

**ENVIRONMENTAL ASSESSMENT**  
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Federal Financial Assistance Grant Number: 0403.21.072693  
John Bartram Association Education Center, Philadelphia, PA

Prepared as Part of the National Fish and Wildlife Foundation  
Delaware Watershed Conservation Fund

Prepared by:



U.S. Fish and Wildlife Service

In Partnership With:

*John Bartram Association*

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

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Name, Title  
U.S. Fish and Wildlife Service

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Date

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## 1.0 INTRODUCTION

The Delaware Watershed Conservation Fund (DWCF) is part of the National Fish and Wildlife Foundation (NFWF) Delaware River Program, which is dedicated to restoring the fish and wildlife habitats and water quality of the Delaware River and its tributaries. The DWCF was launched in 2018 to conserve and restore natural areas, corridors, and waterways on public and private lands that support native fish, wildlife, and plants, and to contribute to the vitality of the communities in the Delaware River watershed. Since 2018, the fund has awarded \$40.4 million to 159 projects, which generated \$59.7 million in match, for a total conservation impact of \$100.1 million. These projects will collectively restore almost 22 miles of riparian habitat and 76 miles of stream habitat, conserve and enhance 1,322 acres of wetland habitat, restore 255 acres of floodplain, improve 27,105 acres of forest habitat, and open 4,719 acres for public access. Projects are located in the following states within the Delaware River watershed: Delaware, New Jersey, New York, and Pennsylvania. Major funding for the DWCF is provided by the U.S. Fish and Wildlife Service (USFWS).

The USFWS, as lead federal agency, and its Project partners, John Bartram Association (JBA) and the DWCF, are proposing to create a 12,000 square foot Watershed Education Center at Bartram’s Garden, the John Bartram Association Education Center, Philadelphia, PA, Federal Financial Assistance Grant Number: 0403.21.072693 (Project). As the Project administrator, JBA is managing the Project activities.

This Environmental Assessment (EA) evaluates two alternatives to address the need to increase access to environmental education and engagement, foster education and community revitalization, conserve natural resources, facilitate waterway stewardship, and promote healthy lifestyles and a healthy environment: a No Action alternative and a conceptual design action alternative. The EA further analyzes the potential impacts these alternatives may have on the natural and human environment. This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), regulations contained in 43 CFR Part 46, and USFWS policy and guidance.

### 1.1 Purpose and Need

The purpose of the DWCF is to support grant projects that undertake one or more of the following actions:

- Sustain and enhance fish and wildlife habitat restoration and conservation activities;
- Improve and maintain water quality to support fish and wildlife, their habitats, and drinking water for people;
- Sustain and enhance water management for volume and flood damage mitigation improvements to benefit fish and wildlife habitat; and
- Improve recreational opportunities for public access in the basin consistent with the ecological needs of fish and wildlife habitat.

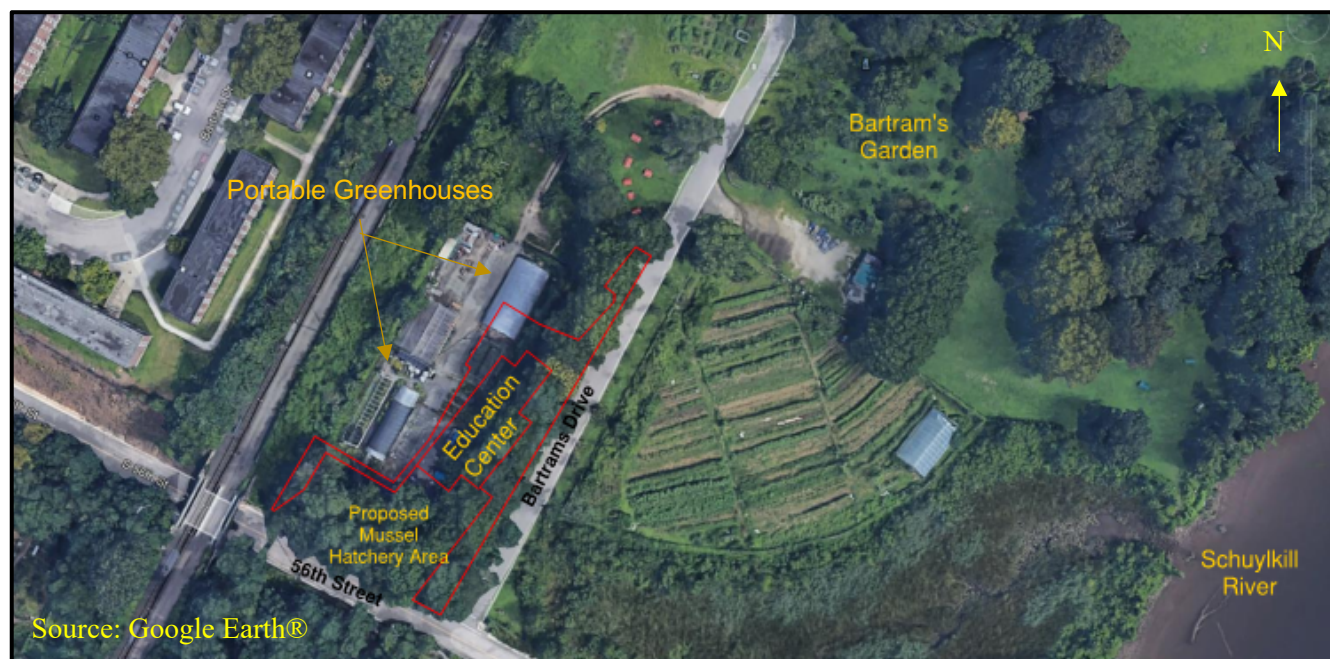
This Project would support the creation of a new Watershed Education Center close to the Lower Tidal Schuylkill River in Southwest Philadelphia, at Bartram’s Garden (Figure 1-1). The Project would provide hands-on opportunities for public and K-12 watershed education, focusing on community and youth-driven, environmental stewardship. This Education Center would provide educational and recreational activities associated with the Lower Tidal Schuylkill River in the Southwest Philadelphia neighborhood. The Project would be designed and built in conjunction with a freshwater mussel hatchery being developed by the Partnership for the Delaware Estuary (the “Hatchery”). The Hatchery and the Project are proposed to be separate wings of a single building within the Bartram’s Garden premises. Details on the Hatchery are discussed in section 5.0.

The Project would create a functional classroom and lab space and a commercial-grade teaching kitchen to provide watershed and environmental education and opportunities for watershed and environmental stewardship and recreation. In 2019, a series of community planning meetings held at Bartram’s Garden identified the following neighborhood priorities: community stewardship; STEM-based youth-enrichment opportunities; and watershed health.

By investing in community involvement and education, the Project would result in new opportunities for community watershed stewards to engage in the enhancement of water quality, and fish and wildlife habitats. The Project would educate local students and residents on watershed issues such as ecosystems, organism life cycles, and water quality monitoring and support coordinated restoration and protection of fish and wildlife habitat. In addition, the teaching kitchen to be included in the Project would allow Bartram’s Garden to offer programs in healthy eating, nutrition, and healing, thereby supporting healthier lifestyles for the Southwest Philadelphia community

Current programs at Bartram’s Garden rely almost exclusively on the limited indoor spaces available in the site’s original 18<sup>th</sup>-century estate buildings. None of these structures were designed as educational spaces and thus are not outfitted as classrooms. Their historic nature adds further complexity to their current continuous use as educational space. The Project would allow Bartram’s Garden to have adequate indoor space available in the event of inclement weather and to support year-round engagement through the colder months. In addition, some more technical aspects of our education programs, particularly the lab work done by high school students in our watershed internship program as part of their weekly water quality monitoring, requires a consistent indoor location to avoid compromising the specimens being analyzed.

**Figure 1-1 Project Area Overview – JBA Education Center, Philadelphia, Pennsylvania**



## 2.0 ALTERNATIVES

An alternatives analysis was performed to determine the most feasible and prudent means of achieving the defined Project purpose and need. The ability to provide watershed and environmental education and opportunities for watershed and environmental stewardship and recreation was evaluated under each

alternative. Two alternatives were analyzed: a No Action Alternative and the Proposed Action Alternative, as described below.

## **2.1 The subject property and Bartram’s Garden has been in use as a public green space for approximately 125 years. According to historic maps, no permanent structures have been on the proposed Education Center site since at least the 1920s. No Action Alternative**

Under the No Action Alternative, the Education Center would not be established. Because Bartram’s Garden (Garden) currently has no comparable Education Center, there would be no opportunity for JBA to provide access to environmental education and engagement, scientific knowledge, and recreational opportunities for the more than 5,000 school children projected to attend programs at the Education Center. For these reasons, the No Action Alternative would not meet the Project’s purpose and need to provide watershed and environmental education and opportunities for recreation and stewardship.

## **2.2 Proposed Action Alternative**

The Proposed Action Alternative would establish a 12,000-square-foot Watershed Education Center to provide hands-on opportunities for community and K–12 watershed education.

The new Education Center would be located on previously developed land within the 50-acre Bartram’s Garden facility along the popular Bartram’s Mile Trail and would be visible to trail users. The Education Center would include the development of classroom space and learning labs, would be available year-round, and would comply with ADA recommendations.

Approximately 5,000 students and 100,000 visitors visit Bartram’s Garden each year and it is anticipated that many these visitors would utilize the new Education Center. The number of visitors to the area is projected to grow due to the new Schuylkill River Trail connection that opened in 2021.

Educational programs for the new Education Center would be developed jointly with Garden staff, local scientists, and educators, students, and community leaders, including the Southwest Philadelphia Leadership Team (SWLT). Educational programs would include classroom partnerships with local schools, an existing award-winning paid youth internship focused on watershed health and community stewardship, an existing culturally relevant boatbuilding program with the neighboring Richard Allen Preparatory Charter School, and popular watershed recreation including fishing, boating, and cultural activities.

As of June 2022, the Project team has completed schematic design of the 12,000 square feet, 2-story building (Appendix A). As noted above, the Project would be one wing of a single building, the other wing of which would be the Hatchery.

The Project would include the following:

- Two first-floor classrooms with lab capacity (745 square feet and 675 square feet respectively)
- A first-floor commercial-grade teaching kitchen (807 square feet)
- A second-floor classroom with lab capacity (763 square feet)
- A first-floor atrium, shared with the Partnership for the Delaware Estuary, for exhibits, community events, and facility wayfinding (2290 square feet)
- Access to a green roof and outdoor classroom and gathering spaces

To support the Education Center’s high levels of public access and activity, the building would also include appropriate storage, custodial, circulation, and office spaces as well as accessible public restrooms

available for both program participants and independent visitors accessing the building from the adjacent Bartram's Mile Trail.

The combined building would be accessible from 56<sup>th</sup> Street to the south and from Bartram's Garden to the north. The Schuylkill River trail, a 75-mile pedestrian and bike path, runs along the Schuylkill River adjacent to the Project site. The building would include parking and the number of parking spaces would be determined based on the Philadelphia Zoning Code requirements. The specific parcel upon which the Education Center would be built would not have any parking as parking requirements will be elsewhere in Bartram's Garden.

The Project is designed to be harmonious with the existing historic architecture of Bartram's Garden. Although final design and material choices have not been completed, JBA intends to maximize use of sustainable building materials and practices, including a green roof and harvesting of rainwater for garden irrigation.

Design development would begin in the Spring of 2023 once additional fundraising is completed. Construction is projected to begin in Q4 2023 and completed by Q4 2024. The Proposed Action Alternative meets the Project's purpose and need by establishing an Education Center with functional classroom spaces to provide environmental and watershed education and engagement. For these reasons, the Proposed Action is the preferred alternative for this EA.

### 3.0 AFFECTED ENVIRONMENT

The Project area is along 56<sup>th</sup> Street, in the City of Philadelphia, close to the Lower Tidal Schuylkill River. The Project area is located in southwest Philadelphia, in the Kingsessing neighborhood, which is an area with mixed industrial, commercial and residential uses. Kingsessing is a historically industrialized neighborhood with high minority and low-income populations.

The Education Center would be located in the southwest portion of Bartram's Garden. Bartram's Garden is a 50-acre historic botanical garden and arboretum open to the public on the banks of the Lower Tidal Schuylkill River that aims to create equitable relationships among people and nature through immersive, community-driven experiences. The Project site, of 0.65 acres, consists of invasive and volunteer vegetation, ornamental trees, an approximately 0.5 acre asphalt paved area and portable greenhouse structures (shown on Figure 1) of approximately 900 to 1,800 square feet that were placed on the site approximately 6 to 10 years ago. All of the portable greenhouses would be shifted slightly to accommodate the Education Center. These structures are temporary and moving them would not require any ground disturbance. The greenhouses would remain operational throughout construction of the Project. Additional temporary greenhouse structures are located adjacent to the Project area, which would remain in place.

#### 3.1 Resources Eliminated from Further Analysis

The following resources were dismissed from further evaluation because the resource does not occur in the area and/or because implementation of the Proposed Action would not affect these resources or issues, as described below.

**Wetlands** – The Project site is located in an upland area, over 500 feet from the Lower Tidal Schuylkill River. According to the US Fish and Wildlife Service (USFWS) National Wetland Inventory, no wetlands are present in the Project area.

**Flood Zones** - According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, the Project site is located outside of the Special Flood Hazard Areas (SFHA). The proposed Education Center is located in Zone X, defined as areas outside the 500-year floodplain.



**Surface Water & Hydrology** – The Project area is located over 500 feet west of the Lower Tidal Schuylkill River. The Proposed Action would not involve in-water work.

**Essential Fish Habitat** – The Proposed Action would not involve in-water work and is located over 500 west of the Lower Tidal Schuylkill River, therefore no essential fish habitat (EFH) are present within the Project area.

**Utilities and Infrastructure** – The Proposed Action does not involve any additional utilities or infrastructure or any modifications to existing utilities and infrastructure. The proposed Project would tie in directly to the existing Philadelphia Energy Company (PECO), Philadelphia Water Department (PWD) and Philadelphia Gas Works (PGW) systems. Therefore, utilities and infrastructure were not included in this analysis.

### **3.2 Introduction – Scope of Resources Evaluated**

Environmental resources identified and analyzed in this document are listed below along with reasons for their inclusion in this EA. The evaluation of environmental effects to these resources for each alternative is described in “Section 4.0: Environmental Consequences.” Technical reports prepared by consultants for the John Bartram Association contain more extensive descriptions of resources such as fish, wildlife, and cultural resources include the Phase I Environmental Site Assessment (ESA) and Phase II ESA prepared for the Project area in 2019 (refer to Appendix C). A brief description of existing resource conditions is provided below.

### **3.3 Soils and Sediment**

The Project site consists of approximately 0.14 acres of asphalt and 0.14 acres of vegetation. The soils at the subject property have been designated as Urban Land-Howell complex. This land type is typically found in various positions on the uplands, on terraces on the coastal plain, and on the flood plain. Soils are generally 4% urban land, which is highly variable, and 96% Howell. Urban land-Howell complex is not prime farmland. (Appendix B).

Phase I and Phase II Environmental Site Assessments (ESA) for the Project area were performed between September and December 2019. These studies were performed for the proposed mussel hatchery, which would be physically connected to the education center within the same Project area. Thus, the findings and conclusions contained in the ESA reports are relevant to this EA. Based on historic industrial uses of the adjacent properties, the Phase I ESA recommended collecting soil samples for analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and Resource Conservation and Recovery Act (RCRA) monitored metals<sup>1</sup>.

As part of the Phase II ESA, soil samples were collected at depths ranging from 2 to 6 feet below grade. The soil samples were sent to Pace Analytical laboratory for analysis of VOCs, SVOCs and RCRA and compared to the Pennsylvania Department of Environmental Protection (PADEP) Clean Fill standards. The analysis found there were no exceedances of the PADEP Clean Fill standards, which are the most stringent state soil handling standards. Based on these results, the soil would be suitable for reuse onsite (refer to Appendix C for the soil sampling results and Phase I and II ESA reports).

### **3.4 Biological Resources and Vegetation**

#### **3.4.1 Common Fish and Wildlife Species and Habitats**

The Project site consists of approximately 50% asphalt-paved area for greenhouses and 50% vegetation located along the perimeter of the paved area. Vegetation consists of approximately 0.14 acres of invasive and volunteer species, shrubs and ornamental trees.

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<sup>1</sup> The results of the Phase I ESA did not dictate the need to sample for pesticides, total organic carbon, PCBs.

The Project site is over 500 feet away from the Lower Tidal Schuylkill River; no in-water work would occur as part of this Project and no fish or aquatic organisms are present within the Project area.

With regard to terrestrial wildlife, common urban bird and mammal species are likely present within the vegetated portion of the Project area, such as squirrels (*Sciuridae* spp.) and raccoons (*Procyon lotor*).

### 3.4.2 Special-Status Species

The Endangered Species Act (ESA) provides broad protection for species of fish, wildlife, and plants that are listed as threatened or endangered in the USFWS online Information for Planning and Consultation (IPaC) planning tool report generated for the Project, indicated that no federally listed threatened or endangered species occurs in the Project area and no critical habitat has been designated. The monarch butterfly (*Danaus plexippus*), a candidate species<sup>2</sup>, was identified potentially within the Project area. Appendix D contains the IPaC query run on July 5, 2022, which encompasses the entire Project area.

In addition, a Pennsylvania Natural Heritage Program (PHNP) Pennsylvania Natural Diversity Inventory (PNDI) review was conducted to determine if the Project area contained any state listed species or their habitats (Appendix E). The PNDI review found two species potentially present in the vicinity of the Project area, as shown in Table 3-1.

**Table 3-1 Special-Status Species in Proximity to the Project Area**

| Common (and Scientific) Name                           | Designation                   | Critical Habitat Designated | Description   |
|--|-------------------------------|-----------------------------|---|
| Waterhemp Ragweed<br>( <i>Amaranthus cannabinus</i> )  | State Special Concern Species | No                          | Water-hemp ragweed grows in intertidal marshes, mudflats, and river shores, where it is subjected to daily fluctuations in water levels. Flowers mid-April - mid-May; fruits June - early July. |
| River Bulrush<br>( <i>Schoenoplectus fluviatilis</i> ) | State Special Concern Species | No                          | River bulrush habitat consists of part shade/sun, wet areas (often in shallow water), on lake shores, ponds, river banks, marshes and swales.   |

### 3.4.3 Migratory Birds

The Migratory Bird Treaty Act (MBTA) (40 Stat 755 as amended; 16 USC 703-712) is a federal law implemented to protect migratory birds. The MBTA makes it unlawful to pursue, hunt, take, capture, kill, or sell birds listed therein. The MBTA does not discriminate between live or dead birds and offers full protection to any bird parts, including feathers, eggs, and nests.

The IPaC query for the Project indicated that 14 migratory Birds of Conservation Concern have the potential to be present in the Project area for breeding, overwintering, and/or during migration, or may be present year-round. Migratory bird species that may be present include bald eagle (*Haliaeetus leucocephalus*)<sup>3</sup>, black skimmer (*Rynchops niger*), black-billed cuckoo (*Coccyzus erythrophthalmus*), blue-winged warbler (*Vermivora pinus*), bobolink (*Dolichonyx oryzivorus*), Canada warbler (*Cardellina canadensis*), Hudsonian godwit (*Limosa haemastica*), Kentucky warbler (*Oporornis formosus*), lesser yellowlegs (*Tringa flavipes*), prairie warbler (*Dendroica discolor*), prothonotary warbler (*Protonotaria citrea*), red-headed woodpecker (*Melanerpes erythrocephalus*), rusty blackbird (*Euphagus carolinus*),

<sup>2</sup> Candidate species are not yet listed or proposed for listing under the ESA and there are generally no Section 7 requirements (consultation) for candidate species.

<sup>3</sup> The bald eagle is not a Bird of Conservation Concern but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

short-billed dowitcher (*Limnodromus griseus*), and wood thrush (*Hylocichla mustelina*). Refer to Appendix D for the IPaC query run on July 5, 2022.

### 3.5 Human Health and Safety

The proposed Project is in Southwest Philadelphia, a low-income, minority neighborhood with limited access to the Lower Tidal Schuylkill River and associated recreational and educational opportunities. This area is associated with industrial use including active freight rail, more than 100 abandoned industrial sites, and the former Philadelphia Energy Solutions refinery, where a catastrophic fire occurred in 2019<sup>4</sup>.

A Phase I and Phase II Environmental Site Assessment (ESA) for the Project area were performed between September and December 2019. These studies were performed for the proposed mussel hatchery, which would be physically connected to the Education Center, and include the Project area. As part of the Phase I ESA, state, federal, and local agency databases were reviewed to determine if potentially hazardous sites are located, or were located, near the Project area. A number of potential hazardous sites were discovered from review of aerial photographs, historic Sanborn maps, zoning maps, federal, state, and local environmental records, and the City of Philadelphia Zoning Archive Records. A Phase II ESA was conducted to analyze the soils in the Project area to determine if they contain hazardous materials. The analysis found there were no exceedances of the PADEP Clean Fill standards, which are the most stringent state soil handling standards. The Project site, therefore, was determined not to contain materials hazardous to human health.

### 3.6 Cultural Resources

Projects receiving federal funding and permitting are required to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (36 CFR 800). Section 106 of the NHPA outlines the process by which federal agencies are required to determine the effects of their undertakings on historic properties. The term “historic property” refers to cultural resources that have been determined eligible for listing, or are listed, in the National Register of Historic Places (NRHP). Historic properties may include archaeological sites, historic resources, or properties of traditional cultural or religious importance to tribes. Impacts to historic properties could occur from a project if there were an alteration to the characteristics of a property that qualify it for inclusion in the NRHP.

Bartram’s Garden contains the Bartram family’s stone house and several other structures from the 1700s and 1800s. The Historic Bartram House and Garden were dedicated as a National Historic Landmark in 1963.

The grantee has consulted with the Pennsylvania State Historic Preservation Office (SHPO) on the Proposed Action. The SHPO noted that the following historic properties, which are listed in or eligible for the NRHP, are located in the Project area of potential effect (APE): Bartram Village Historic District (Resource # 1995RE38478) and Philadelphia and Reading Railroad (Resource # 2010RE02630).

The following Federally-Recognized Tribes have a potential interest in the Project area and have been invited to consult on the Project:

- Absentee-Shawnee Tribe of Indians of Oklahoma
- Delaware Nation, Oklahoma
- Delaware Tribe of Indians
- Eastern Shawnee Tribe of Oklahoma

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<sup>4</sup> Thomas, TaRhonda. “Investigation begins into Philadelphia Energy Solutions refinery explosion, fire.” 6abcAction News. June 24, 2019. <https://6abc.com/philadelphia-energy-solutions-oil-refinery-breaking-news-fire/5361100/>.

- Pamunkey Indian Tribe
- Saint Regis Mohawk Tribe
- Shawnee Tribe

Tribal Historic Preservation Officers (THPO) from each tribe listed above were provided a copy of the proposed Project details (refer to Appendix F).

### 3.7 Socioeconomics, Environmental Justice, and Protection of Children

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires federal agencies to examine proposed actions to determine whether they would have disproportionately high and adverse human health or environmental effects on minority or low-income populations. The CEQ suggests that communities may be considered “minority” if the cumulative percentage of minorities within the affected community is greater than 50 percent, or if the cumulative percentage of minorities within the affected community is meaningfully greater<sup>5</sup> than the minority population percentage in the general population (reference population). Communities may be considered “low-income” if the median household income for the affected community is below the poverty line,<sup>6</sup> or other indications are present that indicate a low-income community is present.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, seeks to protect children from disproportionately incurring environmental health risks or safety risks that might arise as a result of federal policies, programs, activities, and standards. Environmental health risks and safety risks include risks to health and safety attributable to products or substances that a child is likely to come in contact with or ingest. For a project to affect environmental justice (EJ) populations or children, significant adverse environmental impacts must fall disproportionately upon EJ populations or children within the affected area.

The Project area is within a primarily minority neighborhood. Private residences (approximately 150 feet from the Project area) and the Richard Allen Preparatory Charter School (greater than 500 feet from the Project area) are located near the Project area. Data from the U.S. Census Bureau for Philadelphia, Pennsylvania and the U.S. (as the reference populations) are provided in Table 3-2. Southwest Philadelphia is poorer than the city average, with more than 30% of residents living in poverty, including 46% of children under the age of 18. In southwest Philadelphia, the Schuylkill River is currently not accessible to local communities, including neighborhoods of color, due to the development of industrial facilities in this area, such as U.S. Gypsum Company, Mobil Oil and Plains All American Pipeline. Identified EJ populations are shown in bold font in the table.

**Table 3-2 Demographic Information for Philadelphia, PA and U.S.**

| <b>Demographic Indicator</b> | <b>Project Area Census Block Group: 421010391002</b> |  | <b>Philadelphia</b> | <b>Pennsylvania</b> |
|------------------------------|--|--|---------------------|---------------------|
|                              |  |  |                     |                     |

<sup>5</sup> CEQ and USEPA have not defined any percentage of the population that can be characterized as “meaningfully greater.” As provided by *The National Guidance for Conducting Environmental Justice Analysis* (USEPA 1998), our analysis assumes the meaningfully greater criterion for minority populations to be equal to or greater than 120 percent (1.2 times) of the reference minority population.

<sup>6</sup> In the United States, the poverty line is set annually. In 2022, the poverty level was an income of \$13,590 for an individual and \$32,470 for a family of five.

|                              |            |  |           |            |
|------------------------------|------------|--|-----------|------------|
| Population                   | 1,797      |  | 1,576,251 | 12,964,056 |
| <b>Race</b>                  |            |  |           |            |
| White                        | 3%         |  | 39.3%     | 81.0%      |
| People of Color              | <b>97%</b> |  | 60.7%     | 24%        |
| <b>Income and Employment</b> |            |  |           |            |
| Low Income                   | <b>97%</b> |  | 22.3%     | 28%        |
| Unemployment Rate            | <b>24%</b> |  | 16.5      | 5%         |

Source: U.S. Environmental Protection Agency (EPA) Environmental Justice Screen

The city of Philadelphia has minority populations of black/African American and Hispanic/Latino that are meaningfully greater (more than 2 times) than the reference population of the state of Pennsylvania. The city of Philadelphia also has a low-income population that is meaningfully greater than the reference population (more than 2 times). As shown in Table 3-2, EJ populations are present in the Project area based on income and race data available for the city, state and country. Children are also present in the Project area at nearby residences and the Richard Allen Preparatory Charter School.

The Project area is one of the city’s poorest and most industrialized: per the 2019 American Community Survey, nearly 1 in 3 Southwest Philadelphia residents lived in poverty—higher than the city average of 1 in 4. A 2017 study by Penn State University found that in pre-pandemic times, Bartram’s Garden welcomed more than 100,000 visitors annually. That survey revealed that our visitors’ racial and ethnic demographics roughly matched those of Philadelphia as a whole, with 52% identifying as people of color.

### 3.8 Land Use, Recreation, and Coastal Zone Management

#### 3.8.1 Land Use

The Project area located within the 50-acre Bartram’s Garden facility. The adjacent land is used for recreational, residential, commercial and industrial purposes. Plains All American Pipeline industrial facility is located to the north of Bartram’s Garden, while residences and commercial properties are located to the west. The properties to the south of Bartram’s Garden are currently not in use, and consist of former industrial sites (formerly U.S. Gypsum Company and Mobil Oil until the late 1990s/early 2000s). The subject site is also located adjacent to an active railroad line operated by CSX, which is now one large, unused site that is primarily covered in asphalt and concrete.

The Project site consists of approximately 50% cleared, asphalt-paved area for greenhouses currently in use by Bartram’s Garden and which would be moved for the Project and 50% vegetation. The paved greenhouse complex that is adjacent to the Project site was established within the footprint of an underutilized tennis court and would remain in use.

The Sankofa Community Farm, founded in 2011, is located within Bartram's Garden. The Farm encompasses roughly 4 acres within the southern portion of the Garden, accessible via the Bartram's Mile Trail, including a crop field established within the footprint of an underutilized baseball diamond. The Farm focuses on crops of the African Diaspora and practices natural agriculture, employing roughly 25 local high school interns annually to study food sovereignty and traditional foodways.

According to the City of Philadelphia City Maps, the zoning maps classify the Project site as “SP-PO-A: Passive Parks and Open Space (Special Purpose)”. Surrounding properties are zoned as industrial mixed use, residential mixed use and residential.

The Philadelphia Water Department (PWD) regulates stormwater management for projects within Philadelphia that disturb over 15,000 square feet of earth. The Project is expected to disturb approximately 17,000 square feet of earth and therefore would be required to comply with the PWD Stormwater Regulations.

PWD's Stormwater Regulations fall into two categories, Post-Construction Stormwater Management (PCSM) Requirements and an E&S Requirement. PCSM Requirements regulate how stormwater runoff leaves a project site in the built, or post-development, condition. There are four PCSM Requirements:

- **Water Quality**, to recharge the groundwater table and reduce pollution in stormwater runoff;
- **Channel Protection**, to minimize channel erosion resulting from stormwater runoff by controlling the peak flow rates for medium-sized storms;
- **Flood Control**, to prevent, through peak flow rate control, flooding caused by large storm events that could cause damage to life or property; and
- **Public Health and Safety Release Rate**, to minimize the impact of flooding in areas of the City with infrastructure capacity restrictions through peak flow rate control.

The E&S Requirement stipulates that practices be employed during construction to reduce any erosion and sedimentation that occur as a result of development activities.

### 3.8.2 Recreation

The Project area is part of Bartram's Garden, which is a 50-acre public park located on the Lower Tidal Schuylkill River. Bartram's Garden is a venue for art, access to the tidal river, and environmental education. It provides the only safe public access point to the river in Southwest Philadelphia

Bartram's Garden welcomes an estimated 100,000 visitors annually for free outdoor education, recreation, and cultural programming focused on nature and the Lower Tidal Schuylkill River features. Bartram's Garden features include several outbuildings, trails, a garden, and woods and meadows. Bartram's Mile, a 1.55-mile paved multi-use path, stretches through Bartram's Garden and extends south along the river. It is part of the 75-mile Schuylkill River Trail and is maintained by Bartram's Garden in partnership with the Schuylkill River Development Corporation.

### 3.8.3 Coastal Zone Management

The Coastal Zone Management Act (CZMA) of 1972 provides assistance to states, in cooperation with federal agencies, for developing land and water use programs in coastal zones. Section 307 of the CZMA stipulates that where a federal project initiates reasonably foreseeable effects on any coastal use or resource, the action must be consistent to the maximum extent practicable with enforceable policies of the affected state's federally approved coastal management plan.

In September 1980, the U.S. Department of Commerce approved Pennsylvania's Coastal Zone Management Plan under the authority of the federal CZMA of 1972. At the state level, Pennsylvania's Coastal Resources Management (CRM) Program is established by Executive Order 1980-20, a Memoranda of Understanding between Commonwealth Agencies, and Article I, Section 27 (the Environmental Rights Amendment) of the Pennsylvania Constitution. The coastal zone is the area where the land meets the sea, including coastal waters and adjacent shorelands. These areas face increasing pressure from development, shoreline erosion, biodiversity losses and nonpoint source pollution. Pennsylvania has two coastal areas: 77 miles of shoreline along Lake Erie and 112 miles of coastline along the Delaware Estuary. The Project area is located within the Delaware Estuary coastal zone and would be subject to federal consistency review under the CZMA and CRM. A federal consistency review was performed for the proposed Project (Appendix H), as discussed in Section 4.6.

### 3.9 Visual Resources

Visual resources are generally defined as the natural and built features of a landscape that may be viewed by the public and contribute to the visual quality and character of an area. Visual resources form the overall impression that an observer has of an area or its landscape character. Distinctive landforms, water bodies, vegetation, and manmade features that contribute to an area's aesthetic qualities are elements that contribute to an area's visual character. Visual quality is generally defined as the visual significance or appeal of a landscape based on cultural values and the landscape's intrinsic physical elements (United States Army Corps of Engineers [USACE] 1988).

The visual character and quality of project areas are described using terminology and criteria commonly applied as part of established processes for visual resource management and assessment by federal agencies (U.S. Department of Interior, Bureau of Land Management [BLM] 1984; U.S. Forest Service 1995; Federal Highway Administration 1981; USACE 1988). The appearance of the landscape is described using the dominant elements of form, line, color, and texture, as appropriate. These dominant elements are the basic components used to describe visual character and quality for most visual assessments.

Visual sensitivity is a measure of viewer interest and concern for the visual quality of the landscape and potential changes to it. Visual sensitivity is determined based on a combination of viewer sensitivity and viewer exposure, the types of viewers, activities they may be engaged in, and the expressed or anticipated level of public interest and concern for visual resources and quality. Viewer exposure considers the numbers of viewers and the frequency and duration of views.

Viewer sensitivity varies for individuals and groups depending on the activities viewers are engaged in, their values and expectations related to the appearance and character of the landscape, and their potential level of concern for changes to the landscape. High viewer sensitivity is typically assigned to viewer groups engaged in recreational or leisure activities, traveling on scenic routes for pleasure or to or from recreational or scenic areas, experiencing or traveling to or from protected, natural, cultural, or historical areas, or experiencing views from resort areas or their residences. Low viewer sensitivity is typically assigned to viewer groups engaged in work activities or commuting to or from work.

Viewer exposure varies for any particular view location or travel route, depending on the number of viewers and the frequency and duration of the views. Viewer exposure would typically be highest for views experienced by high numbers of people, frequently, and for long periods. Other factors, such as viewing angle and viewer position relative to a feature or area, can also be contributing factors to viewer exposure.

The Project site slopes gently from northwest to northeast toward the Lower Tidal Schuylkill River and may be characterized as previously developed site, consisting of open space, maintained turf and ornamental trees, and greenhouses. Surrounding land use of the Project site is described in Section 3.8.1.

The site is visible to users of Bartram's Garden and the Schuylkill River Trail. Portions of the site are partially visible from the vacant lot located to the south the site across 56<sup>th</sup> street. The site is not visible to nearby residential areas. Viewers working at Bartram's Garden are considered to have a low concern for changes to the landscape at Bartram's Garden and thus have low viewer sensitivity. Viewers engaged in recreational or leisure activities (i.e., recreational boaters on the river, users of the Schuylkill River Trail) are considered to have a moderately high to high concern for changes to the landscape and thus have moderately high to high viewer sensitivity.

### 3.10 Air Quality and Noise

#### 3.10.1 Air Quality

Ambient air quality is protected by federal and state regulations. The Environmental Protection Agency (EPA) has developed National Ambient Air Quality Standards (NAAQS) for certain air pollutants, and air quality standards for each state cannot be less stringent than the NAAQS. The NAAQS determined by EPA set the concentration limits that determine the attainment status for each criteria pollutant. The EPA determines air quality attainment status based on whether the air quality in an area meets (attains) the NAAQS. Areas that violate NAAQS are designated as nonattainment areas for the relevant pollutants. Areas with insufficient data are designated as attainment/unclassified areas and are treated as attainment areas under the Clean Air Act. Areas that were previously designated nonattainment and have demonstrated compliance with a NAAQS are designated “maintenance” for 20 years after the effective date of attainment, assuming they remain in compliance with the standard.

The proposed Project is in Philadelphia County, which is a maintenance area or non-attainment area for the following (EPA, 2021):

- Ozone 8-hour (non-attainment): 0.070 ppm
- PM 2.5 24 hour (maintenance): 35 ug/m<sup>3</sup>
- CO (maintenance): 9 ppm

#### 3.10.2 Noise

Noise and sound can directly or indirectly affect health, enjoyment, and well-being. High levels of noise can cause hearing loss, interfere with communication, disturb concentration, and cause stress. Noise and sound may be continuous (constant noise at a steady level), steady (constant noise with a fluctuating level), impulsive (having a high peak of short duration), stationary (occurring from a fixed source), intermittent (at intervals of high and low levels), or transient (occurring at different levels). Sound is usually represented on a logarithmic scale with a unit called the decibel (dB).

Existing ambient noise levels (background noise levels) are the sounds from natural and artificial sources present at the time a sound measurement is taken. The Project area includes greenhouses within Bartram’s Garden and is in close proximity to residences (approximately 150 feet), industrial properties (e.g., Plains All American Pipeline), a charter school (approximately 900 feet from the Project area), active CSXT freight rail line (approximately 1,250 feet from the Project area) with associated noise from traffic, machinery, schools, rail operations and homes. The closest road with over 10,000 ADT (average daily traffic) is Lindbergh Boulevard, located approximately 850 feet from the Project area (PennDOT, 2022). The nearby operations function primarily during the day. According to the EPA, levels of 45 decibels are associated with indoor residential areas, hospitals, and schools, whereas 55 decibels is identified for certain outdoor areas where human activity takes place. The level of 70 decibels is identified for all areas in order to prevent hearing loss.

The City of Philadelphia Noise and Excessive Vibration Code (Chapter 10-400) was established to prevent noise and excessive vibration. The City of Philadelphia Noise and Vibration ordinance established the following:

- No person shall create or cause, or permit the creation of, sound that exceeds 3 decibels above background level measured at the property boundary of any hospital, nursing home, house of worship, courthouse, school, library or day care facility.
- No person shall create or cause, or permit the creation of, sound originating from a residential property audible at a distance greater than one hundred feet from the property boundary that



exceeds 3 decibels above background level measured beyond the property boundary (with some exceptions).

- No person shall create or cause, or permit the creation of, sound originating from a property used for a non-residential purpose that exceeds: 5 decibels above background level measured at the property boundary of the nearest occupied residential property; or 10 decibels above background level measured at the property boundary of the nearest occupied nonresidential property.
- Construction noise affecting residences should not be louder than five decibels above the background sound level from 8 p.m. to 7 a.m. on weekdays, and 8 p.m. to 8 a.m. on weekends, unless there is emergency or public works construction.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 Soils and Sediment**

#### **4.1.1 No Action Alternative**

The No Action Alternative would result in no beneficial or adverse impacts to soils and sediments within the Project area because there would be no ground disturbance.

#### **4.1.2 Proposed Action**

Approximately 0.65 acres of soil would be affected from establishment of the Education Center and parking area, resulting in permanent conversion of soils to impervious surfaces. However, the soils are not of high quality and are not prime farmland.

Earth moving is required for the establishment of the Education Center, which could result in minor erosion on site during excavation, grading, and construction. An erosion and sedimentation (E&S) control plan would be prepared in accordance with PADEP and Philadelphia Water Department regulations. E&S control measures and best management practices would be implemented to minimize the movement of soils on site. Native vegetation would be planted to stabilize soil and reduce erosion. In addition, any excavated soil can be reused onsite based on the soil sampling results documented as part of the Phase II ESA. Overall, the Proposed Action would result in minor adverse soil impacts for the creation of the Education Center.

### **4.2 Biological Resources and Vegetation**

#### **4.2.1 No Action Alternative**

The No Action Alternative would result in no ground disturbance or equipment used so there would be no disturbance to vegetation, wildlife, or habitats, resulting in no effect to biological resources and vegetation.

#### **4.2.2 Proposed Action**

Existing invasive vegetation, and some ornamental trees and shrubs would be cleared for the establishment of the Education Center. This vegetation type is not high quality habitat for bird and wildlife species. . Planting of native species around the Project site (as shown on the plans, Appendix A) would establish high quality vegetation and wildlife habitat nearby. Once established, these native species would have long-term positive impacts to biodiversity and local fauna.

Development of the Proposed Action would impact wildlife species from increased human activity and equipment noise which would cause some animals to avoid the area. However, once the Project is complete, wildlife species are expected to return to the general area.

With regard to the two identified state listed species found through the PNDI review (waterhemp ragweed and river bulrush), these species are typically found in wet marshy areas near river banks, a habitat type

which is outside the immediate Project site. On July 12, 2022, the Pennsylvania Department of Conservation and Natural Resources (DCNR) provided a letter concluding that the Proposed Action would likely have no adverse impact to the state-listed species of special concern (Appendix E). In their letter, DCNR recommended the following best management practices be implemented:

- Use a conservative approach to project design that minimizes permanent and temporary disturbances to soil and native vegetation.
- Clean boot treads, tools, construction equipment, and vehicles thoroughly (especially the undercarriage and wheels) before they are brought on site.
- Use clean project materials (e.g., weed-free straw) or materials native to the worksite to avoid introducing invasive species from contaminated sources.
- Revegetate or cover disturbed soil and stockpiles quickly to discourage the germination of invasive plants. Implement proper erosion control practices to stabilize soil and reduce runoff.
- Do not use seed mixes that include invasive species.
- Use habitat appropriate seed mixes.
- Use native plants for landscaping, revegetation, and stormwater management.
- Reduce the area of lawn and impermeable surfaces to the fullest extent practicable in favor of native gardens or habitat restoration (e.g., forest, meadow, wetland, etc.).

On July 27, 2022, the Pennsylvania Fish and Boat Commission provided a letter concluding that the Proposed Action would have no adverse impact to the species of concern. (Appendix E).

Development of the Proposed Action would cause migratory birds that are present in the area to move elsewhere due to increased human activity and equipment noise. However, once the Project is complete, migratory birds are expected to return to the general area due to the planting of native species.

Some ornamental trees and shrubs would be removed to establish the Education Center. Two MBTA species have the potential to nest in these shrubby areas – the black-billed cuckoo and prairie warbler. All ornamental tree and shrub removal would occur between October 16 and April 30 to avoid impacts to these nesting bird species. Native trees and shrubs planted around the site would result in long-term benefits to birds that inhabit these areas.

Overall, the Proposed Action is expected to result in long-term, beneficial impacts to biological resources generally through educating the local community on environmental stewardship. Hands-on activities including planting of native vegetation would improve wildlife habitat and water quality, resulting in long-term beneficial effects to biological species.

## **4.3 Human Health and Safety**

### **4.3.1 No Action Alternative**

The No Action Alternative would result in no changes to human health and safety. The existing infrastructure in the Project area does not present a risk to human health and safety.

### **4.3.2 Proposed Action**

A potential exists for accidents to occur during construction of the Education Center from the use of heavy equipment and hazardous materials on site. However, the implementation of safety measures would help to prevent accidents to workers at or near the site, including the use of BMPs and appropriate personal protective equipment, and the development of a construction health and safety plan. Visitors would be excluded from the Project site during construction of the Education Center with the installation

of signage where appropriate and temporary construction fencing, which would prevent injury to the public. Impacts to the health and safety of the public and workers during the establishment of the Education Center are anticipated to be temporary and minor.

Overall, the Proposed Action would result in long-term, beneficial impacts to human health and well-being due to the creation of environmental and watershed stewards and programs focusing on improving the environment and the development of enhanced recreational and educational facilities for use by the general public.

#### **4.4 Cultural Resources**

##### **4.4.1 No Action Alternative**

Since there would be no ground disturbance under the No Action Alternative, there would be no effects to archaeological or historic resources, or tribal cultural resources present in the Project area.

##### **4.4.2 Proposed Action**

The SHPO noted that the following historic properties, which are listed in or eligible for the National Register of Historic Places (NRHP), are located in the Project area of potential effect (APE): Bartram Village Historic District (Resource # 1995RE38478) and Philadelphia and Reading Railroad (Resource # 2010RE02630). On July 27, 2022, the PA SHPO reviewed the Proposed Action and confirmed that “the proposed Project would have No Effect on these historic properties.” (Appendix F).

On July 20, 2022, PA SHPO indicated that “there is a high probability that National Register-eligible archaeological sites are present within this project area.” PA SHPO stated that “it is our opinion that a Phase I archaeological survey should be conducted to locate potentially significant resources” (Appendix F). However, on August 16, 2022, PA SHPO indicated that based on the geotechnical report for the Project area, in its opinion, the proposed Project should have No Effect on archaeological resources (Appendix F). The PA SHPO also stated that their analysis indicates that archaeological resources are potentially located in this Project area. If the scope of the Project is amended to include additional ground-disturbing activity and/or historic property concerns, additional consultation with the PA SHPO is required (Appendix F).

The Bartram family’s stone house and several other structures from the 1700s and 1800s would be unaffected by establishment of the Project at Bartram’s Garden.

Of the 7 tribes that were invited to consult on the Project, the Shawnee and Delaware Nation, Oklahoma Tribes accepted the invitation. There were no responses from the other 5 tribes. The Shawnee Tribe responded to the July 12, 2022 invitation to consult on July 13, 2022 concurring that no known historic properties would be negatively impacted by this Project. If archaeological materials are encountered during construction, use or maintenance of this location, the Shawnee Tribe should be notified (Appendix F).

The Delaware Nation responded to the July 12, 2022 invitation to consult on July 18, 2022 accepting the invitation. They stated that the Proposed Action should have no adverse effect on any known cultural or religious sites of interest to the Delaware Nation, but there is always potential for discovery of archaeological resources in this area. If archaeological materials are encountered during installation of the Education Center, the Delaware Nation should be notified (Appendix D).

#### **4.5 Socioeconomics, Environmental Justice, and Protection of Children**

##### **4.5.1 No Action Alternative**

Under the No Action Alternative, the Education Center would not be established, which would result in a lack of educational and stewardship opportunities for children and the public in this predominantly

minority and low-income community. The No Action Alternative would result in the continued lack of investment and environmental education opportunities in the disadvantaged community.

Overall, because the Project area is located within an area inclusive of environmental justice populations based on income and race, opportunities to educate the local community and students would not be available to create environmental and watershed stewards and create a healthy environment for the local community, resulting in long-term adverse effects to environmental justice populations and children.

#### **4.5.2 Proposed Action**

Activities associated with installation of the Education Center would result in short-term, minor, beneficial impacts to local businesses due to purchases made by the workforce during Project activities, and expenses associated with the acquisition of material goods and equipment. The participation of youth and interns in educational programs, and greater use of the park and river for recreation, some of whom would be visitors/tourists to the area, would bring in additional income to city businesses from the purchase of good and services, such as meals, events, and hotel rooms, and science and recreation equipment, resulting in long-term benefits to socioeconomics.

The use of best management practices and site restrictions during construction would prevent children from coming into contact with construction equipment and hazardous materials, resulting in no adverse effects to the protection of children.

Construction and operation of the Education Center would not result in any impacts that would disproportionately affect the health and safety of children or EJ populations. The Project area would be fenced during construction, and access would be permitted only to construction personnel. The Proposed Action would result in long-term, beneficial impacts to the overall community, including children and EJ populations due to improved recreational, socioeconomic and educational opportunities for the local community and K-12 students.

Overall, the Proposed Action would result in long-term, beneficial impacts to EJ populations, children, and the local community.

### **4.6 Land Use, Recreation, and Coastal Zone Management**

#### **4.6.1 No Action Alternative**

The No Action Alternative would not result in changes to any land uses or zoning, therefore, no impacts would occur to land use as a result of this alternative.

The No Action alternative would have no measurable effect on recreation because access to Bartram's Garden, the Schuylkill River Trail, and the river would not change and recreational use of the site would remain consistent with ongoing activities. No impacts would occur to resources designated within the coastal zone as a result of the No Action Alternative

#### **4.6.2 Proposed Action**

The Proposed Action would alter approximately 17,000 square feet of previously disturbed land currently covered by asphalt and vegetation into a building structure, sidewalks, and outdoor classroom area resulting in a change in land use from existing conditions; however, zoning for the Project site would not change.

As discussed in Section 3.8.1, the Project would be required to comply with the PWD Stormwater Regulations. The Proposed Action would adhere to the PWD regulations and include design reviews and approvals through the PWD stormwater management review process.

The Proposed Action would beneficially impact recreation by creating an improved visitor experience to the public Bartram's Garden through access to environmental and watershed education and engagement.

The Proposed Action may lead to greater watershed stewardship and enhance recreational wildlife viewing. Hands-on activities for visitors of the Education Center, including planting of native vegetation, would improve wildlife habitat and water quality, resulting in long-term beneficial effects to recreation areas.

The Proposed Action would occur within the coastal zone and federal consistency review was performed and submitted to the Pennsylvania CRM office on August 5, 2022. PADEP provided a concurrence letter on September 12, 2022, indicating that the Proposed Action is consistent with all applicable CZM enforceable policies, which includes coastal hazards, habitat, ports and harbors, public access, and water quality policies (Appendix H).

## **4.7 Visual Resources**

### **4.7.1 No Action Alternative**

Under the No Action Alternative, the Proposed Action would not be implemented, and building of the Education Center would not take place. The existing visual resources would not change and thus the No Action Alternative would have no impact on visual resources.

### **4.7.2 Proposed Action**

The existing visual character and quality and viewer sensitivity for the Project site provides the baseline for determining impacts on visual resources. Visual impacts are assessed based on the level of contrast of these actions with existing conditions (i.e., landscape character and quality) and their visibility and proximity to sensitive viewers. For the purposes of impact analysis, visual contrast is assessed based on a project's contrast in form, line, color, and texture with landscape features of topography, vegetation, and structures. Visual impacts are considered substantial, or major, where visual contrast is moderately strong to strong for viewers with moderately high to high viewer sensitivity in foreground views. For this visual impact assessment, the foreground distance zone is defined at up to one-half mile from the proposed project (USFS 1995).

The degree of contrast that would be introduced by the Project is assessed using the following ratings:

- **Strong:** the element contrast demands attention, would not be overlooked, and is dominant in the landscape;
- **Moderate:** the element contrast begins to attract attention and begins to dominate the characteristic landscape;
- **Weak:** the element contrast can be seen but does not attract attention; and
- **None:** the element contrast is not visible or perceived (USDOJ BLM 1986).

The duration of construction, from initial site grading and staging of equipment to a completed Education Center, would be approximately fifteen months. During this time, construction activities, equipment, and vehicles would be visible in and around the Project site. However, visual impacts of construction would be minor due to their short duration and temporary nature. Lighting for operations, safety, and security would be motion-activated and/or use timers to minimize light exposure.

The existing open space, ornamental shrubs and trees, and one-story temporary greenhouse structures at the Project site would be replaced with a two-story building as part of the Project action. This would create a new rigid linear structure visible to visitors to Bartram's Garden and those users of the portion of the Schuylkill River Trail that crosses Bartram's Garden. The rigid pattern would contrast to some degree in form, line, color, and texture with the surrounding landscape and be somewhat noticeable to such recreational viewers with minimal viewer sensitivity. However, the varied forms, lines, colors, and

textures of existing industrial structures, greenhouses, equipment storage areas, and parking areas within and surrounding the Project site would reduce the contrast of the Education Center to a low level. These existing elements would also partially or fully screen views of much of the site for off-Project site viewers. Implementation of the applicable design measures, including a green roof, and native vegetation plantings would further reduce visual contrast at this location. Impact on visual resources associated with implementing the Proposed Action would be minor because the Education Center would be consistent with the existing character of Bartram's Garden and the surrounding neighborhood.

## **4.8 Air Quality and Noise**

### **4.8.1 No Action Alternative**

No Project activities would result from the No Action Alternative, therefore there would be no impacts to air quality or noise.

### **4.8.2 Proposed Action**

The Proposed Action would result in temporary, localized emission increases from heavy equipment exhaust, workers commuting to/from the site, and haul truck trips delivering materials to the site during Project construction. Emissions from heavy equipment, vehicles and haul trucks are primarily generated from diesel engine exhaust, and include NO<sub>x</sub>, CO, VOCs, SO<sub>2</sub>, and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>). These localized emission increases would last only during implementation of the Proposed Action. Combustion emissions would be minimal due to the small size of the vehicle and equipment fleet and the short time required to implement Project activities.

Fugitive particulate dust (PM<sub>10</sub> and PM<sub>2.5</sub>) would be generated by activities that disturb soil, such as grading and excavation, and would be reduced through the use of best management practices (BMPs) and mitigation measures. These include covering trucks when hauling earth or other materials that can become airborne, immediately stabilizing exposed areas, creating a rock construction entrance (stabilized construction access to reduce the tracking of mud and dirt onto roads by construction vehicles), and watering dirt roads to minimize generation of fugitive dust.

Philadelphia County has been designated as "marginal" nonattainment for the 2015 8-hour ozone standard. Temporary emissions during construction are expected to be below the general conformity *de minimus* thresholds, and therefore would not affect plans for achieving or maintaining compliance with the NAAQS, resulting in temporary minor impacts to air quality.

The Proposed Action would result in temporary minor adverse impacts to noise from the use of heavy equipment, machinery, and workers. Elevated noise levels during creation of the Education Center would be temporary and limited to daytime working hours, resulting in temporary minor impacts to noise. In addition, equipment would be properly maintained to minimize noise impacts.

As discussed in Section 3.10, nearby sensitive noise receptors include the recreational users of Bartram's Garden, the adjacent residential community and charter school. Based on the close proximity to the active railroad, industrial sites and major roadways to the sensitive receptors, the construction of the Project, which would occur in compliance with the local noise ordinance, would have minimal noise impacts.

## **5.0 CUMULATIVE EFFECTS**

CEQ regulations stipulate that a cumulative effects analysis be conducted to consider the potential impacts to the environment potentially resulting from the incremental impact of a proposed action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). Seven actions in

close proximity to the Project area would occur during the same time period as the Proposed Action. These are provided in Table 5-1 below.

**Table 5-1 Projects Included in the Cumulative Effects Analysis**

| <b>Project Name</b>         | <b>Project Proponent(s)</b>                          | <b>Actions</b>   | <b>Anticipated Construction</b>             | <b>Status</b> |
|-----------------------------|--|--|---|---------------|
| Mussel Hatchery             | Partnership for the Delaware Estuary & JBA           | Freshwater mussel hatchery facility for mussel production, community education and engagement, and watershed stewardship.  | 2023-2025                                   | Ongoing       |
| FloatLab                    | City of Philadelphia & JBA                           | Placement of a floating deck next to Bartram’s Garden for recreational and educational purposes  | 2024  | Ongoing       |
| Schuylkill River Trail      | Schuylkill River Trail Partners                      | Recreational trail along the Schuylkill River. Bartram’s Mile Trail opened in 2017 and would connect to existing trails in South Philadelphia. The feasibility study for the 61 <sup>st</sup> Street to Passyunk Avenue section is underway.   | 2024  | Ongoing       |
| Riverfront Restoration      | JBA & U.S. Army Corps of Engineers (ACOE)            | Multi-year restoration of Bartram’s Garden riverfront, eliminating invasive species and restoring the pre-industrial riparian habitat.   | 2030  | Ongoing       |
| Field Station & NESTT       | Woodland Academy- Greater Philadelphia Health Action | Two new riverfront facilities along the Bartram’s Mile trail: <ol style="list-style-type: none"> <li>1. Field Station: would support and enhance recreational boating, fishing and environmental education.</li> <li>2. The NESTT at Bartram’s Garden: new home for Woodland Academy providing nature-focused pre-K and childcare for 200 local students.</li> </ol> | 2028 (Public Boathouse)<br><br>2030 (NESTT) | Ongoing       |
| Lindbergh Blvd. Resurfacing | PennDOT  | Resurfacing of Lindbergh Blvd. currently under construction.   | 2023 (near completion)                      | Ongoing       |
| I-76 Reconstruction         | PennDOT  | Reconstruction of I-76   | 2025  | Future        |

Sources: PennDOT TIRE (2022), Schuylkill Banks (2022), JBA (2022)

The majority of the projects listed in Table 5-1 would have a beneficial cumulative effect because most of these projects are focused on improving access to the Schuylkill River and providing recreational and educational opportunities to the local community and visitors.

Implementation of the Mussel Hatchery, FloatLab, additional Schuylkill River Trail segments, the Field Station and NESTT, in combination with the Proposed Action, would result in an improved recreational and educational experience for local students, the community and visitors, as well as provide additional river access. This would benefit water-based recreation and stewardship leading to improved water quality, fish and wildlife habitats and overall enhance environmental conditions in the area. These projects, in combination, would also benefit local businesses that accommodate tourism, resulting in positive benefits to socioeconomics. These projects would all occur at least 1 year after the Project is completed, therefore, no cumulative impacts to noise, air, or access are anticipated.

The riverfront restoration project, in combination with the Proposed Action, would result in improved habitat over the long term since the riverfront restoration project focuses on restoring natural habitats and

the Proposed Action focuses on environmental and environmental stewardship and maintenance of restored areas.

The Lindbergh Boulevard resurfacing and I-76 reconstruction projects are the only roadway projects identified within proximity to Bartram's Garden. I-76 is located across the Schuylkill River, over 1 mile from the Project site. The Lindbergh Boulevard project is currently under construction and is located approximately 1,000 feet from the Project site and is expected to be complete prior to construction of the Proposed Action. Therefore, these projects would not create cumulative traffic, air, noise or access impacts to the community.

In summary, long-term beneficial cumulative effects are expected as a result of the Proposed Action in combination with past, present, and reasonably foreseeable future actions.

## **6.0 AGENCY COORDINATION AND PUBLIC INVOLVEMENT**

### **6.1 Agency Coordination**

Representatives of the following federal, state, and local agencies, tribes, and Project team members were consulted during Project planning and/or the development of this EA:

- Absentee-Shawnee Tribe
- City of Philadelphia Parks & Recreation
- Delaware Nation, Oklahoma Tribe
- Delaware Tribe of Indians Tribe
- Eastern Shawnee Tribe of Oklahoma
- John Bartram Association
- PADEP Coastal Resources Management Program
- Pamunkey Indian Tribe
- Pennsylvania Department of Conservation and Natural Resources
- Pennsylvania Fish and Boat Commission
- Pennsylvania Game Commission
- Pennsylvania State Historic Preservation Office
- Saint Regis Mohawk Tribe
- Shawnee Tribe
- U.S. Fish and Wildlife Service, Region 5

### **6.2 Public Involvement**

The Project is undergoing local, state, and federal approval processes, as described in Section 7 of this document. Ample public notice and involvement that provide opportunities for a wide variety of specialists, regulators, and residents to comment on and condition the Project's potential short-term and long-term impacts was performed.

Letters of support for the Project were submitted by the following entities:

- City of Philadelphia Parks & Recreation
- Partnership for the Delaware Estuary
- Rep. Joanna McClinton, State Representative
- Rep. Mary Gay Scanlon, U.S. House of Representatives
- Richard Allen Preparatory Charter School

The Project would provide educational opportunities for local students; coordination with the Richard Allen Preparatory Charter School regarding environmental education is already underway.



## 7.0 COMPLIANCE WITH FEDERAL, STATE, AND LOCAL LAWS

The proposed Project has been evaluated for consistency with applicable federal, state, and local laws, regulations, and programs. In addition to this EA, the following permits and/or consultations are also required by local, state, and federal agencies:

- City of Philadelphia Department of Licenses and Inspections - Building Permit
- City of Philadelphia Water Department – Erosion & Sedimentation Control Plan
- State Historic Preservation Office – consultation for historic and archaeological resources
- PADEP Coastal Resources Management Program - Coastal Zone Consistency Review
- Pennsylvania Department of Conservation and Natural Resources – listed species consultation
- Pennsylvania Fish and Boat Commission – listed species consultation
- Pennsylvania Game Commission – listed species consultation
- U.S. Fish and Wildlife Service, Region 5 – listed species consultation

Consultations with federal and state regulatory agencies and officials have been held to confirm the soundness of the Project and the ability to receive permits. Refer to Appendices C through E for agency consultation and permit authorizations received for this Project.

## 8.0 LIST OF PREPARERS

The following contributed to the development of this EA:

### U.S. Fish and Wildlife Service

| Name            | Role   |
|-----------------|--|
| Christina Ryder | Delaware River Watershed Program Manager, Science Applications |

### [John Bartram Association]

| Name         | Role                   |
|--------------|------------------------|
| Sharon Barr  | JBA Representative     |
| Maitreyi Roy | JBA Executive Director |

### Urban Engineers, Inc.

| Name            | Role                               | Project Responsibility |
|-----------------|------------------------------------|------------------------|
| Jennifer Waters | Senior Project Manager             | EA Preparation         |
| Angelo Waters   | Environmental Practice Area Leader | EA Review              |

### Cardno -Now Stantec.

| Name             | Role                    | Project Responsibility     |
|------------------|-------------------------|----------------------------|
| Jennifer Wallace | Senior NEPA Coordinator | EA Review and Coordination |
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## APPENDICES

## **APPENDIX A**

### Site Plans

## **APPENDIX B**

### Soils Map

## **APPENDIX C**

Phase I Environmental Site Assessment – Bartram’s Garden (September 2019) &

Phase II Environmental Site Assessment – Bartram’s Garden (December 2019)

## **APPENDIX D**

IPaC Query for the Project area (accessed on July 5, 2022)



## **APPENDIX E**

PNDI Receipt & Agency Correspondence

## **APPENDIX F**

### Cultural Resource Correspondence

## **APPENDIX G**

### Coastal Resources Management Program Consistency

