preservation Officer
Stockbridge-Munsee Community of Mohican Indians
New York Office
65 1st Street
Troy, NY 12180

Mr. Arnold Printup
Tribal Historic Preservation Officer
St. Regis Mohawk Tribe
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Glenside, Pa, 19038

Jennifer Sherwood
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Wissahickon Clean Water Partnership
Dr. Lora Toran, Hydrogeologist P.G.
Temple University
Department of Geology
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Phila. Pa. 19122-6081

Patrick Starr
Executive Vice-President
Penna. Environmental Council (PEC)
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Phila. Pa. 19107

Drew Shaw AICP
Environmental Planning Specialist
Montgomery County Planning Department
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Norristown, Pa. 19404-0311

Jennifer Fields P.E.
Environmental Program Manager
Penna. Department of Environmental Protection
2 E. Main Street
Norristown, Pa. 19401

From:	Peter Johnsen - NOAA Federal
To:	Eberle, Mark D CIV USARMY CENAP (US)
Cc:	Karen Greene - NOAA Federal; Blum, Peter R CIV CPMS (US); Mark Murray-Brown; Michelle Magliocca - NOAA Federal
Subject:	Re: [EXTERNAL] Scoping comments on Sandy Run Creek restoration and enhancement, Abington Township, PA
Date:	Monday, February 27, 2017 11:28:03 AM

Peter and Mark,

Just to make clear, the email from Karen also covers and is true for species listed as threatened or endangered under the ESA and under our jurisdiction, i.e. sturgeon. No interagency consultation under section 7 of the Act is therefore needed. Consultation with NOAA Fisheries will be necessary if any new information or information not previously considered should indicate that project activities may affect listed species. If you have any questions, please feel free to call me on phone number 978-282-8416 or contact me via email.

Sincerely,

Peter Johnsen

On Fri, Feb 24, 2017 at 4:04 PM, Eberle, Mark D CIV USARMY CENAP (US) <Mark.D.Eberle@usace.army.mil <mailto:Mark.D.Eberle@usace.army.mil> > wrote:

> Hi Karen,
>
> Thanks for your comments and support for this project.
>
> Mark
>
> Mark Eberle, Biologist
>
> USACE - Philadelphia District
>
> 100 Penn Square East
>
> Philadelphia, PA 19107
>
> (215) 656-6562 <tel:(215)%20656-6562>

> From: Karen Greene - NOAA Federal [karen.greene@noaa.gov <mailto:karen.greene@noaa.gov>]
> Sent: Friday, February 24, 2017 1:41 PM
> To: Eberle, Mark D CIV USARMY CENAP (US); Blum, Peter R CIV CPMS (US); Mark Murray-Brown; Peter Johnsen - NOAA Federal
> Cc: Michelle Magliocca - NOAA Federal

Subject: [EXTERNAL] Scoping comments on Sandy Run Creek restoration and enhancement, Abington Township, PA

Hello Peter and Mark,

This responds to your February 6, 2017, letter inviting our participation in the scoping for the NEPA document the Corps will be developing for the ecological restoration of Sandy Run Creek in Abington Township, PA. There are no NOAA trust resources in the project area. We do have resources within the Schuylkill River and in the lower portions of Wissahickon Creek including diadromous species, but both the natural and man-made conditions of Sandy Run Creek and the upper portions of Wissahickon Creek do not contain habitat that supports these species. As a result, we will not be providing any additional comments on this project beyond expressing our support for the ecological restoration of this waterway. The restoration of the wetland and riparian habitats in this watershed will have a benefit on the downstream watersheds.

If you have any questions or need additional information, please feel free to contact me or Michelle Magiliocca of my office (after May 1).

Thanks.

Karen

Karen Greene
Mid-Atlantic Field Offices Supervisor
NOAA/National Marine Fisheries Service
Greater Atlantic Regional Fisheries Office
Habitat Conservation Division
James J. Howard Marine Sciences Laboratory
74 Magruder Rd.
Highlands, NJ 07732
732 872-3023 <tel:(732)%20872-3023> (office)

--

Peter B. Johnsen
Fisheries Biologist (section 7)
Greater Atlantic Region Fisheries Office
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930
Phone: 978-282-8416
email: peter.b.johnsen@noaa.gov <mailto:peter.b.johnsen@noaa.gov>

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF AIR QUALITY

March 2, 2017

Mr. Mark Eberle
Environmental Resources Branch
U.S. Army Corps of Engineers
Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

Re: Comments on the February 2017 National Environmental Policy Act (NEPA) Scoping Summary for the Sand Run Creek Project

Dear Mr. Eberle:

The Pennsylvania Department of Environmental Protection (DEP) appreciates the opportunity to comment on the United States Army Corps of Engineers (Corps) Scoping Summary for the Sandy Run Creek Project in Abington Township, Montgomery County, Pennsylvania.

Montgomery County, Pennsylvania is designated by the U.S. Environmental Protection Agency (EPA) as a "marginal" nonattainment area for the 2008 8-hour ozone National Ambient Air Quality Standards (NAAQS). Montgomery County is also part of a "maintenance area" for previous violations of the 2006 $PM_{2.5}$ NAAQS. The project is located in a nonattainment or maintenance area for criteria pollutant NAAQS, therefore, the project is subject to the federal and state General Conformity requirements. The EPA General Conformity requirements are codified at 40 CFR Part 93, Subpart B (relating to determining conformity of general Federal actions to state or Federal implementation plans) and adopted and incorporated by reference in their entirety in the *Pennsylvania Code* at 25 Pa. Code Chapter 127, Subchapter J (relating to general conformity).

The DEP would like to bring to your attention the following criteria to consider and address while preparing your Air Quality Analysis for General Conformity purposes:

1. All of the project's direct *and indirect* air emissions must be estimated in an Air Quality Analysis for the purpose of determining if General Conformity is applicable under 40 CFR §92.153. This analysis would include not only direct emissions from construction vehicle engines involved in the stream restoration activities (e.g. earthmoving, clearing and grubbing equipment, internal combustion generators, light rigs, etc.) but also those of all construction support vehicles used on site (e.g. contractor pick-up trucks, materials delivery vehicles, worker commuting vehicles, etc.). Indirect emissions, for example, would include fugitive dust generated from earthmoving activities and off-road use of vehicles.

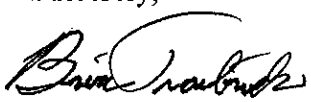
2. Emissions that are "reasonably foreseeable" within the scope of the project should be quantified, documented and included in the analysis.

3. In accordance with 40 CFR §93.159 (regarding procedures for conformity determinations of general Federal actions) the analysis must use the "latest planning assumptions" and "latest and most accurate emissions estimations techniques." For on-road motor vehicle emissions, the EPA MOVES 2014a model is the most current approved model. The NONROAD model contained in MOVES 2014a is the most current approved model for nonroad equipment emissions estimation. For non-motor vehicle sources (e.g. road dust, earthmoving fugitive emissions) the latest emissions factors specified by EPA's "Compilation of Air Pollutant Emissions Factors" ("AP-42") must be used unless more accurate emissions data are available.

4. In the event that the estimated total project emissions exceed the applicable annual emissions rate thresholds specified in 40 CFR §92.153, the Air Quality Analysis must include a General Conformity Determination (GCD) that demonstrates what appropriate project-level mitigation measures the Corps will undertake to mitigate or offset the non-conforming emissions in their entirety and not just the emissions above the applicability rate threshold. If the total project emissions are below the thresholds, then the Air Quality Analysis should document and support a statement of project non-applicability of General Conformity to be included in the GCD.

Thank you again for the opportunity to comment on the project scoping summary. Should you have questions or need additional information, please contact me by e-mail at britrowbri@pa.gov or by telephone at 717.787.9492.

Sincerely,



Brian Trowbridge
Air Quality Program Specialist
Bureau of Air Quality

cc: Jim Rebarchak (SERO)
ARM Reading File - 2017

DELAWARE
RIVERKEEPER
NETWORK

March 3, 2017

Mark Eberle
Environmental Resource Branch
Department of the Army
Philadelphia District, Corps of Engineers
100 East Penn Square, Floor 7, Wanamaker Building
Philadelphia, PA 19107-3390

RE: Sandy Run Creek restoration - Abington Township

Dear Mr. Eberle:

The Delaware Riverkeeper Network received the scoping letter and attachments for the proposed restoration projects for Sandy Run Creek in Roychester Park and Grove Park. We wish to express our gratitude for being included in this scoping phase, as well as our agreement that restoration work appears to be appropriately targeted to this stream.

Our vision for a healthy, functioning stream and riparian corridor would include a stream channel connected both horizontally and vertically to the riparian and hyporheic corridor, and a riparian zone appropriately sized to the channel and containing a mixture of both woody and non-woody native species. Floodplain storage within the riparian zone would also be a beneficial use of these corridor areas, both ecologically and for the water quality benefit they would provide. Where existing riparian coverage exists, even if less than ideal, we encourage you and your project partners to retain these established riparian corridors and to minimize disturbance of mature vegetation that is impossible to recover in the short-term.

We expect much of the design and restoration efforts will target both the concrete and gabion basket stream channel, and we strongly agree that these areas would benefit most from the restoration efforts. Although the specifics of your design and proposal are yet to be articulated, we expect that great progress can be made, particularly in this section of Grove Park.

DELAWARE RIVERKEEPER NETWORK
925 Canal Street, Suite 3701
Bristol, PA 19007
Office: (215) 369-1188
fax: (215)369-1181
dm@delawareriverkeeper.org
www.delawareriverkeeper.org

We are eager to continue our involvement in this project and would be happy to provide additional feedback and suggestions as the project scoping moves forward. Among other contributions, this could include joining the project team on-site to examine the challenges and to evaluate solutions.

Again, thank you for including the Delaware Riverkeeper Network in this important work to address long-standing challenges within the Sand Run Creek watershed and the Wissahickon more broadly. We look forward to continued collaboration to improve the health of our streams, our forests, and our watersheds.

Sincerely,

Erik L. Silldorff, Ph.D.
Restoration Director

cc. Rita Stevens, Abington Township Shade Tree Commission
Jeffiner Sherwood, Abington Township Environmental Advisory Commission
Dr. Lora Toran, Temple University
Jenifer Fields, PADEP-SERO
Drew Shaw, Montgomery County Planning Department
Patrick Starr, Pennsylvania Environmental Council

ABINGTON.

Pennsylvania State Historic Preservation Office
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

March 9, 2017

Department of the Army
Philadelphia District, Corps of Engineers
Attn: Peter R. Blum, P.E., Chief, Planning Division
100Penn Square, Floor 7, Wanamaker Building
Philadelphia, PA 19107-3390

RE: ER 2017-0771-091-A – COE: NEPA Sandy Run Creek Restoration, Abington Township, Montgomery County

Dear Mr. Blum:

Thank you for providing information concerning the above referenced project. The Pennsylvania State Historic Preservation Office (PA SHPO) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources. Our comments are as follows:

Historic (Above Ground) Resources
There may be above ground historic properties within the project area of potential effect. However, in our opinion, the project as proposed will have no effect on historic properties, should they exist. Should the scope and/or nature of the project change, the PA SHPO should be contacted immediately.

Archaeological Resources
Based on an evaluation by our staff, including a review of the Statewide Pre-Contact Predictive Model, there is a high probability that National Register significant archaeological sites are present within this project area. These resources could be adversely affected by project activities. Our review considers the locations of known archaeological resources, soil type, topographic setting, slope direction and distance to water, among other regionally specific predictive factors for archaeological site locations. It is our opinion that a Phase I archaeological survey should be conducted to locate potentially significant resources. Guidelines and instructions for conducting all phases of archaeological survey in Pennsylvania are available on our website http://www.phmc.pa.gov/Preservation/About/Documents/SHPO-Guidelines-Archaeological-Investigation.pdf.

If you have any questions or comments concerning our review, please contact Mark Shaffer at (717) 783-9900 or MShaffer@pa.gov.

Sincerely,

Douglas C. McLearen, Chief
Division of Archaeology and Protection

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

March 6, 2017

Mr. Mark Eberle
Department of the Army
U.S. Army Corps of Engineers, Philadelphia District
Environmental Resource Branch
Wanamaker Building, 100 Penn Square East
Philadelphia, PA 19107-3390

RE: Scoping for ecological restoration along Sandy Run Creek in Abington Township, Pennsylvania

Dear Mr. Eberle:

The U.S. Environmental Protection Agency (EPA) has received and reviewed the February 6, 2017 letter from the U.S. Army Corps of Engineers (USACE) regarding ecological restoration of Sandy Run Creek, a tributary of Wissahickon Creek, in Abington Township, Pennsylvania. EPA appreciates the coordination effort by USACE. In accordance with the National Environmental Policy Act of 1969 (NEPA) and Section 309 of the Clean Air Act, EPA welcomes the opportunity to comment on the scope of the proposed project. The proposed project's main objectives are to enhance and restore aquatic, wetland, and riparian habitat. The project aims to improve the infiltration of flood waters, stabilize streambanks, control invasive species, and reconnect floodplains along Sandy Run Creek. The proposed project outlines three alternatives including (1) No action, (2) Potential Action at Roychester Park, and (3) Potential Action at Grove Park.

The EPA is supportive of the objectives of the proposed restoration and we are appreciative of the opportunity to provide comments early in the planning process. Please consider the scoping points in the enclosed Technical Comments. We look forward to continuing coordination with you on this project as more information becomes available. If you have any questions and would like to discuss our comments, please feel free to contact me at 215-814-3322 or rudnick.barbara@epa.gov or the staff contact for this project is Ms. Nora Theodore, at 215-814-2728 or theodore.nora@epa.gov.

Sincerely,

Barbara Rudnick
NEPA Team Leader
Office of Environmental Programs

Enclosure

♻ *Printed on 100% recycled/recyclable paper with 100% post-consumer fiber and process chlorine free.*
Customer Service Hotline: 1-800-438-2474

Enclosure
Technical Comments on Scoping for Sandy Run Creek Ecological Restoration
Abington Township, Pennsylvania

General Comments: Purpose and Need

The purpose or objective of the proposal should be defined in relationship to the need for the action. Therefore, the need for the action should identify and describe the underlying problem or deficiency; facts and analyses supporting the problem or deficiency in the particular location at the particular time should be specified; and the context or perspective of the agency mission in relation to the need for action should be stated.

The scoping summary mentions that the area surrounding Sandy Run Creek has been adversely affected by development and land use practices. This information will be important to include in the purpose and need section of the prepared NEPA analysis to help explain why the proposed action is being undertaken and what objectives the project intends to achieve. Furthermore, elaborating upon the changes in hydrologic conditions within the watershed, and changes in frequency and intensity of storms in the region, if observed, should be discussed and considered in design.

Alternatives Analysis

The alternatives analysis is central to a NEPA analysis. In general, EPA is supportive of a natural stream channel design for reconnection of a stream to its floodplain, stream daylighting, removal of cement channel, and establishment of native species in restoration projects. In a NEPA analysis, it may be appropriate to mention other approaches that the Project Delivery Team (PDT) considered and dismissed from detailed study.

The USACE scoping enclosure outlines two main sites for potential restoration along Sandy Run Creek. In order to inform the decision-making process, it is anticipated that sufficient detail will be presented in the proposed alternative designs to understand the design options. For example, it is suggested that alternative analysis portray a suite of alternative stream restoration structures, as outlined in Figure 7, with attributes. Bendaway weirs were mentioned in this figure; it would be relevant to describe that these structures are generally used on larger waterbodies than those included in the scoping summary. It is encouraged that USACE consider and evaluate a range of stream structures based on their efficacy in other comparable systems. It is important that the right type of structure be used for the right problem in the appropriate size stream; and also that the alternatives are presented and discussed in the NEPA study.

EPA suggests including a table comparing potential ecological uplift of the alternative projects such as anticipated sediment reduction, acres of improved habitat, and improvements to benthic habitat among others. It appears that the concrete lined stream bottom in Grove Park has high potential for ecological uplift; removing gabion baskets from such a large area would also be an improvement and could help encourage wildlife to inhabit the area. These are considerations that can be included in the NEPA analysis.

Monitoring

EPA recommends that baseline conditions be presented in the NEPA study; a reference reach or other comparisons maybe of use. Success criteria should be developed for this restoration project. EPA suggests that USACE implement evaluation and monitoring of restoration efforts to help determine whether design objectives have been met. It is recommended that monitoring cover functioning of in-stream structures, channel stability, sediment transport, stream bank erosion rates, and biological responses, as outlined in the cited Natural Channel Design Handbook.

Invasive Species

It is recommended that approaches to address invasive species, including monitoring and adaptive management, be presented in the NEPA documentation.

Terrestrial Environment

The NEPA analysis should provide a description of the terrestrial habitat resources in the restoration study area. It is recommended that a species lists for mammals, birds, amphibians, reptiles, and plants present in the study area be prepared, summarizing the composition and characteristics of community type, the functions and total acreage. Consideration of the terrestrial species would be appropriate to understand impact of the proposed restoration and enhancement projects. Please note that both adverse and positive impacts can be evaluated.

Community Impacts and Involvement

The NEPA study should consider use of the facility by the community and any potential impact the project may have on use of the area. In addition, public participation is a critical component of the NEPA process, so outreach efforts should be documented in the study. Community input is of particular concern in the urban landscape; therefore, public education may be considered as part of the project objectives. Methods to communicate to the public the restoration and enhancements goals under study may assist in public engagement, input and acceptance.

Furthermore, it is encouraged that USACE determine if any communities are environmental justice (EJ) communities in the vicinity of the proposed project sites and if any special outreach methods should be employed. Please consider various methods to identify EJ communities. To assist in this effort, EPA has developed an EJ mapping and screening tool called EJSCREEN. It is based on nationally consistent data and an approach that combines environmental and demographic indicators in maps and reports. It can be accessed at: https://www.epa.gov/ejscreen. Additionally, please consider referring to "Promising Practices for EJ Methodologies in NEPA Reviews": https://www.epa.gov/environmentaljustic/ej-iwg-promising-practices-ej-methodologies-nepa-reviews.

Natural and Human Environment, Secondary and Cumulative Impacts

Consideration of impacts offset in time or location is part of proposed project analysis. The Council on Environmental Quality (CEQ) in 40 CFR 1508.8 defines secondary effects as "caused by an

action and are later in time or farther removed in distance but are still reasonably foreseeable". Examples of these could be the environmental effects of interconnected projects, such as additional infrastructure that may be needed to support the project. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. The CEQ in 40 CFR 1508.7 defines cumulative impacts as "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." It is recommended that a cumulative impacts assessment be a part of USACE's NEPA analysis. Impacts may be adverse or positive to a resource.

From:	Kukola, Regina L CIV USARMY CENAP (US)
To:	Rita Stevens
Cc:	Eberle, Mark D CIV USARMY CENAP (US)
Subject:	RE: [EXTERNAL] Regrets + One correction
Date:	Thursday, March 09, 2017 8:28:27 AM

Hi Rita,

Thanks for sending along the correction to the site description. I have CC'ed Mark Eberle, the project Biologist, to this e-mail. He has been compiling and reviewing all of the feedback from the scoping letter.

Also, thank you for the information you were able to provide on the existing site conditions at Grove and Rochester Parks at our initial site visit. We have the Abington STC added to our list of stakeholders for the project.

Best,
Regina

-----Original Message-----
From: Rita Stevens [mailto:abingtontrees@gmail.com]
Sent: Monday, March 06, 2017 6:06 PM
To: Kukola, Regina L CIV USARMY CENAP (US) <Regina.L.Kukola@usace.army.mil>
Subject: [EXTERNAL] Regrets + One correction

Hello Regina,

I apologize for missing today's site visit at Roychester and Grove Parks. Following an overly busy weekend, I did not check today's calendar in time. (Nor did Glen!)

I have offer only one correction to the letter from Peter Blum requesting for comment. Would you please forward this, as I do no have his email address:

Enclosure page 1-3: Grove Park is a 9 acre parcel (not 2 acre)

Please continue to let me know how the STC can assist. Regards, Rita
--

Rita W. Stevens
ISA Certified Arborist PD-2329A

Abington Township Shade Tree Commission
a volunteer group commissioned by Abington Township
education and outreach to plant and preserve trees
Blockedhttp://www.facebook.com/AbingtonTrees

Pennsylvania Fish & Boat Commission

established 1866

Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823
814-359-5237

March 20, 2017

IN REPLY REFER TO
SIR# 47342

Department of the Army
Mark Eberle
10 E. Penn Square
Philadelphia, Pennsylvania 19107

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No.
Sandy Run Creek
MONTGOMERY County: Abington Township

Dear Mark Eberle:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code.

Except for occasional transient species, rare, candidate, threatened or endangered species under our jurisdiction are not known to exist in the vicinity of the project area. Therefore, no biological assessment or further consultation regarding rare species is needed with the Commission. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Robert Morgan at 814-359-5129 and refer to the SIR # 47342. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

Christopher A. Urban, Chief
Natural Diversity Section

CAU/RTM/dn

Appendix B: Wetland Report

WETLAND DELINEATION REPORT

Abington Environmental Infrastructure Project Montgomery County, Pennsylvania

Section 566 Water Resources and Development Act

INTRODUCTION

The wetland delineation performed at the site included an investigation of any wetlands or waters present within the project areas at Grove Park and Roychester Park in Abington Township, PA. Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Laboratory (1987), Department of the Army, Waterways Experimental Station, January 1987 Final Report, p. A14, Attachment A.).

A wetland delineation requires the investigation of three components that characterize wetlands: (1) the presence of hydrophytic plants; (2) the presence of hydric or saturated soils that have become anaerobic due to long term saturation during the growing season; and (3) an indication of the presence of water flooding or saturating the site from ground or surface sources.

DESCRIPTION OF SITE

Grove Park and Roychester Park are two separate public recreational parks located in an urbanized landscape. These two parks are located less than a mile apart from one another, and each contain a reach of Sandy Run Creek. The above-ground portion of Sandy Run Creek begins at the northeastern edge of Roychester Park, where it travels aboveground toward the southwest for about 1,400 feet (except for a brief 100 foot piped section under a recreational field), and continues downstream in an underground stormwater conveyance. Sandy Run Creek resumes its above-ground course at the northeastern extent of Grove Park, and travels southwest for about 1,300 feet until it returns to an underground conveyance.

Roychester Park is primarily a mowed green containing recreational fields as well as two impervious courts (for basketball and tennis) and a parking lot. The riparian area within the park is primarily forested. Grove Park is primarily a mowed green intersected by the main channel of Sandy Run Creek and bordered by woodland. The southeastern side of Grove Park is dominated by a forested area containing wetlands and small streams that empty into the main channel of Sandy Run Creek via outfalls.

METHODS

Representatives of USACE Regulatory visited the site on October 8, 2019 to perform a wetland delineation. A delineation verification visit was conducted by USACE Environmental Resources on November 10, 2020. The initial wetland investigation included a visual survey of the sites followed by collection of data points in order to establish a line of transition between upland and wetland areas. At each data point the dominant vegetation was recorded and soil probes were performed in order to observe the soil characteristics. Soil borings were taken to a depth of approximately 16 inches and observations of soil colors and consistency were noted at a series of depths. The soil probe was used as the center of each data point for vegetation investigation and data collection.

Data points were taken in several locations. The findings were compared with descriptions of the mapped soil types at this location in the Montgomery County Soil Survey (USDA, 2020). Dominant vegetation was recorded within a 5-ft diameter of the soil probe for the herbaceous, shrub or understory tree layer, and within a 30-ft diameter for trees. Each recorded plant species was then characterized by its status as shown in Table 1 according to Reed (1988).

For the delineation verification visit (conducted by USACE Environmental Resources on November 10, 2020), soil borings were not permitted therefore vegetation, geomorphic position, and secondary indicators were utilized to determine wetland status. Observational data was supplemented by use of aerial photography and LiDAR data (see Attachment A)

Table 1: Wetland Plant Status

Category	Abbreviation	Definition
Not Listed	NL	Not listed in Reed, 1988
No Indicator	NI	Insufficient information available to determine indicator status
Obligate upland	UPL	Occurs <1% of the time in wetlands
Facultative upland	FACU	Occurs 1% to 33% of the time in wetlands
Facultative	FAC	Occurs 34% to 66% of the time in wetlands
Facultative wetland	FACW	Occurs 67% to 99% of the time in wetlands
Obligate wetland	OBL	Occurs >99% of the time in wetlands

If 50% or more of the sampling area is dominated by plants that are categorized as FAC, FACW, or OBL, the site's vegetative parameter is considered positive for hydrophytic or wetland vegetation.

Observations were recorded in data sheets for each data point (see Attachment B). These data sheets recorded soil and plant characteristics, as well as indicators of wetland hydrology.

RESULTS

As a result of the investigation USACE identified five wetlands and several streams in Grove Park and one wetland, one stream, and two drainage swales in Roychester Park. These features are identified on the attached Wetland/Stream Boundary Plans.

Soils

The Montgomery County Soil Survey (2014) has mapped soils in Roychester Park as “Urban land-Edgemont complex”, and soils in Grove Park as primarily “Hatboro Silt-Loam” with additional small areas of “Urban land, occasionally flooded”, and “Urban land-Duffield complex, 0 to 8 percent slopes”. A copy of the soil maps for each park are included in Attachment A. Soil profile observations were recorded during the initial site visit, which corresponded to on the data sheets in Attachment C.

The Montgomery County Soil Survey (2014) identifies “Urban land-Edgemont complex” in Roychester Park and soils in Grove Park as primarily “Hatboro Silt-Loam” with additional small areas of “Urban land, occasionally flooded”, and “Urban land-Duffield complex, 0 to 8 percent slopes”. Urban land-Edgemont complex soils are classified as containing a matrix of well drained ridges (Urban land and Edgemont soils, composed of channery loam, not hydric), terraces (Buchannan, not hydric) and drainageways (Andover, hydric). Urban land refers to soils that were brought in for some kind of development purpose (estimated to characterize 65% of the site), while the remaining soil complex contains Edgemont soil (estimated to characterize 30% of the site), and two minor component soils called Buchannan and Andover.

The majority of Grove Park is mapped as containing Hatboro Silt-Loam. This soil is composed of poorly drained alluvium derived from metamorphic and sedimentary rock, and is found in floodplains. Hatboro Silt-Loam contains minor components of Glenville soils, which are found on hillslopes and are not considered hydric. The soil map unit “Urban land, occasionally flooded” refers to excessively drained pavement, buildings and other artificially covered areas present in a floodplain. Urban land-Duffield complex of contains both urban land, and soils of the Duffield complex. The Duffield complex contains parent material composed of well drained residuum weathered from limestone with minor components of Clarksburg soils (in valley flats, not hydric), Penlaw soils (in swales, not hydric), and Thorndale soils (in depressions, hydric).

Hydrology

Surface drainage in both parks generally flows from the northeast toward the southwest. In Roychester Park, Sandy Run Creek originates from a stormwater outfall at the northeast end of the park and empties into another stormwater pipe at the southwest end of the park. Several stormwater swales and pipes empty into the main channel at other locations along the stream channel. A relatively short portion of the mainstem is piped underground in the middle of Roychester Park but resurfaces approximately 150-feet downstream.

In Grove Park, Sandy Run Creek originates from a stormwater outfall at the northeast end of the park and empties into another stormwater pipe at the southwest end of the park. Several stormwater swales and pipes, as well as three streams empty into the main channel at other locations along the main channel.

Vegetation

Both parks are primarily covered by mowed lawn, however riparian plant communities are found along sections of Sandy Run, and forested areas are found in both parks. In Roychester Park, the main channel of Sandy Run Creek is forested for most of its course, containing both native and non-native trees. The northeast end of the creek has a thriving community of native riparian plants and small area containing emergent wetland plants. In the southeastern half of Grove Park there is a large forested area containing several small wetlands and streams. This wooded area appears to be primarily composed of native trees and shrubs, with a primarily invasive herbaceous layer. Riparian and wetland plant species are found along streams and depressions throughout this wooded area.

SUMMARY OF FINDINGS

It was determined that Roychester Park contains one stream (Sandy Run Creek), one emergent wetland (about 1000 square feet) and two drainage features. It was determined that Grove Park contains four streams (including Sandy Run Creek mainstem), five forested wetlands (totaling about 24,000 square feet or about .55 acre) and two drainage features (see Attachment A for drawings).

Enclosures

Attachment A: Maps and Drawings

Attachment B: Data Sheets

ATTACHMENT A

MAPS

Figure 1: Site Locations
Figure 2-3: Soil Maps
Figure 4: Soil Boring Map
Figure 5: Aerial Photograph of Grove Park
Figure 6: LiDAR Hillshade for Grove Park
Figure 7-8: Wetland/Stream Locations

Figure 1: Site Locations Map

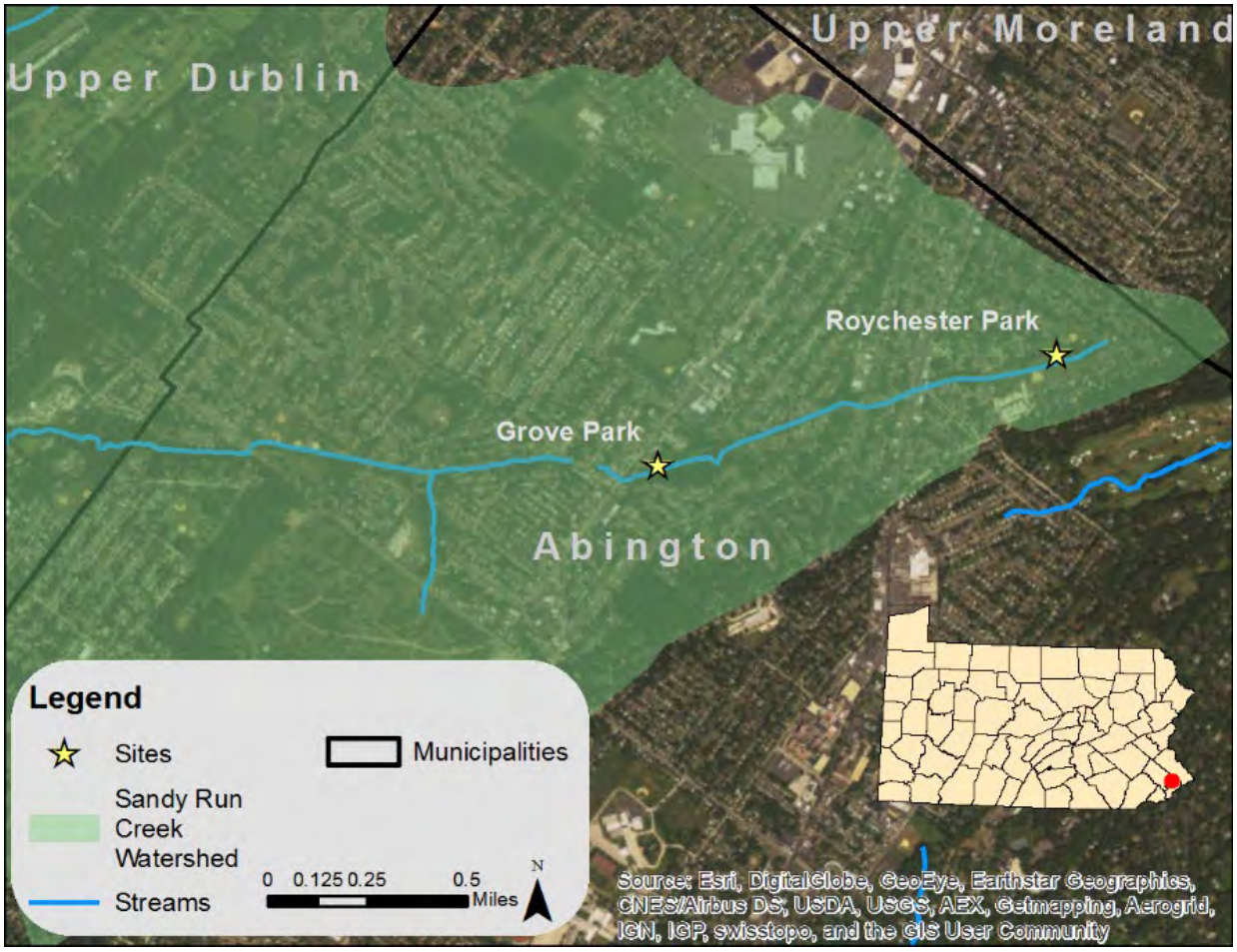


Figure 2: Roychester Park Soil Map

Figure 3: Grove Park Soil Map

Figure 4: Soil Boring Locations (USACE Regulatory Dept., Oct. 8, 2019)

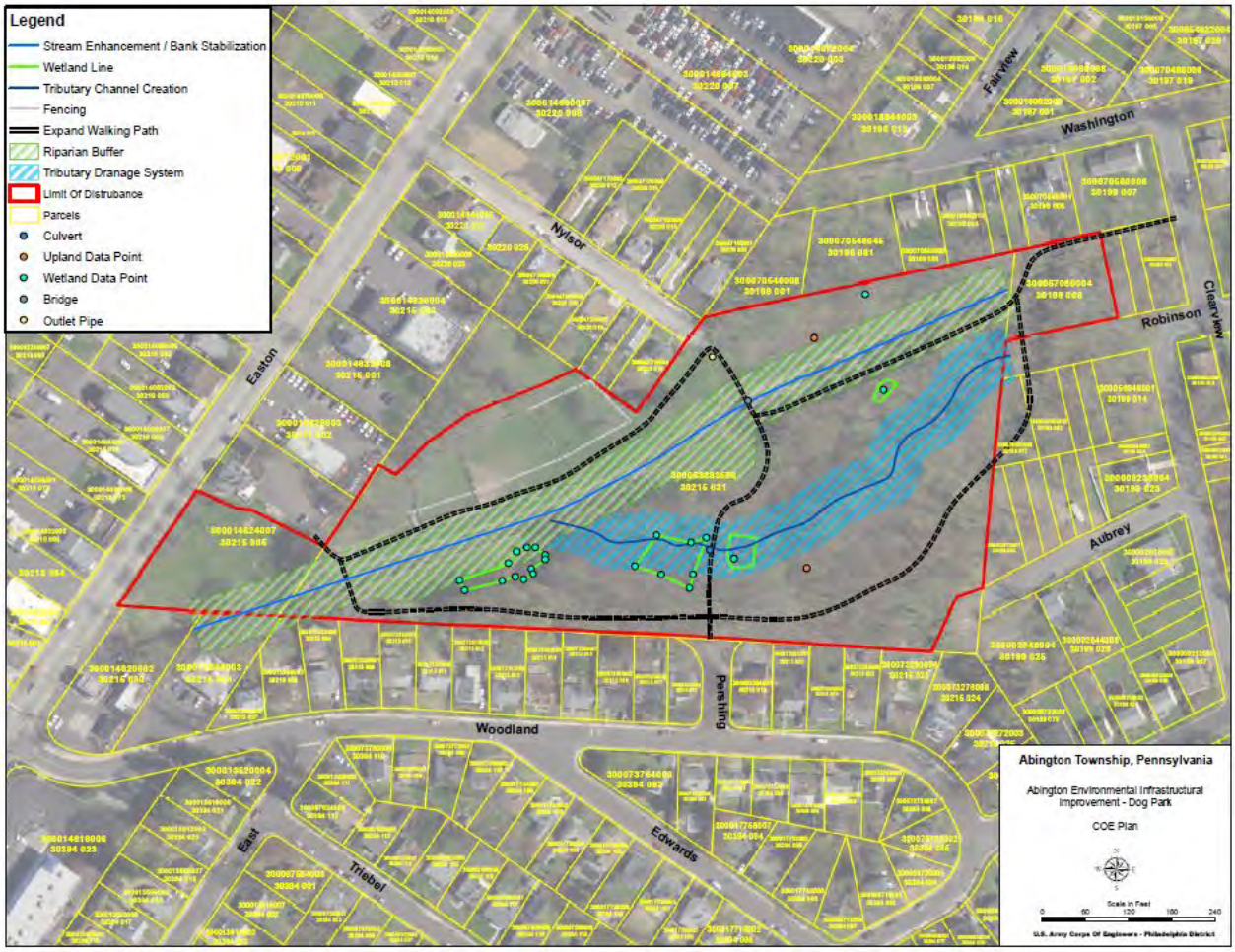


Figure 5: Aerial Photograph of Grove Park (Source: PASDA Pennsylvania Imagery Navigator)

Figure 6: LiDAR Hillshade of Grove Park (Source: USGS)

Figure 7: Grove Park Wetland and Stream Location Drawing
(USACE Environmental Resources Dept., Nov. 10, 2020)

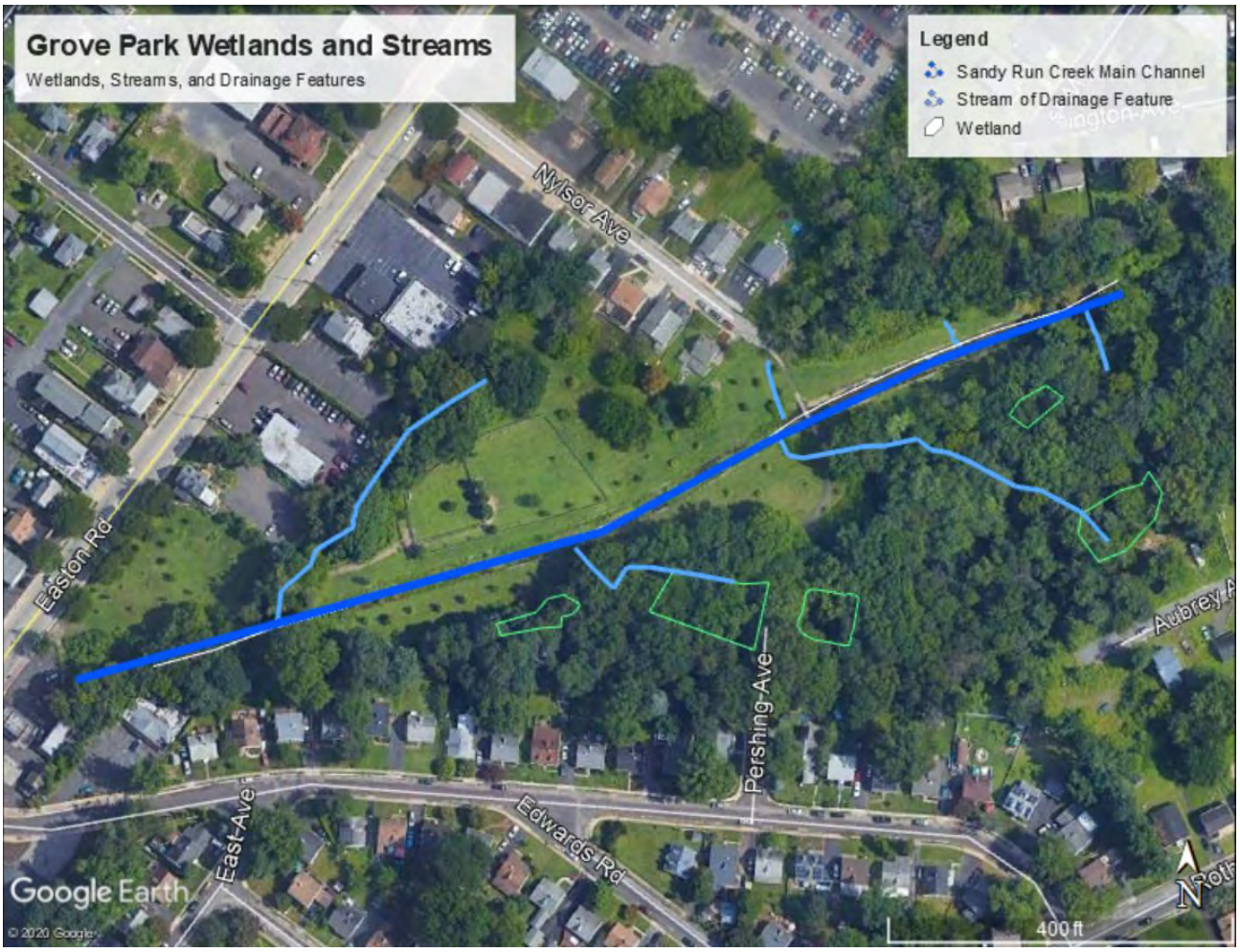


Figure 8: Roychester Park Wetland and Stream Location Drawing
(USACE Environmental Resources Dept., Nov. 10, 2020)

ATTACHMENT B

DATA SHEETS

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Grove Run Dog Park City/County: Abington Township Sampling Date: 8-9-19

Applicant/Owner: Abington Township State: PA Sampling Point: 1

Investigator(s): Genevieve Rybicki, Michael Reilly Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No x	Depth (inches): ____
Water Table Present?	Yes ____	No x	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No x	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5)			
1. *Epilobium ciliatum*	95	Yes	FAC
2. *Impatiens capensis*	5	No	FACW
3. *Apocynum cannabinum*	20	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	120 =Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	95	x 3 =	285
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	120 (A)		375 (B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/2	100						
5-12	10YR 4/2	100						fill material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Very rocky

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Grove Run Dog Park City/County: Abington Township Sampling Date: 8-9-19

Applicant/Owner: Abington Township State: PA Sampling Point: 1

Investigator(s): Genevieve Rybicki, Michael Reilly Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: 40.129445 Long: -75.125948 Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes x	No ____	**within a Wetland?** **Yes** x **No** ____
Wetland Hydrology Present?	Yes x	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- x Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- x Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- x Sparsely Vegetated Concave Surface (B8)
- x Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ? Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No x	Depth (inches): ____
Water Table Present?	Yes x	No ____	Depth (inches): 15
Saturation Present? (includes capillary fringe)	Yes x	No ____	Depth (inches): 10

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	80	Yes	FAC
2. *Quercus palustris*	15	No	FACW
3. *Morus*	5	No	
4.			
5.			
6.			
7.			
	100	=Total Cover	
50% of total cover: 50		20% of total cover:	20
Sapling/Shrub Stratum (Plot size: 15)			
1. *Viburnum dentatum*	5	Yes	FAC
2. *Fraxinus pennsylvanica*	15	Yes	FACW
3. *Cornus amomum*	5	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5
Herb Stratum (Plot size: 5)			
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Impatiens capensis*	5	Yes	FACW
3. *Lonicera japonica*	1	No	FACU
4. *Symplocarpus foetidus*	5	Yes	OBL
5. *Pilea pumila*	5	Yes	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	26	=Total Cover	
50% of total cover: 13		20% of total cover:	6
Woody Vine Stratum (Plot size: 15)			
1. *Smilax rotundifolia*	5	Yes	FAC
2. *Parthenocissus quinquefolia*	1	No	FACU
3. *Toxicodendron radicans*	2	No	FAC
4. *Vitis labrusca*	5	Yes	FACU
5.			
	13	=Total Cover	
50% of total cover: 7		20% of total cover:	3

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 90.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	55	x 2 =	110
FAC species	92	x 3 =	276
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals:	159 (A)		419 (B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5YR 3/1	100						
14-20	10YR 3/1	60	10YR 4/6	40	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Grove Run Dog Park City/County: Abington Township Sampling Date: 8-9-19

Applicant/Owner: Abington Township State: PA Sampling Point: 3

Investigator(s): Genevieve Rybicki, Michael Reilly Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: 40.129079 Long: -75.12587 Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes x	No ____	**within a Wetland?** **Yes** x **No** ____
Wetland Hydrology Present?	Yes x	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- x Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- x Sparsely Vegetated Concave Surface (B8)
- x Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____

Water Table Present? Yes ____ No ____ Depth (inches): ____

Saturation Present? Yes ____ No ____ Depth (inches): ____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	50	Yes	FACW
2. *Acer rubrum*	20	Yes	FAC
3. *Acer negundo*	10	No	FAC
4. *malus sylvestris*	5	No	UPL
5.			
6.			
7.			
	85	=Total Cover	
50% of total cover: 43		20% of total cover:	17
Sapling/Shrub Stratum (Plot size: 15)			
1. *rosa multiflora*	20	Yes	FACU
2. *Lindera benzoin*	15	Yes	FAC
3. *Fraxinus pennsylvanica*	3	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
	38	=Total Cover	
50% of total cover: 19		20% of total cover:	8
Herb Stratum (Plot size: 5)			
1. *Polygonum*	5	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1
Woody Vine Stratum (Plot size: 30)			
1. *Toxicodendron radicans*	15	Yes	FAC
2.			
3.			
4.			
5.			
	15	=Total Cover	
50% of total cover: 8		20% of total cover:	3

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	53	x 2 =	106
FAC species	60	x 3 =	180
FACU species	20	x 4 =	80
UPL species	5	x 5 =	25
Column Totals:	138 (A)		391 (B)

Prevalence Index = B/A = 2.83

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-7	10YR 3/2	100					Loamy/Clayey	
7-12	10YR 5/6	60	10YR 6/1	40	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Grove Run Dog Park City/County: Abington Township Sampling Date: 8-9-19

Applicant/Owner: Abington Township State: PA Sampling Point: 4

Investigator(s): Genevieve Rybicki, Michael Reilly Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: 40.128454 Long: -75.126639 Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes x	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes x	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- x High Water Table (A2)
- x Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- x Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- x Sparsely Vegetated Concave Surface (B8)
- x Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- x Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- x FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No x	Depth (inches): ____
Water Table Present?	Yes x	No ____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes x	No ____	Depth (inches): 9

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	20	No	FAC
2. *Acer saccharinum*	80	Yes	FACW
3. *Platanus occidentalis*	10	No	FACW
4.			
5.			
6.			
7.			
	110	=Total Cover	
50% of total cover: 55		20% of total cover:	22
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rosa multiflora*	40	Yes	FACU
2. *Quercus palustris*	5	No	FACW
3. *Ligustrum obtusifolium*	2	No	UPL
4. *Viburnum dentatum*	20	Yes	FAC
5.			
6.			
7.			
8.			
9.			
	67	=Total Cover	
50% of total cover: 34		20% of total cover:	14
Herb Stratum (Plot size: 5)			
1. *Parthenocissus quinquefolia*	1	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	1	=Total Cover	
50% of total cover: 1		20% of total cover:	1
Woody Vine Stratum (Plot size: 30)			
1. *Toxicodendron radicans*	20	Yes	FAC
2.			
3.			
4.			
5.			
	20	=Total Cover	
50% of total cover: 10		20% of total cover:	4

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	60	x 3 =	180
FACU species	41	x 4 =	164
UPL species	2	x 5 =	10
Column Totals:	198 (A)		544 (B)

Prevalence Index = B/A = 2.75

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	90	10YR 3/6	10	C	M		Prominent redox concentrations
6-12	10YR 4/2	80	10YR 5/8	20	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Grove Run Dog Park City/County: Abington Township Sampling Date: 8-9-19

Applicant/Owner: Abington Township State: PA Sampling Point: 5

Investigator(s): Genevieve Rybicki, Michael Reilly Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes x	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes x	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- x High Water Table (A2)
- x Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- x Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- x Sparsely Vegetated Concave Surface (B8)
- x Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- x Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- x FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No x	Depth (inches): ____
Water Table Present?	Yes x	No ____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes x	No ____	Depth (inches): 9

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	20	No	FAC
2. *Acer saccharinum*	80	Yes	FACW
3. *Platanus occidentalis*	10	No	FACW
4.			
5.			
6.			
7.			
	110	=Total Cover	
50% of total cover: 55		20% of total cover:	22
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rosa multiflora*	40	Yes	FACU
2. *Quercus palustris*	5	No	FACW
3. *Ligustrum obtusifolium*	2	No	UPL
4. *Viburnum dentatum*	20	Yes	FAC
5.			
6.			
7.			
8.			
9.			
	67	=Total Cover	
50% of total cover: 34		20% of total cover:	14
Herb Stratum (Plot size: 5)			
1. *Parthenocissus quinquefolia*	1	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	1	=Total Cover	
50% of total cover: 1		20% of total cover:	1
Woody Vine Stratum (Plot size: 30)			
1. *Toxicodendron radicans*	20	Yes	FAC
2.			
3.			
4.			
5.			
	20	=Total Cover	
50% of total cover: 10		20% of total cover:	4

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	60	x 3 =	180
FACU species	41	x 4 =	164
UPL species	2	x 5 =	10
Column Totals:	198 (A)		544 (B)

Prevalence Index = B/A = 2.75

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	90	10YR 3/6	10	C	M		Prominent redox concentrations
6-12	10YR 4/2	80	10YR 5/8	20	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Grove Run Dog Park City/County: Abington Township Sampling Date: 8-9-19

Applicant/Owner: Abington Township State: PA Sampling Point: 6

Investigator(s): Genevieve Rybicki, Michael Reilly Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes x	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes x	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- x Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No x	Depth (inches): ____
Water Table Present?	Yes x	No ____	Depth (inches): 20
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
RAIN LAST NIGHT

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 6

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	50	Yes	FACW
2. *Ulmus americana*	20	Yes	FACW
3. *Fraxinus pennsylvanica*	5	No	FACW
4. *Prunus avium*	1	No	UPL
5.			
6.			
7.			
	76	=Total Cover	
50% of total cover: 38		20% of total cover:	16
Sapling/Shrub Stratum (Plot size: 15)			
1. *Vibernum plicatum*	15	Yes	
2. *Lindera benzoin*	15	Yes	FAC
3. *Rosa multiflora*	50	Yes	FACU
4. *Ligustrum vulgare*	5	No	FACU
5. *Cornus florida*	10	No	FACU
6. *Ulmus americana*	5	No	FACW
7.			
8.			
9.			
	100	=Total Cover	
50% of total cover: 50		20% of total cover:	20
Herb Stratum (Plot size: 5)			
1. *Parthenocissus quinquefolia*	50	Yes	FACU
2. *Brassica rapa*	5	No	UPL
3. *Toxicodendron radicans*	25	Yes	FAC
4.			FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80	=Total Cover	
50% of total cover: 40		20% of total cover:	16
Woody Vine Stratum (Plot size: 30)			
1. *Toxicodendron radicans*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	50	x 3 =	150
FACU species	115	x 4 =	460
UPL species	6	x 5 =	30
Column Totals:	251 (A)		800 (B)

Prevalence Index = B/A = 3.19

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100					Loamy/Clayey	
2-18	10YR 4/1	60	2.5YR 4/6	40	C	M	Loamy/Clayey	
18-20	10YR 6/1	85	7.5YR 5/8	15	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Grove Run Dog Park City/County: Abington Township Sampling Date: 8-9-19

Applicant/Owner: Abington Township State: PA Sampling Point: 7

Investigator(s): Genevieve Rybicki, Michael Reilly Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: 40.12841 Long: -75.126279 Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No x	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No x	**within a Wetland?** **Yes** ____ **No** x
Wetland Hydrology Present?	Yes ____	No x	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 7

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer platanoides*	25	Yes	UPL
2. *Acer rubrum*	35	Yes	FAC
3. *Cornus florida*	10	No	FACU
4. *Prunus serotina*	25	Yes	FACU
5.			
6.			
7.			
	95	=Total Cover	
50% of total cover: 48		20% of total cover:	19
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rosa multiflora*	80	Yes	FACU
2. *Lindera benzoin*	5	No	FAC
3. *Lonicera japonica*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	90	=Total Cover	
50% of total cover: 45		20% of total cover:	18
Herb Stratum (Plot size: 5)			
1. *Parthenocissus quinquefolia*	5	Yes	FACU
2. *Lonicera japonica*	7	Yes	FACU
3. *Vitis aestivalis*	2	No	FACU
4. *Rubus*	4	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	18	=Total Cover	
50% of total cover: 9		20% of total cover:	4
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	138	x 4 =	552
UPL species	25	x 5 =	125
Column Totals:	203 (A)		797 (B)

Prevalence Index = B/A = 3.93

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100						
4-12	10YR 5/6	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Grove Run Dog Park City/County: Abington Township Sampling Date: 8-9-19

Applicant/Owner: Abington Township State: PA Sampling Point: 8

Investigator(s): Genevieve Rybicki, Michael Reilly Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
rain last night

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 8

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer pensylvanicum*	30	Yes	FACU
2. *Acer platanoides*	25	Yes	UPL
3.			
4.			
5.			
6.			
7.			
	55	=Total Cover	
50% of total cover: 28		20% of total cover:	11

Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Herb Stratum (Plot size: 15)			
1. *Impatiens capensis*	30	Yes	FACW
2. *Rubus pensilvanicus*	50	Yes	FAC
3. *Epilobium coloratum*	25	Yes	FACW
4. *Lythrum salicaria*	3	No	FACU
5. *Lobelia siphilitica*	2	No	FACW
6. *Carex conjuncta*	5	No	FACW
7.			
8.			
9.			
10.			
11.			
	115	=Total Cover	
50% of total cover: 58		20% of total cover:	23

Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	62	x 2 =	124
FAC species	50	x 3 =	150
FACU species	33	x 4 =	132
UPL species	25	x 5 =	125
Column Totals:	170 (A)		531 (B)

Prevalence Index = B/A = 3.12

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/2	100						
4-12	7.5YR 5/2	60	5YR 5/6	40	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Roychester Park City/County: Abington Township Sampling Date: 8-9-19

Applicant/Owner: Abington Township State: PA Sampling Point: 1

Investigator(s): Genevieve Rybicki, Michael Reilly Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): LRR S, MLRA 148 Lat: 40.129 Long: -75.126 Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____

Water Table Present? Yes ____ No ____ Depth (inches): ____

Saturation Present? Yes ____ No ____ Depth (inches): ____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juglans cinerea*	70	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	70	=Total Cover	
50% of total cover: 35		20% of total cover:	14
Sapling/Shrub Stratum (Plot size: 15)			
1. *Diospyros virginiana*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20	=Total Cover	
50% of total cover: 10		20% of total cover:	4
Herb Stratum (Plot size: 5)			
1. *Quercus palustris*	1	No	FACW
2. *Vitis aestivalis*	20	Yes	FACU
3. *Diospyros virginiana*	2	No	FAC
4. *Impatiens capensis*	15	No	FACW
5. *Microstegium vimineum*	50	Yes	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	88	=Total Cover	
50% of total cover: 44		20% of total cover:	18
Woody Vine Stratum (Plot size: 5)			
1. *Celastrus orbiculatus*	10	Yes	FACU
2.			
3.			
4.			
5.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	16	x 2 =	32
FAC species	72	x 3 =	216
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	188 (A)		648 (B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 4/3	100						
7-15	10YR 5/3	70	10YR 7/6	30	C	M		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Appendix C: Database Results

Database Results

Part 1 – Information for Planning and Consultation (IPAC), U.S. Fish and Wildlife Service
Part 2 – Pennsylvania Natural Diversity Inventory (PNDI), Pennsylvania Natural Heritage Program
Part 3 – Environmental Site Assessment Viewer, Pennsylvania Department of Environmental Protection

Part 1 – Information for Planning and Consultation (IPAC), U.S. Fish and Wildlife Service

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., *magnitude and timing of proposed* activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Montgomery County, Pennsylvania

Local office

Pennsylvania Ecological Services Field Office

(814) 234-4090
(814) 234-0748

MAILING ADDRESS
110 Radnor Road Suite 101
State College, PA 16801-7987

PHYSICAL ADDRESS
110 Radnor Road
Suite 101

State College, PA 16801-7987

http://www.fws.gov/northeast/pafo/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Indiana Bat Myotis sodalis There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be

found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Blue-winged Warbler *Vermivora pinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jun 30
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

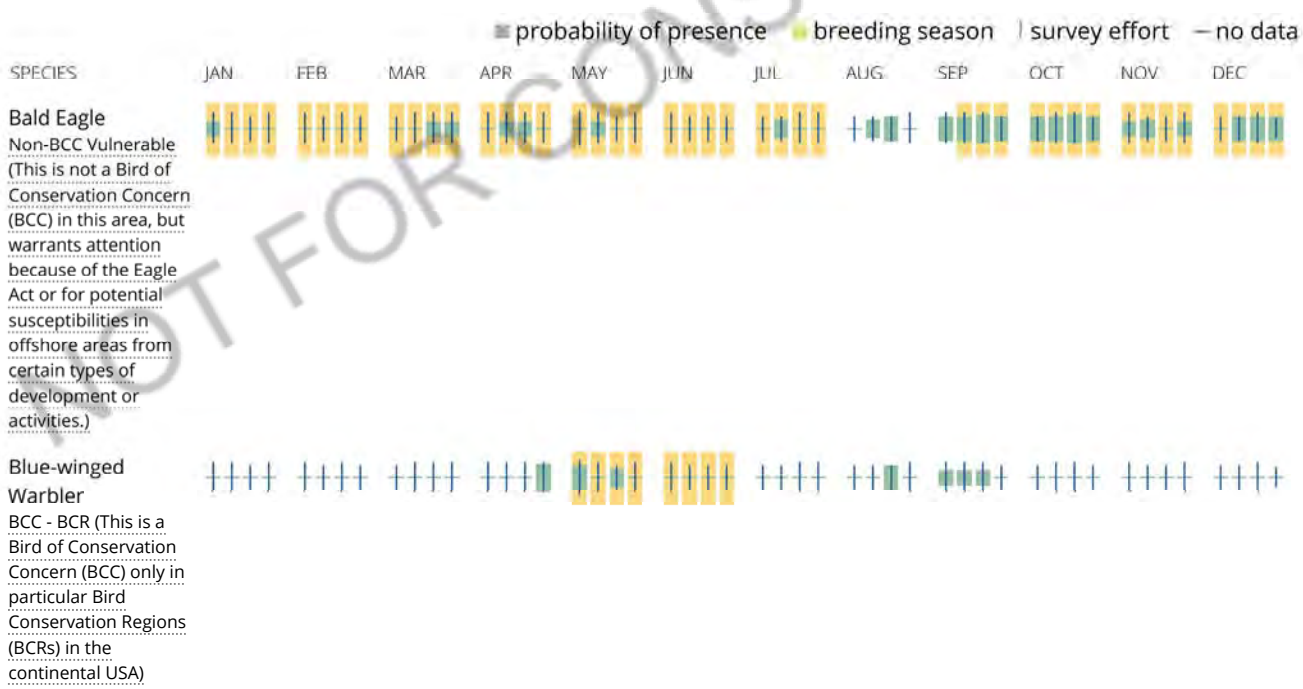
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler Protonotaria citrea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ( )

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

Golden Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

Kentucky Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Prairie Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Prothonotary Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Red-headed Woodpecker
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Rusty Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wood Thrush
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE
R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this

inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Montgomery County, Pennsylvania

Local office

Pennsylvania Ecological Services Field Office

(814) 234-4090
(814) 234-0748

MAILING ADDRESS
110 Radnor Road Suite 101
State College, PA 16801-7987

PHYSICAL ADDRESS
110 Radnor Road
Suite 101

State College, PA 16801-7987

http://www.fws.gov/northeast/pafo/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Indiana Bat Myotis sodalis There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be

found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Blue-winged Warbler *Vermivora pinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jun 30
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

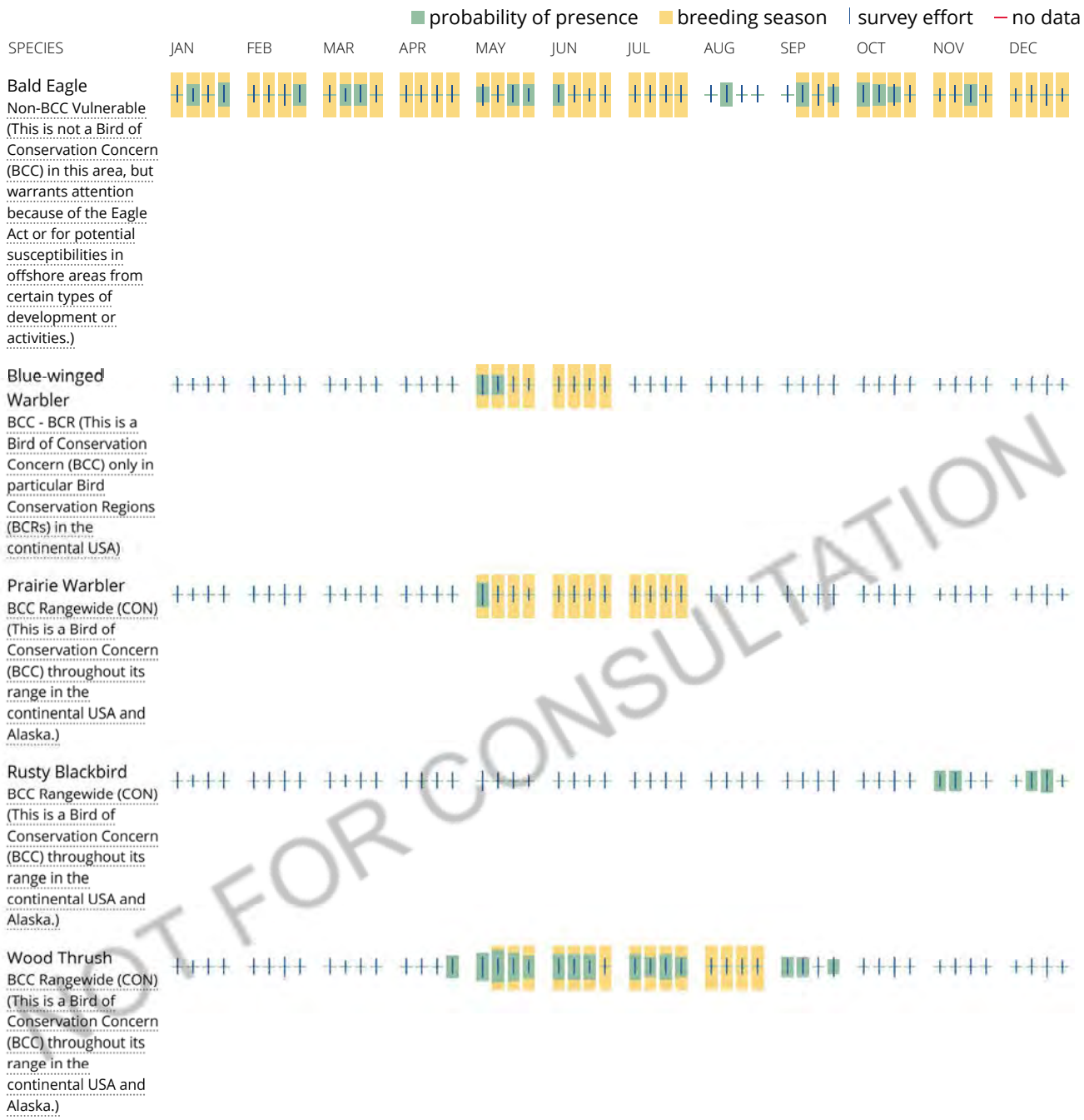
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that

may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

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3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.

Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of *Your Migratory Bird Report*

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Part 2 – Pennsylvania Natural Diversity Inventory (PNDI), Pennsylvania Natural Heritage Program

1. PROJECT INFORMATION

Project Name: **Sandy Run Stream Naturalization and Enhancement**
Date of Review: **12/18/2020 03:48:56 PM**
Project Category: **Habitat Conservation and Restoration, In-stream habitat restoration (habitat improvement structures)**
Project Area: **7.36 acres**
County(s): **Montgomery**
Township/Municipality(s): **ABINGTON TOWNSHIP**
ZIP Code:
Quadrangle Name(s): **AMBLER**
Watersheds HUC 8: **Schuylkill**
Watersheds HUC 12: **Lower Wissahickon Creek**
Decimal Degrees: **40.128700, -75.126643**
Degrees Minutes Seconds: **40° 7' 43.3214" N, 75° 7' 35.9138" W**

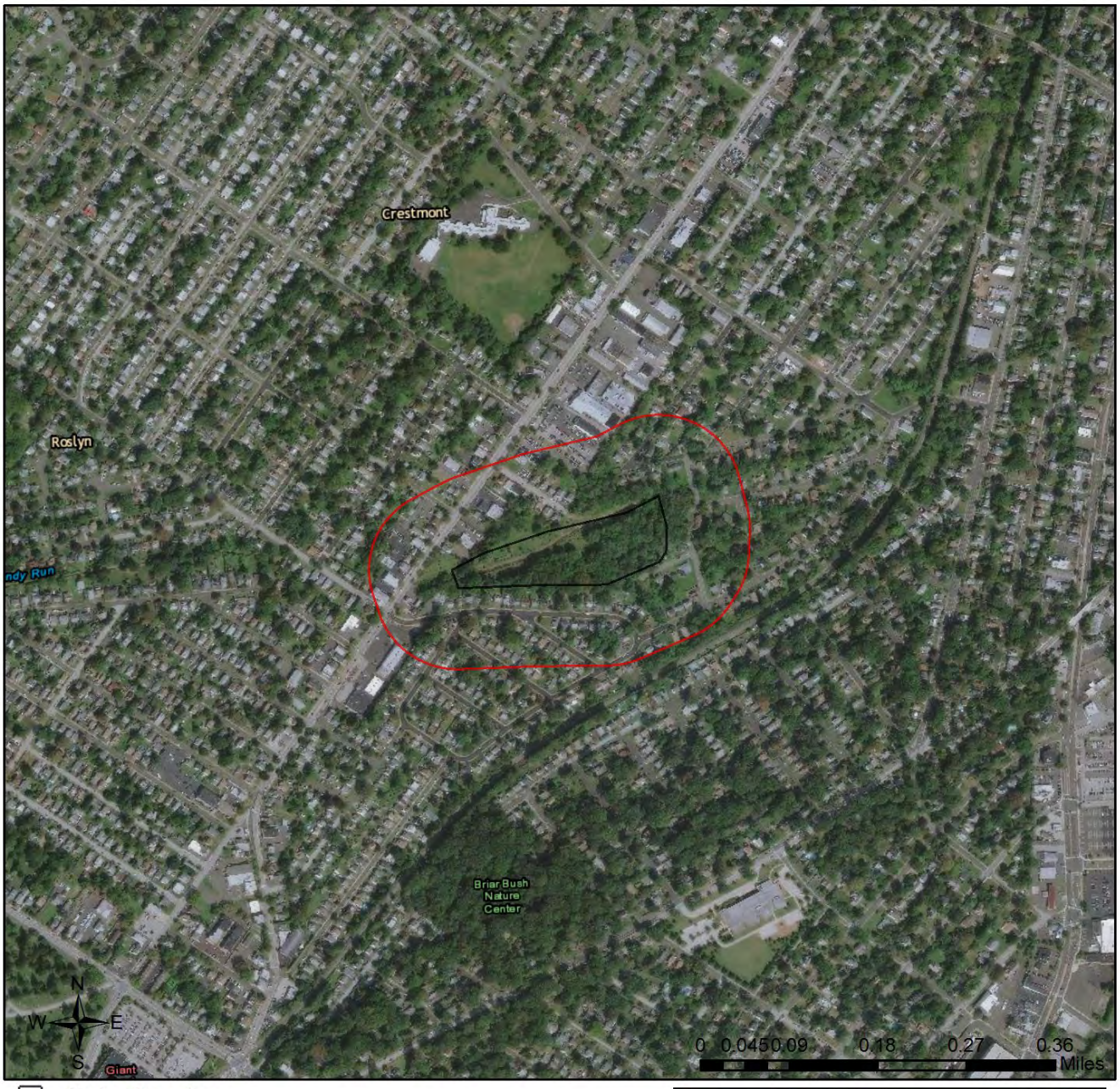
This is a draft receipt for information only. It has not been submitted to jurisdictional agencies for review.

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

Sandy Run Stream Naturalization and Enhancement



Project Boundary

Buffered Project Boundary

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

Sandy Run Stream Naturalization and Enhancement

Project Boundary

Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

1. PROJECT INFORMATION

Project Name: **Sandy Run Stream Regrading, Stabilization, and Floodplain Enhancement**
Date of Review: **12/18/2020 03:54:55 PM**
Project Category: **Habitat Conservation and Restoration, Streambank stabilization (with riprap)**
Project Area: **2.24 acres**
County(s): **Montgomery**
Township/Municipality(s): **ABINGTON TOWNSHIP**
ZIP Code:
Quadrangle Name(s): **HATBORO**
Watersheds HUC 8: **Schuylkill**
Watersheds HUC 12: **Lower Wissahickon Creek**
Decimal Degrees: **40.132736, -75.109393**
Degrees Minutes Seconds: **40° 7' 57.8486" N, 75° 6' 33.8145" W**

This is a draft receipt for information only. It has not been submitted to jurisdictional agencies for review.

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

Sandy Run Stream Regrading, Stabilization, and Floodplain Enhancement

Project Boundary

Buffered Project Boundary

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

Sandy Run Stream Regrading, Stabilization, and Floodplain Enhancement

Project Boundary

Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service
RESPONSE:
No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

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5. ADDITIONAL INFORMATION

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For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

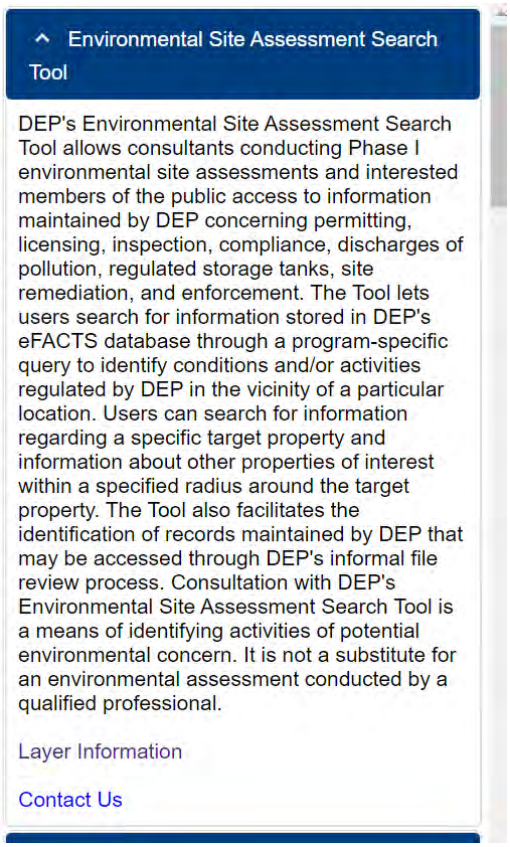
Part 3 – Environmental Site Assessment Viewer, Pennsylvania Department of Environmental Protection

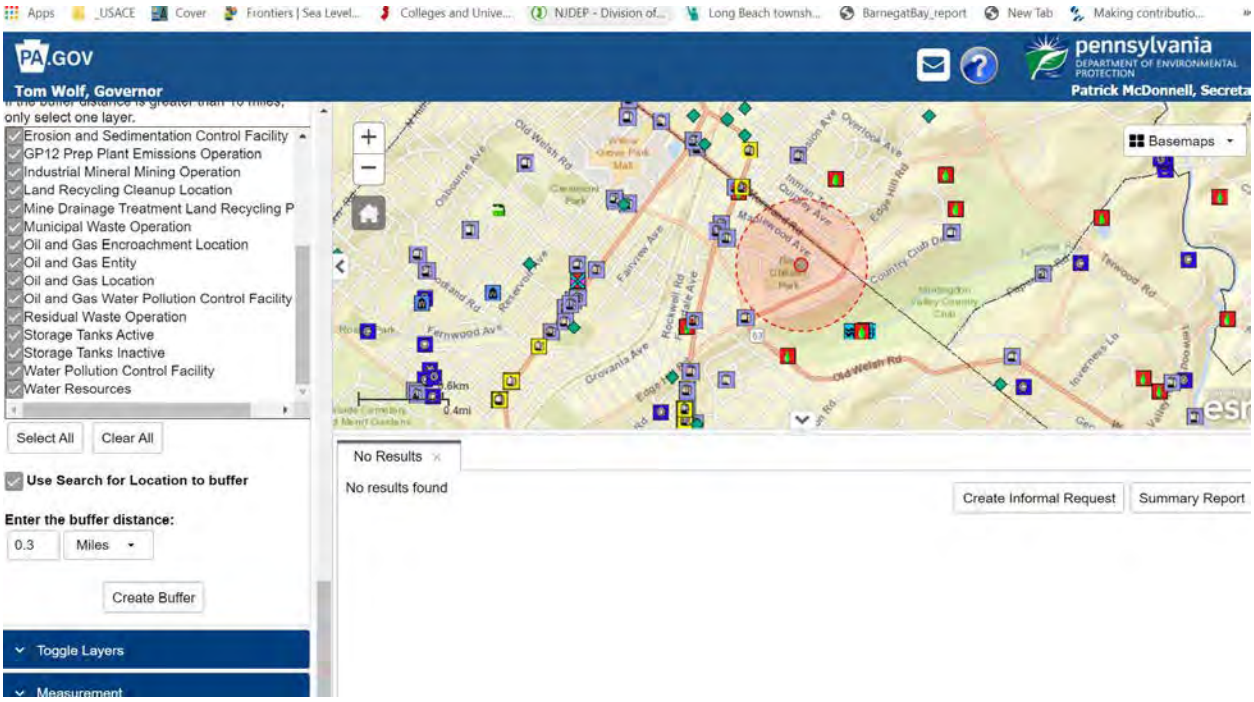
Pennsylvania Department of Environmental Protection Environmental Site Assessment Search

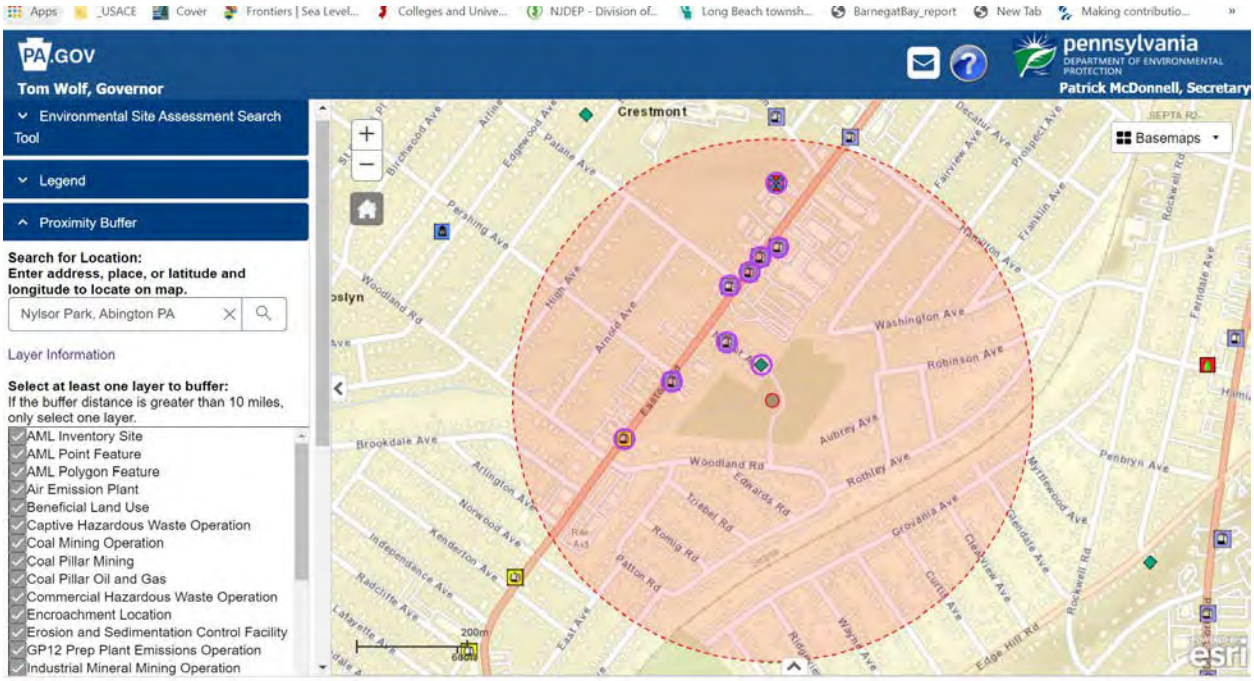
Roychester and Grove Park, Abington PA

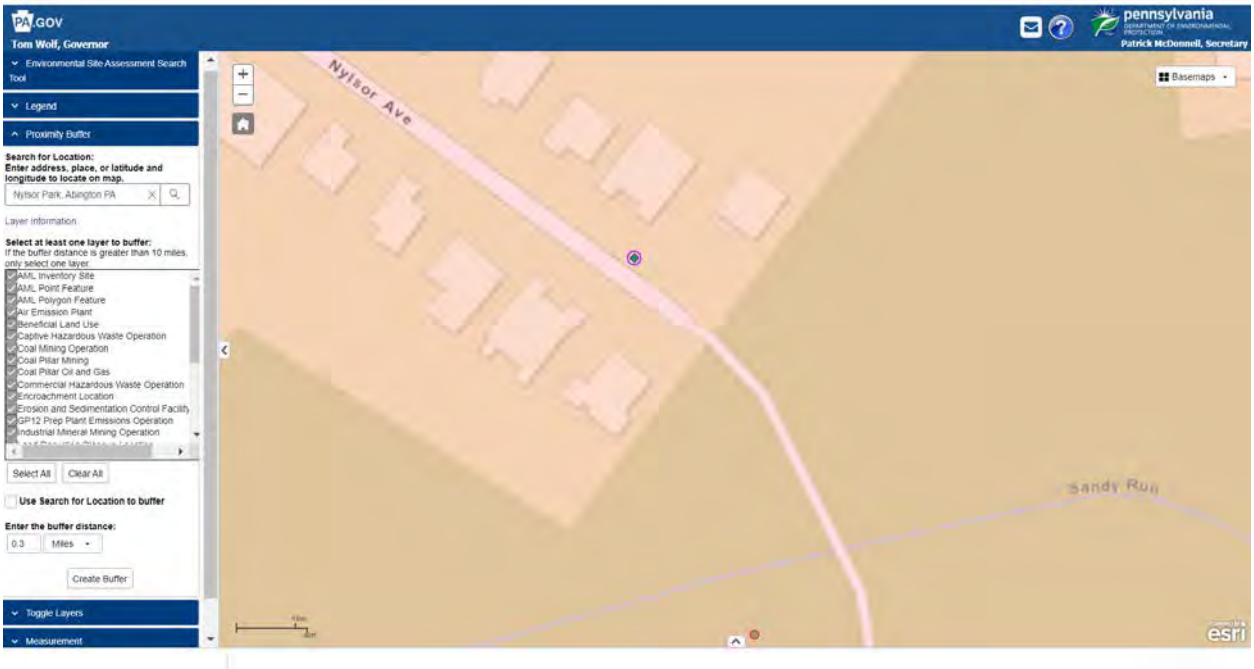
Conducted on 18 March 2021

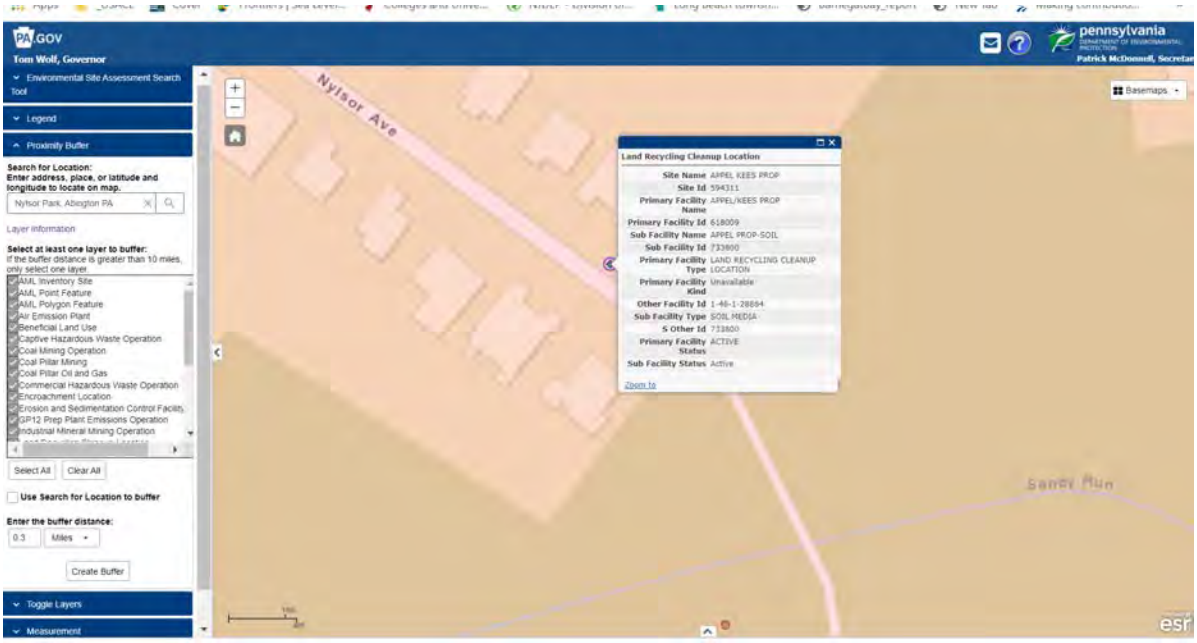
https://gis.dep.pa.gov/esaSearch/




Apps
_USACE
Cover
Frontiers | Sea Level...
Colleges and Unive...
NJDEP - Division of...
Long Beach townsh...
BarnegatBay_report
New Tab
Making contributio...
PA.GOV
Tom Wolf, Governor
pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Patrick McDonnell, Secreta
only select one layer.
Erosion and Sedimentation Control Facility
GP12 Prep Plant Emissions Operation
Industrial Mineral Mining Operation
Land Recycling Cleanup Location
Mine Drainage Treatment Land Recycling P
Municipal Waste Operation
Oil and Gas Encroachment Location
Oil and Gas Entity
Oil and Gas Location
Oil and Gas Water Pollution Control Facility
Residual Waste Operation
Storage Tanks Active
Storage Tanks Inactive
Water Pollution Control Facility
Water Resources
Select All
Clear All
Use Search for Location to buffer
Enter the buffer distance:
0.3
Miles
Create Buffer
Toggle Layers
Measurement
Basemaps
No Results
No results found
Create Informal Request
Summary Report







Land Recycling Cleanup Location Land Recycling Cleanup Locations (LRCL) are divided into one or more sub-facilities categorized as media: Air, Contained Release or Abandoned Container, Groundwater, Sediment, Soil, Surface Water, and Waste. Media is the environmental resource that is associated with the cleanup effort. The following primary facility kinds describe the Acts from which cleanup locations are derived: Act2 Land Recycling and Environmental Remediation Standards The first declaration of Section 102 of the policy provides a brief description of the purpose of Act2: The elimination of public health and environmental hazards on existing commercial and industrial land across this Commonwealth is vital to their use and reuse as sources of employment, housing, recreation, and open-space areas. The reuse of industrial land is an important component of a sound land use policy that will help prevent the needless development of prime farmland, open-space areas and natural areas and reduce public costs for installing new water, sewer, and highway infrastructure. CERCLA Comprehensive Environmental Response, Compensation, and Liability Act, also known as the Superfund This act was passed by Congress as a federal law in December of 1980, creating a tax on chemical and petroleum industries to: Identify and respond to sites from which releases of hazardous substances into the environment have occurred or could potentially occur Ensure they are cleaned up by responsible parties or through government funding Evaluate damages to natural resources HSCA Hazardous Sites Cleanup Act [This Act] provides the Department of Environmental Protection (DEP) with the funding and the authority to conduct cleanup actions at sites where hazardous substances have been released. HSCA also provides DEP with enforcement authorities to force the persons who are responsible for releases of hazardous substances to conduct cleanup actions or to repay public funds spent on a DEP funded cleanup action. HSCA funds are also used to pay the state share of costs of cleanup actions at Pennsylvania sites in the Federal Superfund program. Under the provisions of HSCA, most HSCA sites involve bankrupt facility owners, abandoned facilities, and inappropriate disposal of hazardous substances. As a general rule, HSCA sites do not include active facilities with financially viable owners. Other The Other primary facility kind includes a mixture of various different cleanup sites, no further action sites, and potential sites. This is optional data that the regional offices are not required to maintain. STSP Storage Tank Spill and Prevention Act Releases and/or ruptures from improperly installed or faulty storage tanks contaminate

the Commonwealth's land and water resources. This act was passed to prevent such contamination through "improved safeguards on the installation and construction of storage tanks."

Appendix D: Clean Air Act Assessment

General Conformity Review and Emission Inventory:
Abington Environmental Infrastructure Improvement Project

Table 1 provides an emission inventory for the Abington Stormwater Infrastructure Improvement Project based on a list of equipment assumed to be necessary for construction and an estimate of for NOx, VOC, and $PM_{2.5}$ emissions from the equipment. The estimate of NOx and VOC emissions is calculated based on the number of engines, engine size (hp), and duration of operation (EQ Hours [hrs]), a load factor (LF) (based on average percentage of rated horsepower during use during the project).Load factors are based on other General Conformity Reviews and Emission Inventories from similar projects.

Table 1 shows the estimated hp-hr required for each equipment/engine category. Hp-hr was calculated using the following equation:

hp-hr = # of engines*hp*LF*hrs/day*days of operation

The total amount of emissions NOx. VOC, $PM_{2.5}$ emissions generated from each equipment/engine category is calculated by multiplying the power demand (hp-hr) by an emission factor (g/hp-hr) and converted to tons for each piece of individual equipment/engine category and the combined total. The following equations were used:

emissions (g) = power demand (hp-hr) * emission factor (g/hp-hr)

emissions (tons) = emissions (g) * (1 ton/907200 g)

Table 1. Project Emission Sources and Estimated Power

Abington Sec 566 Environmental Infrastructure Improvement													
Total Project Emissions						**NOx**			**VOC**			**PM2.5**	
TABLE 1 - PROJECT EMISSION SOURCES AND ESTIMATED POWER						**Emission**	**Emissions**		**Emission**	**Emissions**		**Emission**	
	# of		**Load**	**EQ**		**Factors**	**(tons)**		**Factors**	**(tons)**		**Factors**	
	Engines	**HP**	**Factor (LF)**	**Hours**	**hp-hr**	**(g/hp-hr)**	907185		**(g/hp-hr)**			**(g/hp-hr)**	
TRUCK, HIGHWAY, 20,000 LBS (9,000 KG)	1	362	0.570	34.00	7,015.6	8.100	0.063		0.700	0.005		0.400	0.003000
TRUCK, HIGHWAY, 25,000 LB (11,340 KG)	1	320	0.570	17.00	3,100.8	8.160	0.028		0.760	0.003		0.400	0.001000
TRUCK, HIGHWAY, CONVENTIONAL,	1	130	0.570	1.00	74.1	10.330	0.001		0.540	0.000		0.400	0.000000
TRUCK, HIGHWAY, 45,000 LB (20,412 KG)	1	230	0.570	2.00	262.2	10.720	0.003		0.670	0.000		0.400	0.000000
TRUCK, HIGHWAY, 35,000 LB (15,876 KG)	1	265	0.570	5.00	755.3	10.000	0.008		0.800	0.001		0.400	0.000000
DUMP TRUCK, HIGHWAY, 10 - 13 CY (7.6 -	1	250	0.800	2.00	400.0	9.200	0.004		0.910	0.000		0.400	0.000000
DUMP TRUCK, HIGHWAY, 16 - 20 CY	1	400	0.800	6.00	1,920.0	9.200	0.019		0.910	0.002		0.400	0.001000
TRUCK, HIGHWAY, 8,600 GVW, 4X4	1	135	0.570	1.00	77.0	9.200	0.001		0.910	0.000		0.400	0.000000
AIR COMPRESSOR, 250 CFM (7 CMM),	1	74	1.000	23.00	1,702.0	9.500	0.018		0.910	0.002		0.400	0.001000
CRANES, MECHANICAL, LATTICE	1	197	0.590	45.00	5,230.4	9.500	0.055		0.910	0.005		0.400	0.002000
CRANE, MECHANICAL, LATTICE BOOM,	1	285	0.590	24.00	4,035.6	9.500	0.042		0.910	0.004		0.400	0.002000
CRANE, HYDRAULIC, TRUCK MOUNTED,	1	130	0.590	41.00	3,144.7	9.500	0.033		0.910	0.003		0.400	0.001000
CRANE, HYDRAULIC, SELF-PROPELLED,	1	80	0.590	152.00	7,174.4	9.500	0.075		0.910	0.007		0.400	0.003000
CRANE, HYDRAULIC, TRUCK MOUNTED,	1	245	0.590	254.00	36,715.7	9.500	0.384		0.910	0.037		0.400	0.016000
HYDRAULIC EXCAVATOR, CRAWLER	1	345	0.590	16.00	3,256.8	9.500	0.034		0.910	0.003		0.400	0.001000
HYDRAULIC EXCAVATOR, CRAWLER,	1	110	0.590	7.00	454.3	9.500	0.005		0.910	0.000		0.400	0.000000
HYDRAULIC EXCAVATOR, CRAWLER,	1	93	0.570	40.00	2,115.8	9.500	0.022		0.910	0.002		0.400	0.001000
HYDRAULIC EXCAVATOR, CRAWLER,	1	115	0.590	7.00	475.0	9.500	0.005		0.910	0.000		0.400	0.000000
HYDRAULIC EXCAVATOR, CRAWLER,	1	70	0.590	2.00	82.6	9.500	0.001		0.910	0.000		0.400	0.000000
HYDRAULIC EXCAVATOR, CRAWLER,	1	176	0.590	26.00	2,699.8	9.500	0.028		0.910	0.003		0.400	0.001000
CRANE, HYDRAULIC, TRUCK MOUNTED,	1	355	0.590	3.00	628.4	9.500	0.007		0.910	0.001		0.400	0.000000
CRANE, HYDRAULIC, TRUCK MOUNTED,	1	130	0.590	8.00	613.6	9.500	0.006		0.910	0.001		0.400	0.000000
CRANE, HYDRAULIC, TRUCK MOUNTED,	1	245	0.590	200.00	28,910.0	9.500	0.303		0.910	0.029		0.400	0.013000
LOADER/BACKHOE, WHEEL, 1.10 CY	1	74	0.590	64.00	2,794.2	9.500	0.029		0.910	0.003		0.400	0.001000
LOADER/BACKHOE, WHEEL, 1.40 CY	1	91	0.590	13.00	698.0	9.500	0.007		0.910	0.001		0.400	0.000000
LOADER, FRONT END, WHEEL,	1	74	0.430	5.00	159.1	9.500	0.002		0.910	0.000		0.400	0.000000
LOADER, FRONT END, WHEEL,	1	169	0.430	5.00	363.4	9.500	0.004		0.910	0.000		0.400	0.000000
LOADER, FRONT END, WHEEL, SKID-	1	49	0.590	8.00	231.3	9.500	0.002		0.910	0.000		0.400	0.000000
TRACTOR, CRAWLER (DOZER), 76-100	1	80	0.640	21.00	1,075.2	9.500	0.011		0.910	0.001		0.400	0.000000
TRACTOR, CRAWLER (DOZER), 300-340	1	310	0.640	33.00	6,547.2	9.500	0.069		0.910	0.007		0.400	0.003000
TRACTOR, CRAWLER (DOZER), 181-250	1	240	0.640	1.00	153.6	9.500	0.002		0.910	0.000		0.400	0.000000
CONCRETE PUMP, PUMP & BOOM, 117	1	210	0.740	4.00	621.6	9.200	0.006		0.910	0.001		0.400	0.000000
GRADER, MOTOR, ARTICULATED, 215	1	259	0.610	1.00	158.0	9.200	0.002		0.910	0.000		0.400	0.000000
MAN-LIFT, LINE-TRUCK, W/ 1,000 LB	1	270	0.460	11.00	1,366.2	9.200	0.014		0.910	0.001		0.400	0.001000
BRUSH CHIPPER, 12" (305 MM) DIA LOG	1	174	0.730	11.00	1,397.2	9.200	0.014		0.910	0.001		0.400	0.001000
			Total Hours	1,093.00		Subtotals:	1.307						
					NOx Emissions (tons) =		1.3	**VOCs Emissions (tons) =**		0.1	**PM2.5 Emissions (tons) =**		0.05

Appendix E:

Clean Water Act Section 404(b)(1) Record of Consideration

CLEAN WATER ACT SECTION 404 (b)(1) EVALUATION
U.S. ARMY CORPS OF ENGINEERS

Abington Water Resources Infrastructure Project,

January 14, 2021

PROJECT DESCRIPTION

Location. The project area is located in the Sandy Run Creek watershed in Abington, PA.

General Description. The project entails improvements to two distinct reaches of Sandy Run Creek in Abington, PA. Improvements will be made by relocating a sewer line, replacement of culverts, grading and planting degraded sections of the stream channel to restore connection to the floodplain, stabilizing eroding areas with stone, removing concrete lining and gabion baskets, and encouraging a meandering thalweg with stone, logs, and root wads. Additionally, a stormwater outlet will be re-located to create a stream, which will entail grading in a forested area for the new stream channel as well as grading to create depressional areas to encourage on-site storage of runoff and stream overflows.

Purpose. The purpose of this project is to improve channel stability, floodplain function, and aquatic habitat in Sandy Run Creek at Roychester Park and Grove Park in Abington Township, Pennsylvania.

1. Review of Compliance (Section 230.10(a)-(d))

a. The discharge represents the least environmentally damaging practicable alternative and if in a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its purpose.

   YES

b. The activity does not appear to:

   1) violate applicable state water quality standards or effluent standards prohibited under Section 307 of the CWA; 2) jeopardize the existence of Federally listed threatened and endangered species or their critical habitat; and 3) violate requirements of any Federally designated marine sanctuary

   YES

c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values

   YES

d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem

   YES

2. Technical Evaluation Factors (Subparts C-F).

Responses are written in italics (Not Significant, Significant, or N/A)

a. Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C) (Sec. 230.20-230.25).

1) Substrate. *Not Significant*
2) Suspended particulates/turbidity. *Not Significant*
3) Water. *Not Significant*
4) Current patterns and water circulation. *Not Significant*
5) Normal water fluctuations. *Not Significant*
6) Salinity gradients. *N/A*

b. Potential Impacts on Biological Characteristics of the Aquatic Ecosystem (Subpart D) (Sec. 230.30-230.32).

1) Threatened and endangered species. *Not Significant*
2) Fish, crustaceans, mollusks and other aquatic organisms in the food web. *Not Significant*
3) Other wildlife. *Not Significant*

c. Potential Impacts on Special Aquatic Sites (Subpart E) (Sec. 230.40-230.45).

1) Sanctuaries and refuges. *N/A*
2) Wetlands. *Not Significant*
3) Mud flats. *N/A*
4) Vegetated shallows. *N/A*
5) Coral reefs. *N/A*
6) Riffle and pool complexes. *Not Significant*

d. Potential Effects on Human Use Characteristics (Subpart F) (Sec 230.50-230.45)

1) Municipal and private water supplies. *N/A*
2) Recreational and commercial fisheries. *Not Significant*
3) Water-related recreation. *Not Significant*
4) Aesthetics. *Not Significant*
5) Parks, national and historic monuments, national seashores, wilderness areas, research sites, and similar preserves. *Not Significant*

1. Evaluation and Testing (Subpart G) (Sec. 230.60-230.61)

Responses are written in italics (Yes or No)

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material.

1) Physical characteristics, *Yes*
2) Hydro-geography in relation to known or anticipated sources of contaminants, *Yes*
3) Results from previous testing of the material or similar material in the vicinity of the project, *Yes*
4) Known, significant sources of persistent pesticides from land runoff or percolation, *Yes*
5) Spill records for petroleum products or designated hazardous substances (Section 311 of CWA) , *Yes*
6) Public records of significant introduction of contaminants from industries, municipalities, or other sources, *Yes*
7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities, *Yes*
8) Other sources (specify) *N/A*

List appropriate references: *For further information, see HTRW section of EA. No known contaminants exist in the project area. The only fill material to be brought from off-site will be clean stone, with the potential for a small amount of clean dirt for the closing of a storm water outfall in Grove Park.*

Draft Environmental Assessment for

b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and disposal sites and not likely to require constraints. The material meets the testing exclusion criteria.

YES

2. Disposal Site Delineation (Section 230.11(f)).

Responses are written in italics (Yes, No, or N/A)

a. The following factors, as appropriate, have been considered in evaluating the disposal site.

1) Depth of water at disposal site, *Yes*
2) Current velocity, direction, and variability at the disposal site, *Yes*
3) Degree of turbulence, *Yes*
4) Water column stratification, *Yes*

5) Discharge vessel speed and direction, *Yes*
6) Rate of discharge, *Yes*
7) Dredged/fill material characteristics (constituents, amount, and type of material, settling velocities), *Yes*
8) Number of discharges per unit of time, *N/A*
9) Other factors affecting rates and patterns of mixing (specify) *N/A*

List appropriate references: *The project entails grading of existing soil to reshape or create stream channels, and does not involve dredging or dredge material disposal. Material that could be considered "fill" consists of native soil that is graded into a different shape, clean stone, and re-handled stone within the existing stream channel. Stream flow will be diverted downstream temporarily during construction to prevent and minimize disturbance to the water column.*

b. An evaluation of the appropriate factors in 4a above indicates that the disposal site and/or size of mixing zone are acceptable

YES

3. Actions to Minimize Adverse Effects (Subpart H) (Sec. 230.70-230.77).

All appropriate and practicable steps have been taken, through application of recommendation of Section 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.

YES

List actions taken:

a. A stream channel diversion will be used to avoid and minimize a sediment plume.

b. A sediment and erosion control plan is in place to minimize migration of sediments into streams and wetlands.

c. Project plans were designed to improve habitat in streams and riparian zones.

4. Factual Determination (Section 230.11).

Responses are written in italics (Yes, No, or N/A)

A review of appropriate information as identified in items 2 - 5 above indicates that there is minimal potential for short or long term environmental effects of the proposed discharge as related to:

a. Physical substrate (review sections 2a, 3, 4, and 5 above). *Yes*

b. Water circulation, fluctuation and salinity (review sections 2a, 3, 4, and 5). *Yes*

c. Suspended particulates/turbidity (review sections 2a, 3, 4, and 5). *Yes*

d. Contaminant availability (review sections 2a, 3, and 4). *Yes*

e. Aquatic ecosystem structure, function and organisms(review sections 2b and c, 3, and 5) *Yes*

f. Proposed disposal site (review sections 2, 4, and 5). *Yes*

g. Cumulative effects on the aquatic ecosystem. *Yes*

h. Secondary effects on the aquatic ecosystem. *Yes*

5. Findings of Compliance or non-compliance. (Sec. 230.12)

The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines: YES