# ENVIRONMENTAL IMPACT ASSESSMENT

*The Borough of Bernardsville*

**NJDEP 2026 Green Acres Grant Application – Park Development Program**

## 1. DESCRIPTION OF THE PROPOSED ACTION

### a) Briefly describe the total development project:

The proposed project includes park development improvements at Michael J. Nervine Memorial Park located at 166 Mine Brook Road, in the Borough of Bernardsville, Somerset County, NJ. These improvements include expanding the existing pedestrian walking path, installation of benches, educational signs and trail markers, creation of various fishing access points, riparian forest and meadow plantings, restoring the Mine Brook, including installation of grade control structures and enhanced pool and riffle sequences. The project also involves modifications to Michael J. Nervine Park as part of the NJDEP Dam Safety regulatory requirement to remove the Memorial Park Pond Dam.

Stream restoration of the Mine Brook involves functional uplift by improving floodplain connectivity and enhanced riparian vegetation. Lateral stability is achieved by stabilizing the restored reach post dam removal. In addition, areas of bank instability are proposed to be stabilized through regrading streambanks. The affected streambanks will be stabilized and vegetated using USDA NRCS bioengineering methods. The use of boulders and cobbles will provide bed and bank protection and geomorphic uplift. Riparian vegetation will be improved through a robust planting plan to improve the vegetative cover along the stream banks on both banks. The habitat will also be improved by providing pools on stable natural channel design principles to promote self-maintenance and optimal habitat conditions.

### b) State objectives of the project:

The objective of this project is to restore the ecological integrity and public value of the park following removal of the existing dam and former impoundment. Dam removal will reestablish natural stream flow, sediment transport, and aquatic connectivity, allowing the channel to return to a stable, self-sustaining form. The former pond footprint will be converted to native riparian meadow and forest communities through grading, soil preparation, and installation of regionally appropriate herbaceous and woody species. These plant communities will stabilize soils, improve water quality, enhance floodplain function, and provide habitat for birds, pollinators, and other wildlife. Within the restored channel, constructed riffle and pool sequences will improve hydraulic diversity, enhance dissolved oxygen, and create high-quality habitat for resident and migratory fish species.

A complementary objective is to enhance safe and sustainable public access while supporting long-term stewardship and education. A looped walking trail will be constructed to guide visitors through the restored meadow and forest areas, minimizing disturbance to sensitive habitats while improving connectivity within the park. Strategically placed park benches will provide passive recreation opportunities, and educational signage will interpret the benefits of dam removal, stream restoration, riparian ecology, and habitat enhancement. Designated fishing access points will be incorporated along the restored stream to encourage recreational use without degrading bank stability. Together, these improvements will transform the site from a degraded impoundment into a resilient, ecologically functional landscape that supports recreation, education, and community engagement.

## 2. DESCRIPTION OF THE ENVIRONMENT

### a) Vegetation:

The New Jersey Department of Environmental Protection (NJDEP) Division of Fish and Wildlife has the project area located within the “Skylands Landscape” region. The site is part of a contiguous Riparian Corridor patch with an acreage of 353. The project area’s Land Use data from 2020 shows most of the urban land, with water and forest as the secondaries. The park is currently dominated by lawn, with scattered trees on the property. With increased shade, the water temperature will be reduced, and the water quality improved. The paths that will remain in the park will have fewer goose droppings.

### b) Wildlife:

The project area is located within the Highlands Planning Area, and is home to a list of species below:

- Indiana Myotis
- Little Brown Myotis
- Tricolored Bat
- Big Brown Bat
- Great Blue Heron

Right now, the dam creates slow, shallow water that stays calm most of the year. While this might seem peaceful, these conditions are actually ideal for Canada geese. Geese prefer still water with open shorelines because it gives them easy access to food, clear sightlines to watch for predators, and safe places to gather in large numbers. Unfortunately, when geese dominate an area, many people choose to avoid the park altogether. Without the dam, the water would flow more naturally, becoming deeper in some places and faster in others. Moving water is much less attractive to geese, which generally avoid areas where currents make it harder to rest, feed, and gather in large flocks. As a result, goose numbers are expected to decline naturally—without the need for hazing, fencing, or other ongoing control measures.

### c) Geology, topography, and soils:

The site is comprised of the soil type HcuAt - Hatboro-Codorus complex, 0 to 3 percent slopes, frequently flooded. This soil type Is associated with frequent ponding and flooding, with a high capacity to transmit water.

### d) Water resources/hydrology:

The project area sits within Watershed Management Area 08 – North and South Branch Raritan, and is cut by the Mine Brook stream and Memorial Park Pond. Mine Brook flows in a southwesterly direction through the subject property bordered by the Bernardsville Fire Department to the northeast at the upstream end and Old Quarry Road located approximately 800 feet downstream of the project boundary. The property is a park owned by the Borough of Bernardsville and is adjacent to the Borough municipal building and police department.

Mine Brook drains into the North Branch of the Raritan River more than four miles downstream of the subject property. According to the New Jersey Surface Water Quality Standards (N.J.A.C. 7:9B), the Mine Brook is designated as FW2-NT (Freshwater 2 Nontrout). The Memorial Park Pond is approximately 1.46 acres in size and is impounded by the 13 feet high Memorial Park Pond Dam.

### e) Historic/archeological resources:

The former mill and now municipal building adjacent to the park is listed in the NJDEP Lucy Online Viewer and listed as a historic property.

The project site has served as a public park from approximately 1917; after Lindabury landscape the site extensively, clear cutting older trees are replacing them with younger trees and shrubbery. The Memorial Park Pond Dam was built in 1977, after the previous dam structure was damaged by Hurricane Doria in 1971. The municipal building next to the dam was acquired by the Borough in 1932. The conversion of the property from the historic Bunn Mill industrial complex to the office space it is today took 26 years. In 1988, an addition was added to the building, and in 1992, a new sewer plant was completed to allow the historic structure to accommodate heavier usage and modern machinery.

### f) Transportation/access to site:

The site boundary is on Mine Brook Road, also known as US Route 202, and there is a parking lot on site. Parking spaces are used by borough employees with some set out for visitors and park attendees.

### g) Adjacent land uses/description of the surrounding neighborhood:

The surrounding neighborhood is mostly residential, except for the large estate of the Meadowbrook Glitter Factory, just downstream of Quarry Road.

## 3. ENVIRONMENTAL IMPACT ANALYSIS OF PROPOSED ACTION

### a) Discuss all affected resources and the significance of each impact:

The proposed features will assist in improving the ecosystem at the site and for the area surrounding the site. The increase in vegetation planting through the riparian meadow plantings and riparian meadow creation will enhance the habitat for the species that call the Michael J. Nervine Memorial Park home.

No trees are proposed for removal, and a riparian planting zone is proposed, which will increase and improve the ecosystem at the site. The pond in the center of the site is proposed to be re-graded and formed into a smaller stream channel and enlarged riparian zone. This will allow fish and other aquatic species to travel freely through the stream channel.

### b) Discuss short-term and long-term project impacts:

The proposed park improvements will create permanent disturbance to state open waters, but the long-term benefits of these actions will outweigh the disturbance and create long-lasting ecosystem improvements. The project will expand habitat for the large number of species of state concern present on the site. The proposed project will not require intensive maintenance, so future large-scale future disturbance will not be necessary.

Sediment behind dams is both a maintenance and water quality problem. As sediment accumulates behind the dam, it reduces the depth of the water. Not only does this create an unsightly pond for park users, but it also reduces water depths making it optimal for Canada geese, but it also results in increased water temperature.

Sediment also reduces habitat for native fish and aquatic organisms and increases the risk of Harmful Algal Blooms (HABs) which are toxic to humans and pets. The water requires use of aerators now to control algae growth and eliminate odors, however, neither will exist with the free-flowing river after the dam is removed.

## c) Discuss anticipated increase in recreation and overall use of site over time:

The improvements of the park take public opinion into account, to ensure the continued and expanded recreational use of the park. The replaced bridges and new walking path surrounding the park will result in a safer and more pleasant experience at the park, especially through adding new activities, such as fishing.

## d) Identify adjacent environmental features that may be affected by the proposal:

All adjacent environmental features, such as the Mine Brook and adjacent forest, will be affected in positive ways from this proposed work. Riparian vegetation will be improved through a robust planting plan to improve the vegetative cover along the stream banks on both banks. The habitat will also be improved by providing pools on stable natural channel design principles to promote self-maintenance and optimal habitat conditions.

## e) List any permits required for project, and brief status:

A list of all required permits for the project and their status can be seen below:

| Permit Type | Organization | Status |
|---|---|---|
| Dam Removal Permit | NJDEP Dam Safety | Approved on June 25, 2025 |
| Freshwater Wetlands GP 18 – Dam Construction | NJDEP Land Use | Awaiting approval, anticipated approval by March 1, 2026 |
| Soil Erosion and Sediment Control Plan Certification | Somerset Union Soil Conservation District | Not yet submitted, anticipated Spring 2026 |

## f) National Heritage Data Request Forms:

According to the Natural Heritage Database (NHD), provided by the Office of Natural Lands Management (ONLM) via the NJGIN Open Data website, the project area contains no rare plant species, natural heritage priority sites on the property, vernal pool habitats, rare wildlife species or habitat, or other animal species on the project site based on additional species that are tracked by Endangered and Nongame Species Program.

However, the NHD search came back with one positive result for rare wildlife species or wildlife habitat on the project site which are listed below:

| Class | Species | Feature Type | State Protection Status |
|---|---|---|---|
| Aves | Great Blue Heron | Foraging | Special Concern |
| Mammalia | Indiana Bat | Active Season Sighting, Maternity Colony, Roost Site | State Endangered |
| | Northern Myotis | Active Season Sighting | State Endangered |

These species will be protected during the construction phase, by follow all NJDEP regulations and State protection laws for these types and protection status species.

### g) Discuss if/how the project may be impacted by sea level rise and any related design considerations:

The project site will not be impacted by sea level rise, therefore there are no related design considerations.

## 4. ALTERNATIVES TO THE PROPOSED ACTION

### a) Identify alternate sites:

No alternate sites have been identified for this project as the project goal is to restore the ecological integrity and public value of the Michael J. Nervine Memorial Park following removal of the existing dam and former impoundment.

### b) Discuss alternate levels and types of development:

The alternative for the site is a no action alternative. Not improving the site will result in the continuation of geese dominating the space and will allow for the water to remain the quality it is. The park will still have mostly lawn covering and will lack vegetation. The dams would remain in place, continuing the buildup of sediment which threatens the habitat for native fish and aquatic organisms. This build up increases the risk of Harmful Algal Blooms (HABs) which are toxic to humans and pets. The water will continue to require the use of aerators to control algae growth and eliminate odors.

### c) Compare the environmental impacts of each alternative:

Because the pond behind the dam is currently extremely full of sediment, the area is at risk during extreme weather events. If the dam were to fail or partially fail, the accumulated sediment would flow downstream reducing capacity at downstream roadway crossings including Quarry Road. It would also cause increased flooding because the sediment will drop out and reduce carrying capacity of the river downstream. The free-flowing river allows water to move through the park more naturally and reduces the chance of sudden surges that exist when a dam is in place.

If the project does continue, then the geese population and the risks that they provide will be limited. Which will in turn boost the water quality and remove the risk of HABs at the site. The replaced bridges and renewed walking path surrounding the park will result in a more usable park for the community, as well as increasing activity through the fishing access locations.

## 5. MITIGATING MEASURES

In order to mitigate impacts at the site, all Somerset Union Soil Conservation District soil erosion and sediment control measures will be followed. The construction will not happen during the weekends, or after dark, limiting the chances of any issues arising. The park will be closed to the general public during construction and will follow all construction safety measures.

## 6. AUTHOR AND QUALIFICATIONS (IN BRIEF)

- **Samantha Comandini, Senior Environmental Scientist**

  Ms. Comandini is a water resource engineering consultant with Rippled Waters Engineering, LLC. She graduated with a degree in Environmental Studies in 2020 and joined later that same year. Since joining RWE, she has been an instrumental part of RWE's work efforts by assisting in various restoration design projects. She has been actively involved in regulatory compliance and has vast knowledge of NJDEP permitting and regulation requirements.

# APPENDIX A – NATURAL HERITAGE DATABASE SEARCH RESULTS

Department of Environmental Protection
**Office of Natural Lands Management**
Mail Code 501-04, P.O. Box 420
Trenton, New Jersey 08625-0420
Tel. (609) 984-1339; Fax. (609) 984-1427

# *Invoice*

| Date | Invoice # |
|---|---|
| 5/16/2023 | 27665 |

Bill to:
Rippled Waters Engineering, LLC
420 Woolf Road
Milford, NJ 08848

**Make check payable to:**
*DEP - Office of Natural Lands Management*

**Include this invoice with payment & send to:**
*NJDEP Office of Natural Lands Management*
*Mail Code 501-04, P.O. Box 420*
*Trenton, New Jersey 08625-0420*

| Quantity (hrs.) | Description | Rate (per hr.) | Amount |
|---|---|---|---|
| 1 | Natural Heritage Database search for locational information of rare species and ecological communities.<br>Project: 23-4007465-27665 | $ 70.00 | $ 70.00 |
| Kelly Klein<br>Project Name: Mine Brook Dam Removal | | **Total** | $ 70.00 |

State of New Jersey
MAIL CODE 501-04
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE PARKS, FORESTS & HISTORIC SITES
OFFICE OF NATURAL LANDS MANAGEMENT
501 East State Street
P.O. Box 420, Mail Code 501-04
Trenton, NJ 08625-0420
Tel. (609) 984-1339 • Fax (609) 984-0427

PHILIP D. MURPHY
*Governor*

SHEILA Y. OLIVER
*Lt. Governor*

SHAWN M. LATOURETTE
*Commissioner*

May 16, 2023

Kelly Klein
Rippled Waters Engineering, LLC
420 Woolf Road
Milford, NJ 08848

Re: Mine Brook Dam Removal
Block(s) - 97, Lot(s) - 1
Bernardsville Borough, Somerset County

Dear Kelly Klein:

Thank you for your data request regarding rare species information for the above referenced project site.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.3) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the map(s) submitted with the Natural Heritage Data Request Form into our GIS. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for occurrences of rare wildlife species or wildlife habitat in the immediate vicinity (within ¼ mile) of the referenced site. Additionally, the Natural Heritage Database was checked for occurrences of rare plant species or ecological communities within ¼ mile of the site. Please refer to Table 2 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented within the immediate vicinity of the site. Detailed reports are provided for all categories coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1 and 2 (attached) to determine if any priority sites are located on or in the immediate vicinity of the site.

A list of rare plant species and ecological communities that have been documented from the county (or counties), referenced above, can be downloaded from https://nj.gov/dep/parksandforests/natural/heritage/database.html. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from https://nj.gov/dep/parksandforests/natural/docs/nhpcodes_2010.pdf.

Beginning May 9, 2017, the Natural Heritage Program reports for wildlife species will utilize data from Landscape Project Version 3.3. If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive web application at the following URL,

https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=0e6a44098c524ed99bf739953cb4d4c7, or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

For additional information regarding any Federally listed plant or animal species, please contact the U.S. Fish & Wildlife Service, New Jersey Field Office at http://www.fws.gov/northeast/njfieldoffice/endangered/consultation.html.

Information supplied by the Natural Heritage Program summarizes existing data known to the program at the time of the request regarding the biological elements (species and/or ecological communities) or their locations. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,

Robert J. Cartica
Administrator

c: NHP File No. 23-4007465-27665

*Table 1: On Site Data Request Search Results (6 Possible Reports)*

| Report Name | Included | Number of Pages |
|---|---|---|
| 1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database | No | 0 pages included |
| 2. Natural Heritage Priority Sites On Site | No | 0 pages included |
| 3. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches | Yes | 1 page(s) included |
| 4. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.3 | No | 0 pages included |
| 5. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File | No | 0 pages included |
| 6. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program | No | 0 pages included |

## Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches

| Class | Common Name | Scientific Name | Feature Type | Rank | Federal Protection Status | State Protection Status | Grank | Srank |
|---|---|---|---|---|---|---|---|---|
| ***Aves*** | | | | | | | | |
| | Great Blue Heron | Ardea herodias | Foraging | 2 | NA | Special Concern | G5 | S3B,S4N |
| ***Mammalia*** | | | | | | | | |
| | Indiana Bat | Myotis sodalis | Active Season Sighting | 5 | Federally Listed Endangered | State Endangered | G2 | S1 |
| | Indiana Bat | Myotis sodalis | Maternity Colony | 5 | Federally Listed Endangered | State Endangered | G2 | S1 |
| | Indiana Bat | Myotis sodalis | Roost Site | 5 | Federally Listed Endangered | State Endangered | G2 | S1 |
| | Northern Myotis | Myotis septentrionalis | Active Season Sighting | 5 | Federally Listed Endangered | State Endangered | G1G2 | S1 |

*Table 2: Vicinity Data Request Search Results (6 possible reports)*

| Report Name | Included | Number of Pages |
|---|---|---|
| 1. Immediate Vicinity of the Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database | No | 0 pages included |
| 2. Natural Heritage Priority Sites within the Immediate Vicinity | No | 0 pages included |
| 3. Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches | Yes | 2 page(s) included |
| 4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.3 | Yes | 1 page(s) included |
| 5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File | No | 0 pages included |
| 6. Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program | No | 0 pages included |

## Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches

| Class | Common Name | Scientific Name | Feature Type | Rank | Federal Protection Status | State Protection Status | Grank | Srank |
|---|---|---|---|---|---|---|---|---|
| ***Aves*** | | | | | | | | |
| | Bald Eagle | Haliaeetus leucocephalus | Nest | 4 | NA | State Endangered | G5 | S1B,S2N |
| | Barred Owl | Strix varia | Non-breeding Sighting | 3 | NA | State Threatened | G5 | S2B,S2N |
| | Brown Thrasher | Toxostoma rufum | Breeding Sighting | 2 | NA | Special Concern | G5 | S3B,S4N |
| | Cooper's Hawk | Accipiter cooperii | Nest | 2 | NA | Special Concern | G5 | S3B,S4N |
| | Great Blue Heron | Ardea herodias | Foraging | 2 | NA | Special Concern | G5 | S3B,S4N |
| | Red-shouldered Hawk | Buteo lineatus | Nest | 4 | NA | State Endangered | G5 | S1B,S3N |
| | Veery | Catharus fuscescens | Breeding Sighting | 2 | NA | Special Concern | G5 | S3B,S4N |
| | Wood Thrush | Hylocichla mustelina | Breeding Sighting | 2 | NA | Special Concern | G4 | S3B,S4N |
| ***Mammalia*** | | | | | | | | |
| | Bobcat | Lynx rufus | On Road | 4 | NA | State Endangered | G5 | S2 |
| | Indiana Bat | Myotis sodalis | Active Season Sighting | 5 | Federally Listed Endangered | State Endangered | G2 | S1 |
| | Indiana Bat | Myotis sodalis | Maternity Colony | 5 | Federally Listed Endangered | State Endangered | G2 | S1 |
| | Indiana Bat | Myotis sodalis | Roost Site | 5 | Federally Listed Endangered | State Endangered | G2 | S1 |

## Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches

| Class | Common Name | Scientific Name | Feature Type | Rank | Federal Protection Status | State Protection Status | Grank | Srank |
|---|---|---|---|---|---|---|---|---|
| | Northern Myotis | Myotis septentrionalis | Active Season Sighting | 5 | Federally Listed Endangered | State Endangered | G1G2 | S1 |
| ***Reptilia*** | | | | | | | | |
| | Wood Turtle | Glyptemys insculpta | Occupied Habitat | 3 | NA | State Threatened | G3 | S2 |

# Vernal Pool Habitat
# In the Immediate Vicinity of
# Project Site Based on Search of
# Landscape Project 3.3

| Vernal Pool Habitat Type | Vernal Pool Habitat ID |
|---|---|
| Potential vernal habitat area | 1958 |

Total number of records: 1



Tuesday, May 16, 2023

NHP File No.: 23-4007465-27665