



# WATERGATE WETLANDS RESTORATION PROJECT



## Environmental Assessment

June 2020

Estimated Total Agency Costs Associated with  
Developing and Producing This Environmental Assessment:  
\$49,977

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**United States Department of the Interior  
National Park Service  
Delaware Water Gap National Recreation Area**

**Watergate Wetlands Restoration Project  
Environmental Assessment  
June 2020**

The National Park Service (NPS) proposes to restore wetlands and the natural function of a stream and its floodplain by reversing man-made changes in and near the Watergate Recreation Site in Warren County, New Jersey. The project would meet an NPS requirement to restore no less than 33 “credit acres” to compensate for the temporary and permanent impacts to wetlands, floodplains, and ecosystem function caused by the construction, operation, and maintenance of a high-voltage transmission line and its 200-foot right-of-way within the Delaware Water Gap National Recreation Area.

A credit acre is a measure of uplift to an ecosystem that results from restoration work. A credit acre includes not just the restoration of wetlands themselves but also the restoration of other parts of the ecosystem that support wetlands—in this case, the restoration of a stream, its floodplain, and native vegetation. To achieve the required credit acres, this proposal includes the conversion of the mowed lawn, earthen dams, and shallow ponds at the Watergate Recreation Site into 20 acres of wetlands. Approximately 800 linear feet of Van Campens Brook would be restored, and the stream would be reconnected to its floodplain through the removal of approximately 4000 linear feet of an old road, restoring 9.4 credit acres. 5.8 credit acres of invasive plants would be treated, and native vegetation restored in their place. Together, these actions add up to 35.2 credit acres and would restore not only wetlands, but also the stream and the natural hydrology of the area, and thus would provide an overall ecological uplift within the Van Campens Watershed.

In compliance with the National Environmental Policy Act (NEPA) of 1969, the National Park Service prepared this environmental assessment to evaluate the proposed action to restore wetlands, a stream, and its floodplain; to describe the environment that would be affected by the alternatives; and to assess the environmental consequences of implementing the alternatives. This environmental assessment examines and compares the consequences of not taking action (the continuation of the current condition and management of the site) with the consequences of taking action as described above. The proposed action may have temporary adverse impacts to natural resources, but they would be fully mitigated through use of best management practices.

The proposed action would have adverse impacts to cultural resources. As such, the National Park Service is coordinating with the New Jersey Historic Preservation Office to develop a memorandum of agreement (MOA) which outlines measures to minimize and mitigate adverse effects on historic properties in accordance with the implementing regulations for Section 106 of the National Historic Preservation Act. The draft memorandum of agreement can be found in Appendix C.

This environmental assessment has been prepared in accordance with the National Environmental Policy Act; the regulations of the Council on Environmental Quality (40 Code of Federal Regulations 1500–1508); and NPS Director’s Order 12: Conservation Planning, Environmental Impact Analysis, and Decisionmaking (NPS 2011) and accompanying NPS NEPA handbook (NPS 2015).

**Note to Reviewers and Respondents:**

Participation by the public is important to the success of this project. The NPS is seeking public review and comments on the proposal, including any changes or alternatives that would help the NPS better meet the required credit acres of wetlands restoration, and any changes or improvements needed to the analysis in the EA. The NPS is simultaneously seeking public review and comments on the MOA.

If you wish to comment in writing on the EA or MOA, you may mail comments within 30 days to the address below or you may post them electronically at <https://parkplanning.nps.gov/WatergateWetlandsRestoration>.

Superintendent  
Delaware Water Gap National Recreation Area  
Attn: Watergate Wetlands Restoration Project EA Comments  
1978 River Road  
Bushkill, PA 18353

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask in your comment to withhold your personal identifying information from public review, the National Park Service cannot guarantee that it will be able to do so.

Comments sent via postal mail must be postmarked on or before July 1, 2020 to be considered. Comments provided electronically must be submitted by 11:59 p.m. on July 1, 2020 to be considered.

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# 1. PURPOSE OF AND NEED FOR THE PROJECT

## 1.1 PURPOSE AND NEED

The purpose of the Watergate Wetlands Restoration Project is to reverse man-made changes in and near the Watergate Recreation Site in Warren County, New Jersey, in order to restore at least 33 credit acres of wetlands, as well as the natural function of a stream and its floodplain.

The need for the proposed action is to compensate for the 9.3 acres of temporary and permanent impacts to wetlands, floodplains, and ecosystem function that were caused by the construction, operation, and maintenance of a high-voltage transmission line and its 200-foot right-of-way within the Delaware Water Gap National Recreation Area.

## 1.2 PROJECT BACKGROUND

The Susquehanna-Roseland Transmission Line, a high-voltage power line, bisects 4.5 miles of the Delaware Water Gap National Recreation Area ("the park"). The transmission line was first constructed in 1929 and has been maintained and upgraded several times since then. The companies that own the line—Public Service Electric and Gas and PPL Electric Utilities—proposed upgrading it to a significantly larger line in 2008. The upgrade required widening the right-of-way onto NPS land, as well as constructing new access roads and installing new transmission towers. The National Park Service (NPS) evaluated the environmental effects of the proposed transmission line upgrade in the *Susquehanna to Roseland 500-kV Transmission Line Right-of-Way and Special Use Permit Final Environmental Impact Statement* ("S-R Line EIS;" NPS 2012b).

As part of the evaluation, and to meet the requirements of Executive Order 11990, "Protection of Wetlands" and Executive Order 11988, "Floodplain Management," the NPS evaluated the effects of construction, operation, and maintenance of the transmission line through a *Statement of Findings* ("SOF;" NPS 2012c) which found that 9.3 acres of wetlands and floodplains would be temporarily or permanently impacted.

In order to comply with Executive Order 11990, NPS policy<sup>1</sup> requires that any destruction or degradation of wetlands on NPS properties must be directly compensated for. Due to the complexity of wetlands and

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<sup>1</sup> Director's Order 77-1, *Wetland Protection*

floodplains, it is difficult to replace destroyed or degraded wetlands on a 1:1 ratio because a restored wetland will not function as well as an undisturbed wetland. Therefore, the NPS determined in the SOF that no less than 33 “credit” acres of wetlands would need to be restored to compensate for the 9.3 acres that would be affected by the transmission line upgrade. Credit acres can include not just wetlands themselves, but related activities such as stream and floodplain restoration which contribute to improving the natural, ecological function of the wetlands. Ratios used in credit acre calculations are as follows:

Table 1: Calculation of Credit Acres Required for Compensatory Mitigation, per the Wetlands SOF

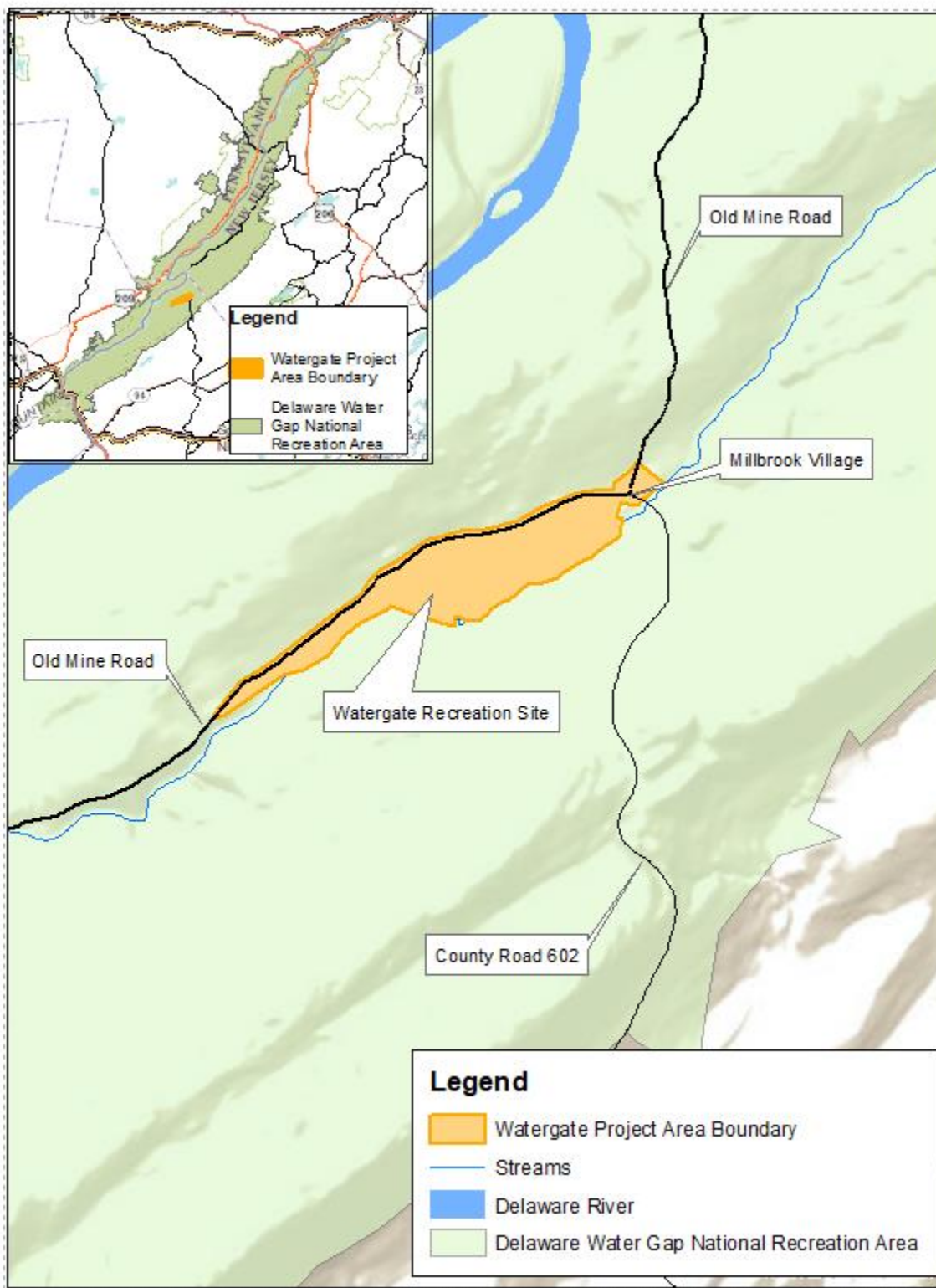
| Treatment Type           | Ratio (Treatment Area : Credit Acres) |
|--------------------------|---------------------------------------|
| Wetlands Restoration     | 1 acre : 1 acre                       |
| Stream Restoration       | 500 linear feet : 1 acre              |
| Invasive Plant Treatment | 10 acres : 1 acres                    |

In 2012, the NPS authorized the construction, operation, and maintenance of the upgraded transmission line with the requirement that the environmental effects (including effects to the natural, cultural, and human environment) be compensated for. As part of this compensation, the companies were required to provide funding to the NPS for the evaluation, planning, design, and construction of a project that would restore no less than 33 credit acres of wetlands.

Upon completion of the transmission project, the NPS evaluated nine candidate sites within the park to determine which ones would best meet the compensatory mitigation goal of achieving at least 33 credit acres of wetlands restoration. The NPS found that the Watergate Recreation Site and its surroundings (“project area”) offered the greatest potential in terms of the acreage of wetlands that could be restored, greatest potential for “ecological uplift” that would result from stream and floodplain restoration. The Watergate project area is highly modified by man and functions poorly in an ecological sense. Because of this, the other sites were dismissed from further evaluation because they were too small to meet acreage requirements, and/or had potentially significant cultural or natural resources that could not have been adequately protected during construction activities.

## 1.3 HISTORY OF THE SITE AND EXISTING CONDITIONS

The project area is located within the Van Campens Brook watershed in Warren County, New Jersey (Figure 1). The bulk of the work associated with the proposed project would occur within the Watergate Recreation Site, which features a large mowed lawn and rustic picnic area and several ponds (Figure 2). The natural conditions and overall hydrology of the project site have been significantly altered by the draining of wetlands; the creation of numerous man-made dams, ponds, and levees; and the construction of a road next to the stream. See Appendix B: Photos for photos of existing conditions.

**Figure 1: Project Location Map**

People of European descent settled the area in the early 1800s, and the land was used primarily for agriculture. Historic maps and photos show farm fields that would have been used to produce grain and hay, as well as pasturing livestock. Houses and farm buildings were constructed within the project area and were demolished in the 1970s when the land transferred into ownership by the U.S. government.

A one-room schoolhouse (Millbrook School) and barn (Garis Barn) are the only remaining historic buildings within the project area. Millbrook School and the Garis Barn are no longer accessible to most park visitors because the road leading to it, the Columbia-Walpack Turnpike, was heavily damaged by several flood events between 2004 and 2011. The Garis Barn was also damaged by those flood events.

The Columbia-Walpack Turnpike is a dirt and gravel road that opened in 1932. It bisects the project area and used to be the primary road for local residents traveling between Old Mine Road to the south of the project area, and Millbrook Village to the north of the project area. It was re-routed around Watergate in the 1950s with the construction of the ponds, and again in the 1970s. It was removed from driving maps in 1967. A series of flood events from 2004-2011 heavily damaged the road just south of Millbrook Village.

Old Mine Road was reconstructed and relocated in the 1930s to its current position on the west side of the project area. Old Mine Road is now the primary travel route through the area. A telephone line was routed through the project area in the early 1900s along the Columbia-Walpack Turnpike, and later an electric distribution line was co-located with it in on the same wooden poles.

In order to create more usable farmland, the inhabitants installed dikes and ditches to drain the wetlands that used to be present onsite. Those wetlands were in the areas at the Watergate Recreation Site that are now mowed lawn, picnic area, and ponds. Some low- to moderate-quality wetlands still exist onsite (Appendix A, Figure 1) which may have re-established after the cessation of farming in the area.

Between 1870 and 1930, Van Campens Brook was relocated from its natural position through the middle of what is now the Watergate Recreation Site to its current position to the south and east of Watergate. This is evident on maps and aerial photos of the project area from ~1864 to present (Appendix A, Figures 2-5). The stream has multiple channels which shift due to storm events and beaver activity. At least four recorded major storm events (such as hurricanes) between 2004 and 2011 have caused Van Campens Brook to experience flooding at a magnitude that is normally expected only once every 100 years. During these floods, the stream has breached dams, changed channels, and destroyed roads and bridges within and adjacent to the project area.

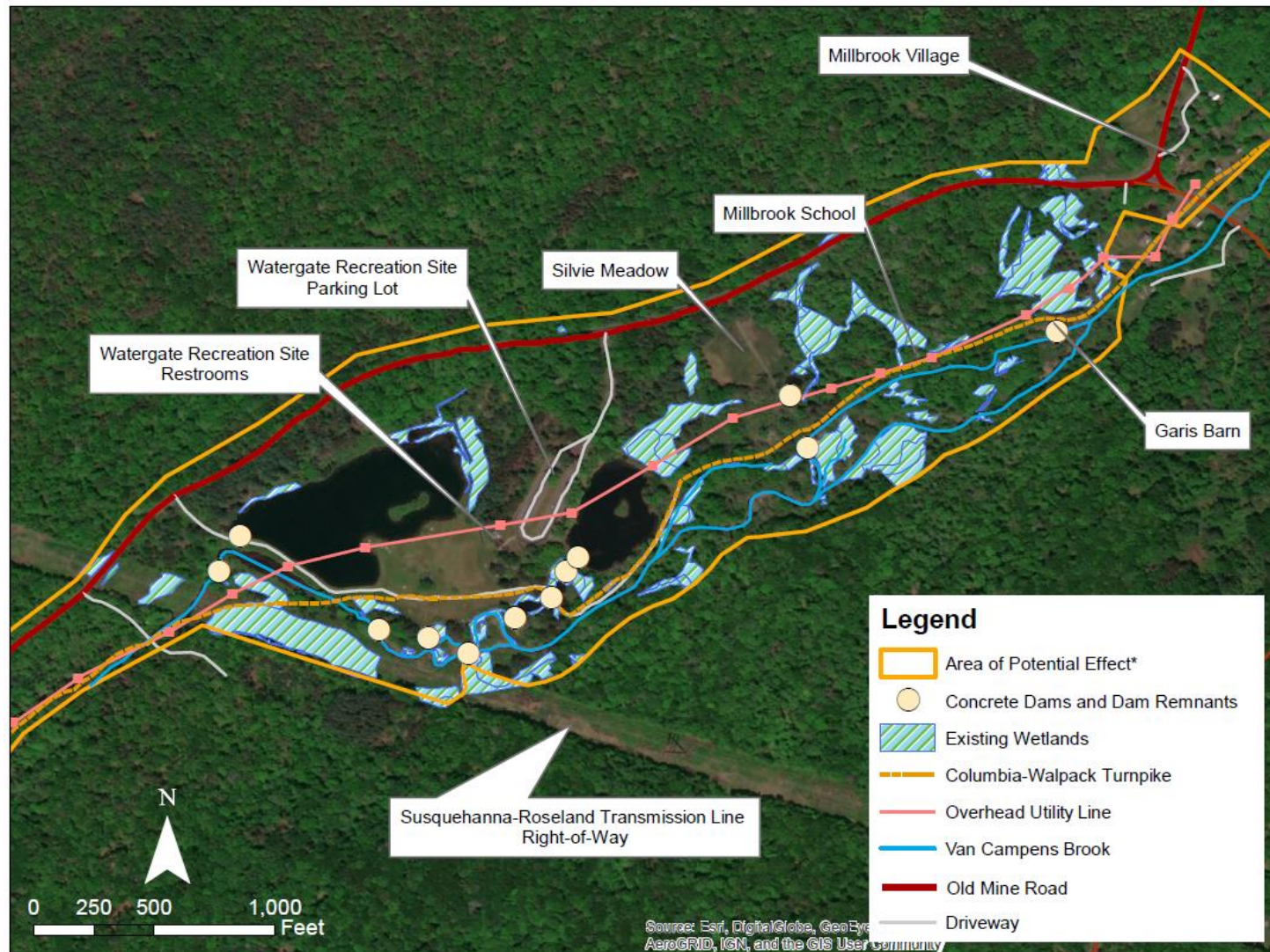
From the 1930s to the 1960s, much of the use of the project site transitioned from farming to second (vacation) homes and properties. It was at this time that the owner of the largest parcel of land within the project area conducted substantial excavation and grading to create dams and ponds (Appendix A, Figure 4). The dams and ponds are detrimental to the ecological function of the project area because they are an unnatural warm-water environment in the summer, host invasive plant and animal species, and create water temperature and quality issues downstream in Van Campens Brook.

The Columbia-Walpack Turnpike is adjacent to Van Campens Brook throughout most of the project area. The road influences the natural function of the stream and its floodplain in several ways. The road acts as a levee— it is built up above the grade of the stream and floodplain, but because the road is right next to the stream it prevents the stream from going into its floodplain during flood events. The road itself also reinforces the streambank, which prevents the stream from meandering and instead focuses the flow straight downstream. This increases the velocity and energy of the water during flood events, leading to damage downstream from scouring and erosion.

Invasive plant species are prolific within the project area and outcompete native plant species, including in the ponds, the forest, and the existing wetlands. The presence of the invasive plants creates a decreased quality of natural habitat for native wildlife, as well as decreases the natural function of the forests and wetlands.

The Watergate Recreation Site was created by the NPS in the 1980s. It capitalized on the ponds and upland area created by the previous landowner to form a picnic area and open-water fishing opportunities. Over the last decade, on average the site receives only 1-6% of the visitors of the six comparable recreation sites within the park. The recreation quality at the site is low—the picnic area is mostly unshaded, geese frequently inhabit the lawn area, the open-water fishing is poor quality due to the warm, shallow ponds, and the 200'-tall towers and wires of the Susquehanna-Roseland Transmission Line compromise the vista. In addition to those recreational opportunities, the Van Campens Glen Trail, which was co-located on the Columbia-Walpack Turnpike, was heavily damaged during flood events from 2004-2011 and is impassable by vehicles and to most park visitors.

Figure 2: Current conditions and existing features at the project site



## 2. ALTERNATIVES

The alternatives evaluated in this EA were developed as a result of internal scoping, a focused discussion with park stakeholders, and interagency consultation. The NPS carried forward two alternatives for detailed evaluation: a no-action alternative, which is a continuation of current management conditions, and an action alternative which would satisfy the purpose and need for the project. See Section 5.2 for a glossary of terms.

### 2.1 NO-ACTION

The no-action alternative would be a continuation of the existing management conditions, visitor access, and visitor use at the Watergate Recreation Site and surrounding project area. Under the no-action alternative, the wetland mitigation obligations detailed in the Wetland and Floodplain SOF for the Susquehanna to Roseland Transmission Line Project would not be satisfied at this location. Instead, NPS would need to analyze other locations within the park to meet the required mitigation needs.

NPS would continue to mow and maintain the lawn for picnicking and access to warm-water fishing in the ponds. NPS would continue to monitor the condition of the earthen dam on Pond 10, making repairs when necessary to prevent its failure. Invasive plants would continue to proliferate throughout most of the project area, although invasive plants near buildings and paved surfaces would continue to be treated in accordance with the park's integrated pest management protocols (NPS 2015c).

The existing low- and medium-quality wetlands onsite would persist, but without management intervention they would become of even lesser quality as invasive plants and animals become more established.

Flood events would continue to destroy the dams and dam remnants along Van Campens Brook. The Columbia-Walpack Turnpike would continue to deteriorate and eventually be destroyed by flood events. The temperature and water quality of Van Campens Brook would continue to degrade due to the input of warm water from the pond outflows. The streambanks would continue to be unstable, leading to erosion, scouring and sedimentation.

Access for visitors and maintenance crews to the Garis Barn and Millbrook Schoolhouse would continue to worsen as the Columbia-Walpack Turnpike degrades into a fully impassable condition. The condition of the buildings would continue to deteriorate, and eventually the Garis Barn would be destroyed by flooding on Van Campens Brook.

The utility line that bisects the project area would remain in place, requiring utility crews to cross the existing wetlands and Van Campens Brook during outages or maintenance. The quarry two miles to the north of the project area would remain in its current dimensions and vegetation would continue to reclaim it.

## 2.1 PROPOSED ACTION (PREFERRED ALTERNATIVE)

In order to achieve the purpose and need of the project, the proposed action (preferred alternative) is described below. The physical actions are described first in this chapter, followed by the timing and sequence of work, and finally best management practices and other measures that would reduce adverse environmental impacts of the project.

### 2.1.1 Actions to Restore at Least 33 Credit Acres of Wetlands

The Wetlands Statement of Findings required compensatory mitigation of at least 33 credit acres. This project would restore 35.2 credit acres. See Table 2, below.

Table 2: Calculation of credit acres under the proposed action

| Treatment Type           | Credit Acre Ratio<br>(Treatment Area :<br>Credit Acres) | Proposed Action    | Credit Acres |
|--------------------------|---------------------------------------------------------|--------------------|--------------|
| Wetland Restoration      | 1 acre : 1 acre                                         | 20 acres           | 20 acres     |
| Stream Restoration       | 500 linear feet : 1 acre                                | 4717.4 linear feet | 9.4 acres    |
| Invasive Plant Treatment | 10 acres : 1 acres                                      | 58.1 acres         | 5.8 acres    |
| <b>Total</b>             |                                                         | <b>35.2 acres</b>  |              |

Actions necessary for the restoration of 20 acres of wetlands would include:

1. Removal of four low dams composed of earth, concrete, and stone at the Watergate Recreation Site.
  - The four ponds behind the dams would be drained ("dewatered") prior to the removal of the dams. Dewatering would be conducted in accordance with state guidelines by lowering the water level by 1 foot per day.
  - Fish would be salvaged prior to draining the ponds (see "Mitigation Measures").

- 
2. Regrading to create wetlands at the Watergate Recreation site.
    - a. Woody brush and the turfgrass lawn would be removed prior to grading work. Few, if any, trees would need to be removed.
    - b. The mowed lawn, dams, and drained pond areas would be regraded using heavy equipment to the proper elevations and contours to support the re-establishment of 20 acres of wetlands. Diversion of surface water to create the wetlands is unnecessary; the wetlands would be supplied by groundwater (springs) that is already present onsite. Wetlands restored include the following types and acreages:<sup>2</sup>
      - i. Forested wetland— 4 acres
      - ii. Scrub-shrub wetland— 4 acres
      - iii. Emergent wetland— 12 acres
    - c. A total of 25 acres of ground disturbance would occur in order to achieve the proper grading and topography to sustain wetlands.
    - d. Topsoil would be stripped and stockpiled for reuse onsite.
    - e. Any excess fill material from the grading work would be trucked away from the site and placed into an unused gravel quarry ("Quarry Site AA") approximately two miles north of the project area. See map, Appendix A, Figure 6. See description of the actions associated with the quarry later in this section under "Actions necessary for construction to occur."
    - f. The wetlands and surrounding graded areas would be revegetated with native seed mixes and native plants. Exposed soil would be stabilized with a covering of straw mulch or erosion control blanket.

Actions necessary for the restoration of 9.4 credit acres of stream include:

1. Removal of portions of the Columbia-Walpack Turnpike.
  - a. 4000 linear feet of the Columbia-Walpack Turnpike would be removed and graded to an elevation and topography that allows Van Campens Brook to function naturally, as well as reconnect with its floodplain.
  - b. Heavy equipment would be used to accomplish the work, and any excess material not needed elsewhere onsite would be hauled to Quarry Site AA.
2. Restoration of Van Campens Brook.
  - a. Use of heavy equipment to remove up to 6 concrete dam remnants from the channel in order to restore natural hydraulic function of the stream.

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<sup>2</sup> The acreages of each type of wetlands may change as the project is constructed depending on nuances with soil and hydrology, but the total would remain at around 20 acres.

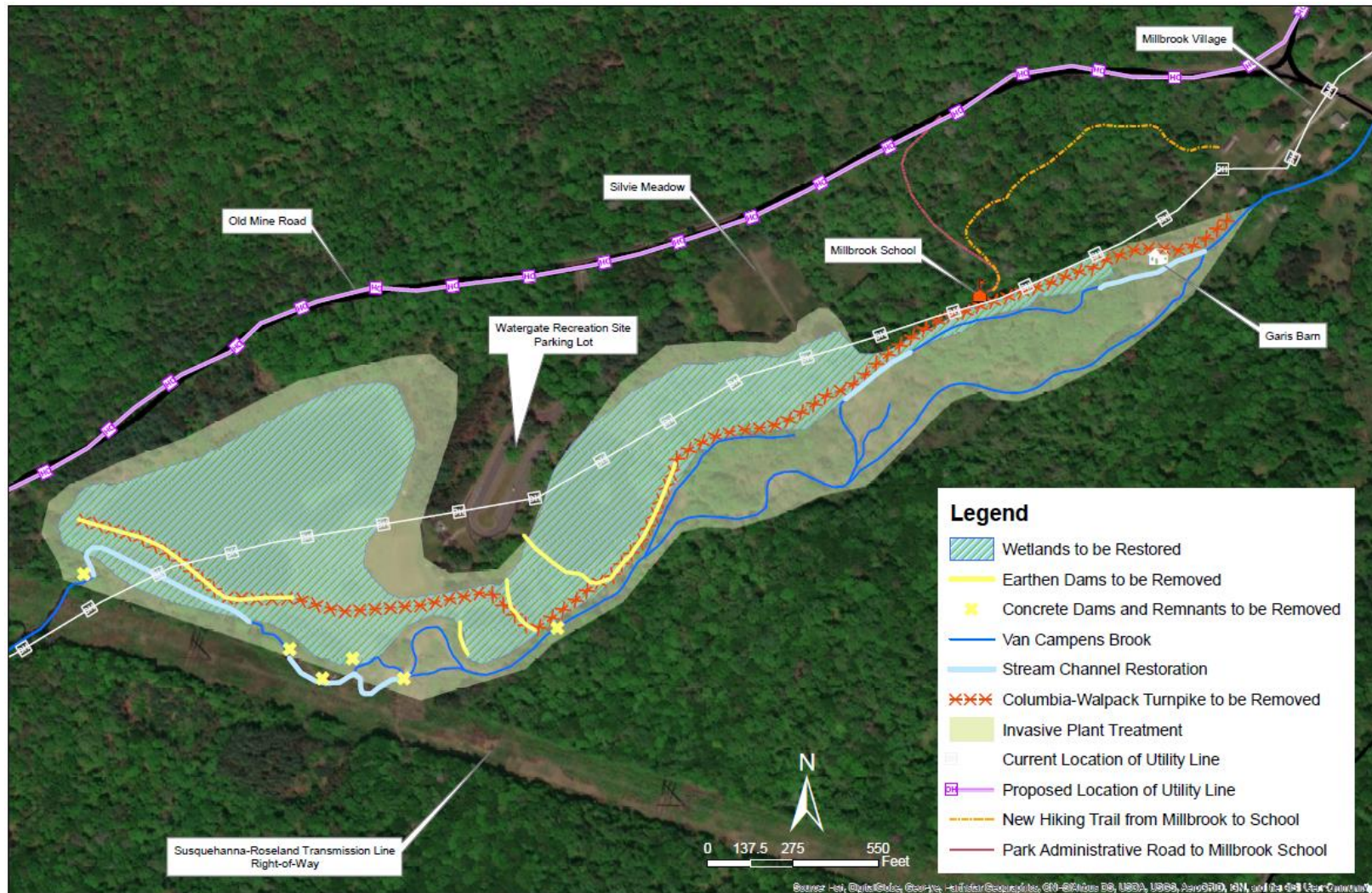
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- b. Armoring of approximately 300 linear feet of stream bank to stabilize the stream channel, protect habitat for aquatic species, and prevent the stream from migrating further into the Susquehanna-Roseland Transmission Line right-of-way. Armoring includes placement of boulders, woody material, live plants, and natural-fiber erosion control blankets to prevent scouring and erosion.
  - c. Re-establishment of approximately 500 linear feet of proper stream channel dimensions (channel footprint and profile) and hydraulics.
    - i. This work would require use of coffer dams and pumps to keep water out of those sections of stream during work each day (“dewatering” the stream). Dams and pumps would not be left in place if work is not actively occurring (such as nighttime). Rather than dewater the entire 500 feet of stream at once, smaller increments (100-foot to 300-foot long sections) would be dewatered as work occurred in those segments.
    - ii. Fish would be relocated prior to dewatering (see “Mitigation Measures”).

Actions necessary to achieve 5.8 credit acres of invasive plant treatment include:

- 1. Treatment of invasive plants
  - a. 58.1 acres of invasive plants within the project area would be treated with herbicides (foliar and cut-stump) and possibly mechanical treatment (cutting and brush-mowing) in accordance with the park’s integrated pest management protocols (NPS 2015c). Target species for treatment include Japanese knotweed, Japanese barberry, multiflora rose, autumn olive, bush honeysuckle, Asiatic bittersweet, burning bush, and tree of heaven. Herbicides would be appropriate to the species being treated and, when used near the stream, ponds, or wetlands, authorized for use in or near water.
  - b. Plants along the streambank would be treated with herbicide pre-construction. The mowed lawn, while not included in this calculation, may also be treated with herbicide pre-construction. The remaining acreage is in the upland, outside of the area that would be graded, and can be treated before, during, or soon after construction. Treatment with herbicide must occur during the growing season and is most effective in July or August for most plant species.
  - c. Re-treatment of some areas within 10 years may be necessary if re-colonization occurs.
  - d. Treatment, post-treatment monitoring, and return treatments would focus on the restored wetlands and streambanks.

Figure 4: Proposed Action



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Actions necessary for construction to occur include:

1. Relocation of a utility line.
  - a. Approximately 8900 linear feet of an overhead electric distribution and communications line that bisects the project area would be relocated to be adjacent to Old Mine Road. This would allow for construction to occur safely, as well as prevent the need for future entries into the restored wetlands for maintenance of the line.
  - b. Existing poles and wires would be removed.
  - c. Some trees, brush, and tree branches would be removed within the new right-of-way to allow for proper clearances for the electric line. Required clearing includes all vegetation within a 15' radius of the electric wire; minor additional clearing may be needed to allow enough room to safely set the poles and string the wire.
  - d. New poles would be installed by drilling using an auger to create a hole 6.5 feet deep and 20 inches in diameter. Poles would be 38.5 feet tall, excluding the 6.5'-portion that is in the ground. Anchors for guy wires, where needed to provide support to the utility line, would be drilled into rock or bedrock.
  - e. Temporary one-lane closures with traffic control would be required during installation work along Old Mine Road. If a temporary full closure is needed (most likely during wire stringing), traffic would be allowed to pass through in intervals. Work along Old Mine Road would take 2-6 weeks to complete, depending on weather, and would likely be performed between February and March.
  - f. The NPS would issue an amended right-of-way to the owners of the line, authorizing its construction, operation, and maintenance at the new location.
2. Placement of excess fill (rock and soil) in Quarry Site AA.
  - a. Quarry Site AA, a former gravel quarry established between 1931 and closed some time prior to its acquisition by the federal government, was evaluated in a report by the NPS' Geological Resources Division (NPS 2012a). Since its closure, trees and brush have reclaimed some of the site. Some, but not all, trees in would need to be cleared to allow equipment to have enough room to access the interior of the former gravel quarry for soil placement.
  - b. The quarry can accommodate approximately 26,000 cubic yards of excess fill. It is estimated that this would be adequate for the purposes of this project, although actual amounts may change once construction is underway.
  - c. The site would be returned to pre-quarry (natural) topography, stabilized with erosion control measures, and revegetated with native plant species.

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Actions Related to Cultural Resources and Visitor Use and Experience include:

1. Removal of some exterior elements of the Garis Barn.
  - a. The lower 6-10' of exterior clapboards would be removed from the first floor of the Garis Barn, which is a contributing resource to the Old Mine Road Historic District. The collapsed lean-to, a modern (1980s) addition, would be removed.
    - i. These actions would allow floodwater to flow through, not against, the Garis Barn, making it less likely to be destroyed by flooding on Van Campens Brook.
2. Re-establishment of access to Millbrook School.
  - a. Vehicular and pedestrian access to Millbrook School would be re-established via an old road and a new pedestrian trail.
    - i. The road would provide access for NPS administrative vehicles needed in certain circumstances, such as to bring materials and equipment to the school in order to perform preservation maintenance work. The road, originally constructed prior to 1860, would be re-established between Old Mine Road and Millbrook School by the removal of trees and brush. The road is approximately 600 feet long. Grading work appears to be unnecessary, as the road is in good condition. When vehicular access is needed, a portion of the guardrail on Old Mine Road would be temporarily removed.
    - ii. A hiking trail, approximately 1200' long, would be constructed between Millbrook Village and Millbrook School so that visitors can once again access the school on foot, and replacing the route that was formerly available via the Columbia-Walpack Turnpike. The trail tread would be approximately 18" wide and on "native surface" (the dirt and rock already onsite), with approximately 3' of clearing of brush and tree limbs on either side.
3. Management of recreation features and visitor access.
  - a. Within the Watergate Recreation Site, the parking lot, sidewalk, stairs, drinking fountain, restrooms, Watergate Road, and septic field would remain unchanged.
  - b. The ponds and picnic area would be removed, and wetlands restored in their place. Establishment of a picnic area at a different site is not proposed as part of this project, as there are other picnic areas nearby.
  - c. The project area would be closed to all visitors for the duration of construction, approximately twelve to sixteen months.
  - d. Temporary closures on Old Mine Road would be needed during the relocation of the utility line. Relocation of the utility line would likely take six weeks to

complete. Closures would be short-duration and vehicles would be able to pass by at intervals with the aid of a flagger.

- e. Silvie Meadow would be used as a staging area during construction and would remain closed to all visitors for the duration of construction. Silvie Meadow would be restored to its current condition—a grassy field— post-construction.

## 2.2 MITIGATION MEASURES

The proposed action includes measures that will help to avoid and/or minimize adverse impacts of the project to natural resources, cultural resources, and visitor use and experience. These are described below.

### 2.2.1 Natural Resource Mitigation Measures

1. Seasonal restrictions to protect threatened bat species, state-listed rare, threatened and endangered species, and native trout would be followed, with some exceptions as listed below.
  - a. Northern Long-Eared Bat and Indiana Bat: No removal of trees greater than 3" diameter at breast height (DBH) would occur between April 1 and November 15 to protect bats. If there is a critical need to remove a tree or trees during the restricted period, emergence surveys can be conducted per U.S. Fish and Wildlife Service (USFWS) protocol.
  - b. Herpetofauna: No in-stream work would occur during hibernation, generally November 15-March 31. Ponds would not be dewatered between October 31 and March 31. (Also, see requirement for an onsite biological monitor, below.) If there is a critical project need, New Jersey Department of Environmental Protection (NJDEP) would review requests for work during the restricted period on a case-by-case basis.
  - c. Native Trout: In-stream work would be restricted between September 15 and March 15 to protect brook trout spawning and young.<sup>3</sup> If work is of short duration and/or can be fully mitigated (e.g. sedimentation control), NJDEP may allow an exception to enable work during the restricted period.
2. Fish salvage would occur prior to the dewatering (drawdown) of the two large ponds.
  - a. The pond drawdowns are expected to take approximately one week per pond. Fish would be salvaged near the beginning of the drawdown (when water levels are still high) to ensure the least amount of stress on the fish.

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<sup>3</sup> Therefore, when combined with the restrictions for herpetofauna in hibernation, the in-stream work restriction period would be September 15-March 31.

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- b. The most likely method of salvage would be electroshocking which is efficient, effective, and temporarily stuns but does not injure the fish, followed by collection into buckets. They would then be transported by truck and released into the Delaware River at the Poxono Boat Launch, 3.5 miles south of the project area. See map, Appendix A, Figure 6.
    - c. Invasive species, if found, would be euthanized.
    - d. Dewatering the ponds slowly, and the salvage of fish, would minimize any increase of stream temperature or sedimentation downstream, as well as reduce the risk of introducing of non-native species into Van Campens Brook.
  3. Salvage of native brook trout, naturalized rainbow trout, and other native fish species would occur prior to the dewatering of the stream channel near the Garis Barn and the stream channel near Dam 10. They would be moved to an area upstream or downstream from the work area. If any brown trout are found, they would be moved to a location downstream of the series of natural waterfalls at Van Campens Glen. Any invasive rusty crayfish would be removed and euthanized (frozen).
    - a. During stream channel work, Van Campens Brook would be piped around the work area and a filter would be placed on the upstream end of the pipe to prevent trout from entering it.
    - b. Dewatering the stream channel prior to work would minimize impacts to aquatic species from equipment and materials, as well as from sedimentation.
  4. Per NJDEP guidelines, best management practices to prevent erosion and sedimentation would be adhered to (NJDEP 2020c).
  5. Biological monitors, meeting the qualifications of the state of New Jersey, would be present onsite during construction to ensure rare, threatened, or endangered fauna are not harmed by construction activities.
    - a. Physical barriers, such as silt fence that has been toed into the soil, would be installed around the project area to prevent rare, threatened, or endangered fauna from entering the site.
    - b. Should timber matting or gravel causeways be needed within the project area to access some sites, openings (tunnels) will be left at the bottom so that fauna can pass through. NJDEP design specifications for these passages would be followed.
  6. Beavers are present within the project area and are expected to remain so. The stream channel restoration design incorporates features that allow for the presence of beavers but does not allow the beavers to compromise the stability of the reconstructed channel. Measures include those suggested in recent scientific literature (USFWS 2017; USFS 2019).
  7. Surface and groundwater monitoring would continue for at least one year post-construction to confirm that the hydrology of the restored wetlands is functioning as expected.
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8. Vegetation monitoring of restored wetlands, stream banks, and areas of invasive plant treatment would be monitored for a minimum of five years. Return treatment(s) to ensure establishment of native vegetation and control of invasive plants may be necessary. A vegetation management and monitoring plan would be developed prior to the start of construction.

## **2.2.2 Cultural Resource Mitigation Measures**

1. Archeological monitors would be present onsite during any ground-disturbing activity in medium- or high-probability areas.
  - a. Protocols for inadvertent discovery would be adhered to.
  - b. Paleontological, prehistoric, and historic objects, structures, and artifacts found during construction would be documented and, when appropriate, catalogued and accessioned.
2. The ground within staging areas and access roads, if not paved, would be protected by geotextile fabric and stone to prevent disturbance.
3. The interior and exterior of the Garis Barn would be fully documented prior to removal of a portion of the exterior clapboard siding.
  - a. The clapboards would be stored within the park for future reuse.
  - b. The objects stored inside the Garis Barn would be inventoried and, when appropriate, catalogued and accessioned.
4. The alignment, dimensions, and roadbed material profile of the Columbia-Walpack Turnpike would be documented prior to its demolition.
5. A road between Millbrook School and Old Mine Road, constructed prior to 1860 but unused for decades, would be put back into use in order to replace the access for administrative vehicles that was lost by flood damage to the Columbia-Walpack Turnpike. Trees that have grown in on top of the road surface would be flush-cut and brush would be cleared in order to restore the use of the road by vehicles and pedestrians.
6. A hiking trail would be constructed in the upland between Millbrook Village and Millbrook School to enable park visitors to access the school on foot.
7. A Memorandum of Agreement for compliance with Section 106 of the National Historic Preservation Act would be negotiated with the Historic Preservation Office of New Jersey. If additional mitigation measures were determined to be appropriate to protect and/or compensate for impacts to cultural resources, these would also be implemented.

## **2.2.3 Visitor Use and Experience Mitigation Measures**

1. For visitor safety, the project area and any staging areas would be closed to visitors for the duration of construction, approximately twelve to sixteen months.
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2. Utility line relocation to Old Mine Road would preferably occur during winter or early spring, when visitor use of the road is low and often already limited by road closures due to conditions.
    - a. If Old Mine Road is not closed, one-lane closures may be implemented, or two-lane closures if flaggers are present and closures are of limited duration.
  3. Construction vehicles, equipment, and supplies entering and exiting Old Mine Road would use the appropriate traffic-safety protocols, such as flaggers, spotters, and signs.
  4. Notifications regarding construction, and interpretation and education regarding the project, would be posted (at a minimum) electronically on the park's website and social media. Permanent installation of interpretive materials or a wayside regarding the project or resources within the project area may be considered but is not required.
  5. Construction work would occur on weekdays during normal working hours (usually between 7:30 a.m. and 4 p.m.), unless there is an exceptional circumstance that would necessitate working outside those hours and days. The Superintendent would approve or deny requests to work outside those hours on a case-by-case basis.

Detailed maps of the proposed action (preferred alternative) can be found in Appendix A.

### 3. ENVIRONMENTAL IMPACTS

This section describes the environmental impacts of the no-action alternative versus the proposed action alternative.

The NPS identified potential issues with the alternatives that could cause environmental impacts. Issues and impact topics are identified in Section 3.1. Section 3.1.2 compares the potential direct, indirect, and cumulative impacts of the proposed action versus the impacts of no action (a continuation of current management within the project area). In order to reduce the magnitude of effects, the NPS has identified mitigation measures that would reduce, eliminate, or minimize adverse effects of implementing the proposed action. These were identified in Section 2.2 and are incorporated into the analysis in Section 3.2.

#### 3.1 ISSUES AND IMPACT TOPICS

The NPS, park stakeholders, and consulting parties identified issues and concerns related to the project that could have adverse environmental impacts to park resources and values. Issues can be related to the proposed action, or to the consequences of no action. The potential impacts of the issue that was retained for detailed analysis are described in Section 3.2. Issues that do not have the potential for significant impacts are dismissed from further analysis in this EA, and the rationale is provided in this section.

##### 3.1.1 Issue Retained for Detailed Analysis

***Old Mine Road Historic District and Millbrook Village Historic District could be adversely affected by the project.***

The project area is located within portions of the Old Mine Road Historic District and Millbrook Village Historic District. Historic and potentially historic structures within the districts would be removed, including dams greater than 50 years old, a portion of the Columbia-Walpack Turnpike, and a portion of the exterior siding on the Garis Barn. The utility line would be relocated to a different right-of-way within the districts. The effects that these actions might have to the integrity and significance of historic districts is analyzed in Section 3.2.1, Impacts to Historic Structures and Districts.

### 3.1.2 Impact Topics Considered but Eliminated from Detailed Analysis

***Temporary and permanent impacts from construction could affect aquatic resources.***

Van Campens Brook is classified by the state of New Jersey as a Category One stream due to its exceptional ecological significance. Category One streams are protected under antidegradation policies by the NJDEP to prevent any measurable changes in water quality. This project would meet all NJDEP standards for the protection of water quality through the implementation of best management practices (see Section 2.2.1, Natural Resource Mitigation Measures) such as the use of erosion and sedimentation controls. Meeting the NJDEP standards for water quality will also contribute to minimizing impacts to the aquatic habitat. Time-of-year restrictions on in-stream work would be followed in order to avoid harming fish, reptiles, and amphibians during critical times in their life cycle, such as reproductive time periods and hibernation.

Relocation of fish would occur prior to in-stream work each day, as well as prior to the dewatering of the ponds. The human activity within the work area would likely cause many reptiles and amphibians would leave the work area on their own, and on-site biological monitors would move any remaining individuals. It is not feasible to relocate aquatic invertebrates, such as caddis fly larvae.

Due to the above measures, there may be temporary impacts to aquatic vertebrate populations from these actions, and there may be a loss of some aquatic invertebrates, but these impacts are unlikely to measurably or meaningfully impact populations of these species within the watershed.

The NPS has conducted over five years of studies at the site as well as performed modeling of current and projected hydrology in the area and hydraulics in the stream. These are summarized in the *Basis of Design Report* and *Hydrology and Hydraulics Report* (WSP 2020b; WSP 2020d). The studies show that after the project is implemented, the qualities of Van Campens Brook would improve, its floodplain would function properly, and the wetlands would be successfully restored. The temperature of Van Campens Brook would be reduced post-construction due to the removal of the ponds, which are contributing unnaturally warm water into the stream. Van Campens Brook would still flood during storm events, but the energy of the floodwaters would be dissipated in its reconnected floodplain, rather than staying in the stream channel. This will reduce erosion, scouring, and other damage from flooding. Stabilization of the streambanks will also reduce erosion and scouring, and both of the above actions will reduce the amount of sediment in the stream and reduce the amount of damage to habitat, thereby reducing harm to

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aquatic species. The stream and restored wetlands would support much healthier populations of native species.

Because the impacts of the project to aquatic resources would be temporary and largely occur only during construction, and there would be a long-term and substantial improvement over current conditions post-construction, this topic was dismissed from further in-depth analysis.

***Grading during construction could affect native vegetation and the wildlife habitat it provides.***

Much of the project area has been modified by humans, most notably for agriculture and recreation, which has directly and indirectly caused the suppression of native plant species and the proliferation of invasive plant species (WSP 2020e). This has also reduced the quality of habitat for native wildlife. Without intervention, this trend would continue over time and the quality of wildlife habitat would continue to worsen.

Construction of this project would require the removal of the turfgrass lawn and grading and excavation in areas that contain invasive plant communities. To reduce the spread of live invasive plants, some areas would be treated with herbicide to kill the plants prior to construction. In other areas (depending on the species of invasive plants), the grading work would be enough to kill the plants so herbicides would not be needed. To reduce the spread of invasive plant seeds, soil would not be brought in from external sources. Soil onsite would be stockpiled and reused as topsoil after grading is complete. Post-construction, the graded areas would be reseeded and replanted with native vegetation. Monitoring and return treatments may be needed to ensure the native vegetation re-establishes properly (see Section 2.2.1).

Because the impacts of the project would be beneficial to native vegetation and wildlife habitat, this topic was dismissed from further in-depth analysis.

***Temporary and permanent impacts from construction could affect protected wildlife species.***

Twelve years of surveys and monitoring have been performed to identify special-status species habitat and populations within the project area. The project has been designed to avoid impacts on special-status species wherever possible and minimize the possibility of impacts in all other cases. Avoidance and minimization measures are described in Section 2.2.1, Natural Resource Mitigations, and include excluding key habitat from the project area, using seasonal restrictions to avoid critical time periods for reproduction and hibernation, requiring qualified biological

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monitors to be present during construction to find and move any individuals out of the work zone, and the installation of construction fencing to keep wildlife out of the area.

While there would be a minimal risk of impacts to protected wildlife individuals during construction, any impacts are unlikely to measurably or meaningfully impact populations of these species within the region. The permanent impact of the project would improve habitat and ensure the long-term persistence of the populations. Because the impacts of the project would ultimately be beneficial to protected wildlife species, this topic was dismissed from further in-depth analysis.

***Beavers could compromise the function of the restored areas by changing the hydrology and cutting the newly planted vegetation.***

Beavers are already present in the project area, and even if removed for this project they would be likely to return. It is NPS policy to allow such natural processes to continue without interference except where they may interfere with or provide unacceptable risks to people or park resources (NPS 2006).

Beaver activity would provide beneficial impacts within the project area if allowed to continue. For instance, beaver ponds increase total water area, stabilize stream flow, and provide resting, feeding, shelter and wintering areas for brook trout in shallow streams such as Van Campens Brook. The ponds also allow for increased plankton and invertebrates which trout and other fish feed on.

Beavers would be unlikely to change the characteristics of the wetlands—multiple springs would feed the restored wetlands, as opposed to a stream that could be dammed. They are, however, expected to continue to create dams on Van Campens Brook. Beavers were considered in the stream restoration design because there are certain areas that need to have enough time to stabilize post-construction before new beaver dams are built; where the construction of a new beaver dam could cause the stream to jump out of the banks of its newly-restored channel and create a new channel, causing damage to the surrounding area. For example, in an area where the streambank would be stabilized with root wads from trees, if the root wads were placed across from each other it would be a prime spot for a beaver to build a dam because the dam would be easily anchored to each streambank. If the root wads are diagonally across from each other, the angle and the flow of water would inhibit a dam from being secured to both banks. These design principles are described in a recent publication by the U.S. Forest Service, “Managing for Large Wood and Beaver Dams in Stream Corridors.” (USFS 2019)

The beaver ponds on the stream do not create the same water temperature issue as the man-made ponds within Watergate Recreation Site because Van Campens Brook has more flow,

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which keeps temperatures lower. Additionally, the ponds at Watergate do not have any vegetation tall enough to provide shade, whereas vegetation on Van Campens Brook will become tall enough to provide shade and keep stream temperatures low.

Beavers would continue to cut brush and trees near their habitat, but many of these native species (willows, sycamore, native dogwoods) re-grow fairly quickly and provide shade and habitat. During restoration, plantings of nursery-grown woody tree and shrub species would be conducted in the upland, out of the beaver habitat. Areas in beaver habitat would be replanted with fast-growing and re-sprouting woody species such as those listed above, as well as seeded with other native vegetation.

Over time, there will be changes in the stream channel and streamside vegetation as beaver populations change and as beaver dams breach from flooding and are rebuilt at that site or elsewhere. These fluctuations in site conditions are a natural process and a desirable part of ecosystem function, and because of that this topic was dismissed from further consideration.

***The project could impact archeological sites.***

An archeological survey was performed in 2020, supplementing information on sites that were already known. The survey and analysis (WSP 2020a) determined that there is a low probability for the project to affect significant archeological resources. Archeological monitors would be present during construction and should any potentially significant archeological resources be identified, the proper steps under the National Historic Preservation Act and other relevant laws would be taken.

Because archeological sites would not be impacted by the project, this topic was dismissed from detailed analysis.

***Park visitors could be displaced by the removal of the ponds and picnic area at the Watergate Recreation Site.***

Visitor use data for the last nine years indicates that Watergate Recreation Site receives just 1-6% of the visitation of the six similar sites within the park (Hallo 2017). Anecdotal observations and an informal 2015 study indicate that the majority of visitors are onsite for less than 10 minutes, and only use the parking lot or restrooms before departing. Neither feature would be removed as part of this project. While the removal of ponds would displace open-water anglers, other (and better quality) open-water fishing opportunities are available within the park, such as the nearby Delaware River, Blue Mountain Lakes, and Crater Lake. The quality of freshwater angling in Van Campens Brook would improve upon completion of the project. The picnic area

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has very low use, and there are two picnic areas nearby—Millbrook Village and Turtle Beach—that could be used by any displaced visitors.

Because of the low visitation to the site, the presence of similar facilities nearby, and the expected increase in recreational quality at Watergate post-project, visitor use was dismissed from further analysis.

***Park visitors could be temporarily impacted by construction activities.***

Construction would occur for twelve to sixteen months. Due to seasonal restrictions to protect wildlife species, much of the grading work would occur in summer and could have an impact on visitors during the busy season through increased construction traffic and impacts to soundscapes.

The project area, including the entire Watergate Recreation Site and Silvie Meadow, would be closed to visitors for the duration of construction. As described in the section above, there are other sites that could accommodate some of the types of recreational activities those visitors seek, such as fishing and picnicking. Millbrook Village would remain open throughout construction.

Park roads would remain open for the duration of construction, although there would be short-duration delays to traffic during utility line relocation on Old Mine Road, and at the construction entrance when oversize equipment is brought in or removed. Flaggers would be used to ensure safety. There would be an increase in construction traffic on roads near the project area as materials are brought in, and as excess fill is hauled by truck to Quarry Site AA. Altogether, the short delays may inconvenience visitors, and the increased traffic may cause the roads to seem busier than normal, but neither of these would substantially impact the ability of visitors to freely travel park roads.

Construction activities would create noise. Visitors to Millbrook Village may hear some construction noise, especially as stream restoration work occurs near the Garis Barn on the southern end of the village. Hikers on nearby trails, including Upper Glen, Pioneer Ridge, and potentially the Appalachian National Scenic Trail may also hear construction noise. The soundscape of those locations already includes noise from vehicles, aircraft, and other construction projects, and this project would add incrementally to the ambient noise.

Construction would occur only during normal working hours (typically 7:30a.m. to 4 p.m.) on weekdays, unless there is an exceptional need to work late or on weekends (such as securing the site prior to a major storm event). Most visitation in the park occurs on weekends and those

visitors would not be impacted by construction activity, other than the closure of the project area.

Because of the temporary and minor nature of the impacts of construction on visitor use and soundscapes and the mitigations described in Section 2.2.3, this topic was dismissed from detailed analysis.

## **3.2 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

This section contains a description of the affected resources and an analysis of potential direct, indirect, and cumulative impacts to those resources identified in Section 3.1, Issues and Impact Topics. The analysis compares the effects of not taking action (the current condition and management of that resource) with the effects of the proposed action (changing the condition and/or management by implementing this project).

### **3.2.1 Impacts to Historic Structures and Districts**

#### **Affected Environment**

The project area encompasses parts of two historic districts: Old Mine Road Historic District (New Jersey Historic Preservation Office [NJHPO] ID # 2608) and Millbrook Village Historic District (NJHPO ID # 4533). A third historic district, the Pennsylvania-New Jersey Interconnection Bushkill to Roseland Transmission Line (NJHPO ID # 5117), was formerly located within the project area; however, this resource was demolished as a result of the Susquehanna to Roseland 500-kV Transmission project. As such, it is not included in this evaluation. The Watergate Wetlands Restoration Project Cultural Resources Report (WSP 2020a) contains detailed information about the affected environment.

#### ***Old Mine Road Historic District***

The Old Mine Road Historic District is a 26-mile linear historic district that was listed in the National Register of Historic Places (NRHP) in 1980. It is part of a 100-mile series of connected roadways that linked the Hudson River in Kingston, New York, to the Delaware River Valley and ultimately to Philadelphia. This historic corridor was important in the early settlement of the Delaware Valley, and remained relatively untouched through the twentieth century. The portion listed in the NRHP extends between the park boundary in Montague Township, Sussex County,

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New Jersey to the park boundary with Worthington State Forest in Hardwick Township, Warren County, New Jersey and encompasses what the NPS deemed “the part of the road which retains the most substantial historic integrity, both from the standpoint of the predominance of representative historic structures and relative absence of non-historic intrusions, and of the closest probable adherence to the road’s historic alignment” (Bodle 1977). The boundary of the historic district includes the right-of-way of the various roads comprising the historic district along with 50 feet on either side of the right-of-way. The boundary also expands in 21 locations (described in detail in the NRHP nomination form) to include numerous historic properties along the 26-mile stretch of Old Mine Road, including Millbrook Village.

The NRHP nomination identifies one building within the project area that is a contributing resource to the Old Mine Road Historic District: the Millbrook School. Millbrook School is described in the NRHP nomination as follows:

The Millbrook School was built about 1820 for the local Walpack Union Congregation. It stood on the hill above its present location, to which it was moved in 1868. The school was run in its basement, with church services on the main floor until the latter year, when it was moved and converted into a fulltime school building. Despite neglect and careless maintenance, it retains considerable early details and character. The Millbrook Cemetery is on the hill above the school. The names of area residents of Millbrook are still visible on the old gravestones. Included are the Miller, Abraham Garis [*sic*] and the man who organized the village’s first Sunday School, Conrad Welter. (NPS 1974)

The two outhouses at Millbrook School were not discussed in the NRHP nomination form. Both were reconstructed in the 1990s to replace the collapsing originals.

The Garis Barn is associated with the E.L. Garis House just north of the project area. The barn was not specifically mentioned in the NRHP nomination for the Old Mine Road Historic District, but NJHPO issued a concurrence with the NPS’s determination (NPS 2016c) in February 2020 that the barn is a contributing resource to the district.

The Garis Barn is an English-style barn, constructed circa 1860 in conjunction with the E.L. Garis House. It appears to have been constructed in its present location, which is approximately 315 feet southwest of the house, between the Columbia-Walpack Turnpike Trail and Van Campens Brook.

There are several roads that run through the Old Mine Road Historic District that have not been formally evaluated to determine if they contribute to the district. These include the portion of the Columbia-Walpack Turnpike that travels through the village of Millbrook to the Silvie (Silve)

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Meadow Homestead field; the gravel drive through the Silvie Meadow Homestead field; and the section of Old Mine Road that travels southward from the Silvie Meadow Homestead field driveway. For the purposes of this document, we are considering them as contributing resources.

### ***Millbrook Village Historic District***

Millbrook Village as it stands today is mostly a reconstructed historic village, designed to provide visitor use and enjoyment of the site through interpretation and demonstration of historic trades and activities of the 19th century. Some of the elements of the village are in their original locations, but a majority of the village's buildings were moved to their current locations from properties nearby in New Jersey as a means of preserving them due to the proposed inundation of their original location from the Tocks Island Dam project. All building relocations occurred during the 1970s and early 1980s. Some buildings in Millbrook are reconstructions, the most recent of which was the reconstruction of Trauger Barn in 2017.

There are forty-three buildings and one [privately-owned] cemetery in Millbrook Village, though only six of these buildings and the cemetery are original to the village (NPS 2018). The NPS completed an NRHP nomination form for Millbrook Village Historic District in the early 1970s, recommending it as a significant representation of a 19th-century Delaware Valley village and acknowledging:

The National Park Service seeks to maintain and present the village, not as precise historical replica of Millbrook, but as a typical rural settlement of the period. In addition to surviving Millbrook structures, therefore, several buildings have been relocated to the village from neighboring sites, and a few have been reconstructed. (NPS 1975)

Millbrook Village Historic District was listed on the state historic register by the NJHPO in 1975 but has not been listed on the NRHP.

The project area encompasses two contributing features of the Millbrook Village Historic District, which are also contributing resources to the Old Mine Road Historic District: the Garis Barn and Millbrook School. Roads were not discussed in the NRHP nomination form nor were the outhouses at Millbrook School.

### ***Columbia-Walpack Turnpike***

The Columbia-Walpack Turnpike was chartered in 1819 and opened in 1832. The portion of this trail from the center of Millbrook Village to the road connecting to Silvie Meadow is listed as

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contributing to the Old Mine Road Historic District but referred to as “the National Park Service gravel drive.”

The Columbia-Walpack Turnpike was re-routed around Watergate in the 1950s, but it remained on driving maps until at least 1967. A map from the 1970s show another re-route had taken place to move the road around the second-largest pond. A series of flood events from 2004-2011 heavily damaged the trail and it has not been repaired since, and in 2014 it was removed from the USGS map, even as an unimproved road.

### ***Utility Line***

A utility line, constructed in 1929 and upgraded several times over the decades, is parallel and at times adjacent to the Columbia-Walpack Turnpike between Pond 2 and the Garis Barn. It is still in use, and the right-of-way receives regular vegetation maintenance (clearing) and is accessed for repairs as necessary.

### ***Watergate Recreation Site***

The Watergate Recreation Site is not eligible for individual listing on the NRHP or as contributing resources to the historic districts because it lacks historical significance. Features on the site lack historic integrity of materials, workmanship, and design. The cultural landscape is not intact—the houses, barns, and outbuildings were demolished in the 1970s, many of the dams have been damaged or destroyed by flooding, and modern elements such as the restroom, septic mound, and parking area have also dramatically altered the landscape. No infrastructure or aboveground historic properties at the Watergate Recreation Site would be affected under the no-action or proposed action alternatives.

## **Environmental Consequences**

### **Methodology and Assumptions**

This analysis evaluates the impacts of the proposed action on the contributing resources of the Old Mine Road Historic District and the Millbrook Village Historic District. The impact analyses are based on the criteria for adverse effects, as defined by the National Historic Preservation Act (NHPA), as amended, and found in 36 CFR 800.5 “Assessment of adverse effects.” According to these criteria,

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity

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of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

### **Impacts of the No-Action Alternative**

Under the no-action alternative, the Columbia-Walpack Turnpike and contributing buildings within the historic districts would continue to deteriorate and continue to lose any ability to convey the feeling of the setting of those features. Eventually, those features would be lost entirely and therefore would no longer add to the visitors' use or experience of the historic districts.

#### ***Columbia-Walpack Turnpike***

The Columbia-Walpack Turnpike would remain in its deteriorated (storm-damaged) condition, continuing to inhibit pedestrian access to Millbrook School and the Garis Barn and preventing vehicular access. Repair of the road is highly unlikely—any repairs made to the road would be unsustainable because flooding and damage is expected to continue. As such, it is a low priority for the park to invest in, especially in the context of other roads and trails that are more critical to park operations and visitor use and for which repairs would be more sustainable. The road is likely to continue to deteriorate over time during future storm events, becoming even less passable by pedestrians and continuing to be impassable to vehicles. The road would remain in its existing alignment, and the setting of the Garis Barn and Millbrook School in relation to the road would be unchanged until the time when the road is completely lost to flooding.

The eventual loss of the section of the Columbia-Walpack Turnpike between the Garis Barn and the Watergate Recreation Site due to flooding would impact both historic districts, but to varying degrees. It is one of the two pedestrian thoroughfares within Millbrook Village Historic District, extending between the Cider Mill and Millbrook School. (The other pedestrian thoroughfare is from the parking lot to the General Store.) The loss of the already-degraded section between the Garis Barn and Millbrook School, approximately 800 feet long, would impact the visitor's use and experience of the district but the other approximately 1200 feet of thoroughfares would remain intact and continue to be more heavily used by visitors.

The section of the Columbia-Walpack Turnpike that is within the Old Mine Road Historic District is longer; approximately 2700 feet of it would eventually be lost to flooding under the no-action

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alternative. However, the Old Mine Road Historic District is composed of many miles of road traces, some extant and some not. The loss of less half a mile of road that is already in degraded condition would have a slight impact on the integrity of the district, but not meaningfully impact visitors' use or experience of the district.

### ***Garis Barn***

Under the no-action alternative, there would be no change in maintenance of the Garis Barn. The Garis Barn is in fair condition but has been damaged by flooding and is likely to eventually be destroyed by future flood events. Given that, the park would not begin investing in preservation treatments.

Within Millbrook Village Historic District, just six of the forty-five buildings in the district are historic, including the Garis Barn. While the land around the barn has not retained its original agricultural setting, the barn remains in its "village" setting—similar to other barns in the village that are not associated with agricultural land. The eventual loss of the Garis Barn to flooding would impact the visitors' experience of the original buildings within the district and their village settings.

By contrast, there are 13 other historic barns within the Old Mine Road Historic District, many of which are more visible to park visitors and still in their original agricultural settings. Therefore, there would be a slight impact to visitor's use and experience of buildings, settings, and landscapes within the district.

### ***Millbrook School***

Under the no-action alternative, there would be no change in maintenance of Millbrook School. Millbrook School is in fair condition. Millbrook School is the only schoolhouse in Millbrook Village Historic District and was one of the most popular locations for visitors prior to the flooding that damaged the Columbia-Walpack Turnpike. It is situated above the floodplain and would not be damaged by future flood events. However, access to the school for maintenance staff, tools, and materials would continue to be an issue, becoming more difficult over time as the Columbia-Walpack Turnpike continues to degrade. Still, it is likely that the park would continue periodic preservation treatments at the school. Impacts to the school would continue to be vandalism and a general decline in condition due to lack of ability to access and maintain it. The remoteness of the school would remain unchanged, and it is unlikely that the park's ability to patrol the school would increase. Repairs would continue to be made as the damage is found and park or volunteer group resources allow.

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Millbrook School is one of two remaining one-room schoolhouses within the Old Mine Road Historic District. The other school (Calno School), two miles south of the project area, is in better condition and more visible and accessible to visitors because it is sited right next to Old Mine Road. However, it is not the same as Millbrook School as far as portraying the 19<sup>th</sup> century time period or setting, nor does it have as much intact interior fabric (original features) as Millbrook School. The continued deterioration of Millbrook School under current conditions would have an impact to visitor's use and experience of the Old Mine Road Historic District.

### ***Utility Line***

Under the no-action alternative, the utility line that bisects the project area would remain in place. The owners of the line would continue maintain the line and clear the right-of-way, which is a visual impact for visitors walking along the Columbia-Walpack Turnpike and experiencing the Millbrook Village Historic District setting and context of the 1870s, when there would not have been a utility line present. By contrast, within the Old Mine Road Historic District there are many other utility lines in similar settings in the woods and along road traces. Continued maintenance and use of the line would be unnoticeable to most visitors, especially as the Columbia-Walpack Turnpike continues to deteriorate.

## **Impacts of the Proposed Action**

### ***Columbia-Walpack Turnpike***

Under the proposed action, portions of the Columbia-Walpack Turnpike would be removed.

Although already suffering from diminished historic integrity of location, materials, and association, the removal of portions of the Columbia-Walpack Turnpike would permanently remove one of the traditional means of travel between Old Mine Road, Millbrook School, and Millbrook Village. (The remaining route is Old Mine Road.) Removal of the road would impact the setting of the Millbrook School and the original travel route for schoolchildren and, later, park visitors.

### ***Millbrook School***

Pedestrian access for visitors between Millbrook Village and Millbrook School be re-established via an upland route. The new route would be an improvement over the current pedestrian access route because it would be in better condition (not rutted and covered in running water), not prone to flooding, and generally more passable. It would allow visitors to have something of the 19<sup>th</sup> century experience in traveling from the village to the school. However, hiking an upland

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route is not fully representative of the traditional route and experience of walking along a country lane, even though the endpoints are the same.

Vehicular access to the school would be enabled by re-establishing the pre-1860 road between Old Mine Road and the school. This would benefit the preservation of the building itself by allowing for vehicular access for maintenance staff, tools, and supplies, but again, would not replicate the feeling or setting of the Columbia-Walpack Turnpike.

Altogether, the re-establishment of access to Millbrook School for visitors and preservation crews, while different than the original route, would allow for better preservation of the school and benefit visitors' use and enjoyment of the school in the long term.

### ***Garis Barn***

Removal of the clapboards would aid in the long-term preservation of the structure by allowing floodwaters to flow through the building, rather than against it. (See Appendix B, Photo 16). This will allow visitors to experience the dimensions and presence of the barn in its current setting. The barn would be preserved in the longer term but would look somewhat less "barn-like" without its lower clapboards. The lean-to on the east side of the building would also be removed, but it is a modern addition and its removal would have a beneficial impact to the preservation of the barn as well as restoring its historic dimensions.

The change is also potentially reversible—clapboards would be stored in the park and could be re-installed if conditions change. While the change would impact visitor's enjoyment of the façade of the barn and its setting, it would be less of an impact than the consequence the eventual loss of the entire building to flooding. Under the proposed action, loss of the building to flooding is still possible—but less likely. Altogether, the changes to the barn would have a slight impact to Millbrook Village Historic District, but less so than the no-action alternative.

As stated in the previous section, there are 13 other historic barns within the Old Mine Road Historic District, many of which are more visible to park visitors and still in their original agricultural setting. Removal of the lower clapboards would better preserve the Garis Barn than the no-action because it would delay or prevent its loss due to flooding, although the change in its façade would cause a slight impact to the historic district.

### ***Utility Line***

The utility line that bisects the project area would be relocated from its original position within the Old Mine Road Historic District and Millbrook Village Historic District. Utilities are not addressed in the National Register nomination for either historic district. The line would remain within the Old Mine Road Historic District, maintain the same dimensions, and be sited along

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the current (post-1930s) alignment of Old Mine Road. Both alignments were constructed within the district's period of significance. A portion of the line would be moved out of Millbrook Village Historic District with its relocation to Old Mine Road.

The park conducted a visual impact analysis of the proposed utility line relocation (NPS 2020a). There would be a wider corridor of vegetation clearing next to the road than presently, which would have visual impacts on the straightaways. However, it would not substantially change the character of Old Mine Road. The road has a modern feel, with a wide pavement width (not like a carriage road), steel-backed timber guiderails, and metal signs. Utility lines are adjacent to Old Mine Road in other areas of the park and are not so obtrusive that they affect one's sense of place. Therefore, there would be a slight impact on the Old Mine Road Historic District from the relocation of the utility line, but it would not meaningfully change the visitors' impression of the feeling or setting of the road.

There would be impacts to Millbrook Village Historic District from relocating a portion of the line within the village. Its relocation to the west side of the village would add a visual intrusion to the village landscape. The poles and wires would be visible from the main visitor parking lot. However, it would be on the west side of the parking lot, and not intrude on visitors' views from the parking lot to the main part of the village.

### **3.2.2 Cumulative Impacts**

#### **Methodology for Analyzing Cumulative Impacts**

A cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." (Title 40 of the Code of Federal Regulations [CFR], Section 1508.7). Cumulative impacts can result from "individually minor but collectively significant actions taking place over a period of time." Therefore, past, present, and reasonably foreseeable future projects and plans that could also affect the same resources identified and discussed below are included in this chapter.

There is one relevant action that contributes to cumulative impacts—the Susquehanna-Roseland Transmission Line. When the existing 230-kV transmission line in PPL and PSE&G's right-of-way through the park was reconstructed and upgraded to a 500-kV transmission line, the action resulted in an expansion of the transmission line right-of-way (ROW) across 4.5 miles of park land and an increase in tower height from 80' to 195', making the transmission line easily visible above the treetops. This had significant effects to historic properties, historic districts, and

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cultural landscapes— and in particular, its impact to the views of cultural landscapes and historic buildings. The transmission line is a visual intrusion on the cultural landscapes within the park, including portions of the Old Mine Road Historic District and Millbrook Village Historic District that are within this project area, as well as views of and from historic buildings within the park. Therefore, it contributes to a loss of the visual integrity of historic landscapes and resources within the project area and throughout the park.

## **No-Action**

Not implementing the project would contribute to a gradual and slight cumulative diminishment of the integrity of both the Old Mine Road and Millbrook Village Historic Districts, as well as historic resources parkwide. However, none of the historic resources that would be adversely impacted by lack of action are so unique or important that they would incrementally, meaningfully contribute to the cumulative effects on historic landscapes and resources.

In a parkwide context, some of the buildings on the 91 historic properties that are already in fair or poor condition (including Millbrook School and the Garis Barn) are likely to continue to deteriorate due to a long-term lack of capacity to preserve all 300+ historic buildings in the park.<sup>4</sup> In the Old Mine Road Historic District in particular, approximately one-third of the properties (9 properties, 16 buildings) are in fair to poor condition and continue to deteriorate. There are 16 barns within the Old Mine Road Historic District. In this context, the deterioration and eventual loss of the Garis Barn to flooding would incrementally contribute a small adverse impact to the overall cumulative impacts to the park and the Old Mine Road Historic District.

## **Proposed Action**

Under the proposed action there would be measures taken to control the deterioration of the contributing features of the historic districts as described above in Section 2.2.2 including the Garis Barn, Millbrook School, and the Columbia-Walpack Turnpike. These actions would be beneficial to the buildings and the districts, and therefore provide a beneficial incremental contribution to cumulative impacts to historic resources in the park.

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<sup>4</sup> There are over 700 buildings in the park, including both historic and non-historic buildings.

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## 4: CONSULTATION AND COORDINATION

This section summarizes the agency consultation and coordination and public involvement that occurred during the preparation of this environmental assessment.

Table 3: List of Agencies and Organizations Consulted

| Law, Statute or Authority                                          | Regulated Resource                                 | Agency                                                                                                                  | Permit, Review, or Consultation                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sections 401 and 404 of the Clean Water Act, EO 11190 and EO 11198 | Freshwater wetlands and floodplains                | New Jersey Department of Environmental Protection (NJDEP)                                                               | NJDEP has delegated authority from the U.S. Army Corps of Engineers to implement Sections 401 and 404 on projects in their state. The NPS is applying for permits under the state's Freshwater Wetlands Protection Act Rules at N.J.A.C. 7:7A and Flood Hazard Area Control Act N.J.S.A. 7:13 |
| Section 401 of the Clean Water Act                                 | Erosion and Sedimentation                          | Warren County Conservation District                                                                                     | A soil erosion and sedimentation control plan has been prepared under standards of NJ Soil Erosion and Sediment Control Act, Ch 251, P.L. 1975                                                                                                                                                |
| Section 7 of the Endangered Species Act                            | Federally-listed threatened and endangered species | U.S. Fish and Wildlife Service                                                                                          | Consultation in 2015 and 2020 determined that effects to listed species would be fully mitigated through timing restrictions and best management practices. No further consultation or permitting is necessary.                                                                               |
| NJ Permanent Statute Title 23                                      | Fish                                               | New Jersey Division of Fish and Wildlife                                                                                | A fish salvage plan for when the ponds and stream are dewatered is being developed in consultation with the state.                                                                                                                                                                            |
| NJ Permanent Statute Title 23                                      | State-listed threatened and endangered species     | NJDEP                                                                                                                   | Mitigations to avoid and minimize take of protected species are being developed in consultation with the state.                                                                                                                                                                               |
| Section 106 of the National Historic Preservation Act              | Cultural resources                                 | NJDEP, Advisory Council on Historic Preservation, the Delaware Nation, Delaware Tribe, the Stockbridge-Munsee Community | Consultation regarding impacts to archeological and aboveground resources.                                                                                                                                                                                                                    |

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The following interest groups, stakeholders, and agencies were contacted to participate in a NEPA focus group meeting held on May 21, 2016 during the proposed project's pre-planning period:

- Appalachian Mountain Club – Mohican Outdoor Center
- Appalachian Trail Conservancy
- Camp No-Be-Bos-Co
- Delaware River Fishermen's Association
- Delaware Riverkeeper Network
- Friends of Delaware Water Gap National Recreation Area
- Hardwick Township
- Millbrook Village Society
- New Jersey Anglers Club
- New Jersey Natural Land Trust
- New York/New Jersey Trails Conference
- NJ State Federation of Sportsmen's Clubs
- Pocono Environmental Education Center
- The Nature Conservancy – NJ Field Office
- Trout Unlimited, North Jersey Chapter
- Warren County
- Worthington State Forest

## 5: DEFINITIONS

### 5.1 ACRONYMS

|       |                                                   |
|-------|---------------------------------------------------|
| CEQ   | Council on Environmental Quality                  |
| CFR   | Code of Federal Regulations                       |
| DBH   | diameter at breast height                         |
| DO    | Director's Order                                  |
| EA    | Environmental Assessment                          |
| EIS   | Environmental Impact Statement                    |
| EJ    | Environmental Justice                             |
| EO    | Executive Order                                   |
| FEMA  | Federal Emergency Management Agency               |
| HPPS  | Historic Properties Prioritization Strategy       |
| NEPA  | National Environmental Policy Act                 |
| NHPA  | National Historic Preservation Act                |
| NJDEP | New Jersey Department of Environmental Protection |
| NJHPO | New Jersey Historic Preservation Office/Officer   |
| NPS   | National Park Service                             |
| NRHP  | National Register of Historic Places              |
| NWI   | National Wetlands Inventory                       |
| PPL   | PPL Electric Utilities Corporation                |
| PSE&G | Public Service Electric and Gas Company           |
| ROD   | Record of Decision                                |
| SOF   | Statement of Findings                             |
| USACE | U.S. Army Corps of Engineers                      |
| USEPA | U.S. Environmental Protection Agency              |
| USFWS | U.S. Fish and Wildlife Service                    |

### 5.2 GLOSSARY

**Armoring (of stream bank)**

Reinforcement of a streambank with protective covering, such as boulders, root wads, and vegetation; or engineered materials (such as erosion control blankets, riprap, and gabion baskets) in order to reduce bank cutting and erosion due to peak flows.

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|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Consultation</b>      | Coordination, cooperation, and seeking concurrence with other federal, state, local, and tribal governments concerning actions and environmental impacts within the jurisdictions of, or of interest to those organizations.                                                                                                            |
| <b>Credit acre</b>       | A credit acre is a measure of ecological uplift that results from restoration work. For this project, a credit acre includes not just the restoration of wetlands themselves but also the restoration of other parts of the ecosystem that support wetlands such as the restoration of a stream, its floodplain, and native vegetation. |
| <b>Cumulative impact</b> | The incremental environmental impact of the an action, when added to the impacts of other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions.                                                                                         |
| <b>Dewatering</b>        | Removal of surface water (in the ponds and sections of the stream channel during work) by draining or pumping.                                                                                                                                                                                                                          |
| <b>Ecological uplift</b> | An improvement in the functionality of interactions between organisms and their environment, be it either individually or collectively within an ecosystem for a given area.                                                                                                                                                            |
| <b>Ecosystem</b>         | The complex of living organisms, their physical environment, and all their interrelationships in a particular area.                                                                                                                                                                                                                     |
| <b>Emergent Wetland</b>  | Wetlands characterized by erect, rooted, herbaceous (non-woody) hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants, including grasses and sedges.                                                             |
| <b>Erosion</b>           | The action of water, wind, or other natural processes that removes soil, rock, or other material from one location and transports it to another location.                                                                                                                                                                               |
| <b>Floodplain</b>        | The lowland that borders a stream or river, usually dry but subject to flooding.                                                                                                                                                                                                                                                        |
| <b>Forested wetland</b>  | A palustrine wetland is dominated by woody vegetation that is 6 m (19.6 feet) tall or taller.                                                                                                                                                                                                                                           |

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|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hydrology</b>           | The movement, distribution and management of water, including the water cycle, water resources and environmental watershed sustainability.                                                                                                                                                                                                                               |
| <b>Hydraulics</b>          | The mechanics of the flow and its effect on bed, banks, and structures.                                                                                                                                                                                                                                                                                                  |
| <b>Impact topics</b>       | Headings used in this document that represent specific resources that would be affected by the proposed action or consequences of not taking action.                                                                                                                                                                                                                     |
| <b>Invasive species</b>    | A non-native organism whose introduction causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health                                                                                                                                                                                                                          |
| <b>Issues</b>              | Problems, concerns, conflicts, obstacles, or benefits that would result if the proposed action is implemented or if no action is taken (the current conditions continue).                                                                                                                                                                                                |
| <b>Mitigate/Mitigation</b> | Actions taken to avoid an impact altogether, minimize the degree or magnitude of the impact, reduce the impact over time, rectify the impact, or compensate for the impact.                                                                                                                                                                                              |
| <b>Non-native species</b>  | Non-native species are those that have occurred outside of their natural range. That natural range could be as far as another country or as near as a different region of the same country. Unlike invasive species, non-native species may not hinder or prevent the survival of others within the ecosystem. They simply exist where they have not naturally occurred. |
| <b>Palustrine wetland</b>  | Palustrine systems include all nontidal wetlands dominated by trees, shrubs, persistent grasses, emergent mosses or lichens. This type of wetland encompasses most wetlands also referred to as marshes, swamps, bogs, fens.                                                                                                                                             |
| <b>Peak flow</b>           | The maximum rate of discharge during the period of runoff caused by a storm.                                                                                                                                                                                                                                                                                             |
| <b>Scrub-shrub wetland</b> | A palustrine wetland dominated by woody vegetation less than 6 meters (19.6 feet) tall.                                                                                                                                                                                                                                                                                  |

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|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Salvage (of fish)</b>     | Capturing fish through means such as electroshocking or netting, and (for this project) transporting them to a different location.                                                                                                                                                                                                                                                                                                       |
| <b>Scouring</b>              | Mobilization/fluctuations in the vertical position of the bed of a stream as material is eroded and degrades.                                                                                                                                                                                                                                                                                                                            |
| <b>Seasonal restrictions</b> | Restrictions on the time of year that certain types of construction can occur, in order to protect certain species from direct or indirect harm.                                                                                                                                                                                                                                                                                         |
| <b>Sedimentation</b>         | Loose sand, silt, clay, and other materials that become suspended in water and either transported to a different location (via a stream) or settle to the bottom (such as in a pond).                                                                                                                                                                                                                                                    |
| <b>Spoils</b>                | Material, such as soil and rock, that is excavated during grading work and is excess to the needs of the project and (in this project) taken offsite.                                                                                                                                                                                                                                                                                    |
| <b>Staging area</b>          | An area during construction that is used for the storage of construction-related equipment and materials such as vehicles and stockpiles.                                                                                                                                                                                                                                                                                                |
| <b>Wetland</b>               | <p>An area that has one or more of the following three attributes:</p> <ol style="list-style-type: none"><li>1. at least periodically, the land supports predominantly hydrophytes (wetland vegetation);</li><li>2. the substrate is predominantly undrained hydric soil; or</li><li>3. the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.</li></ol> |

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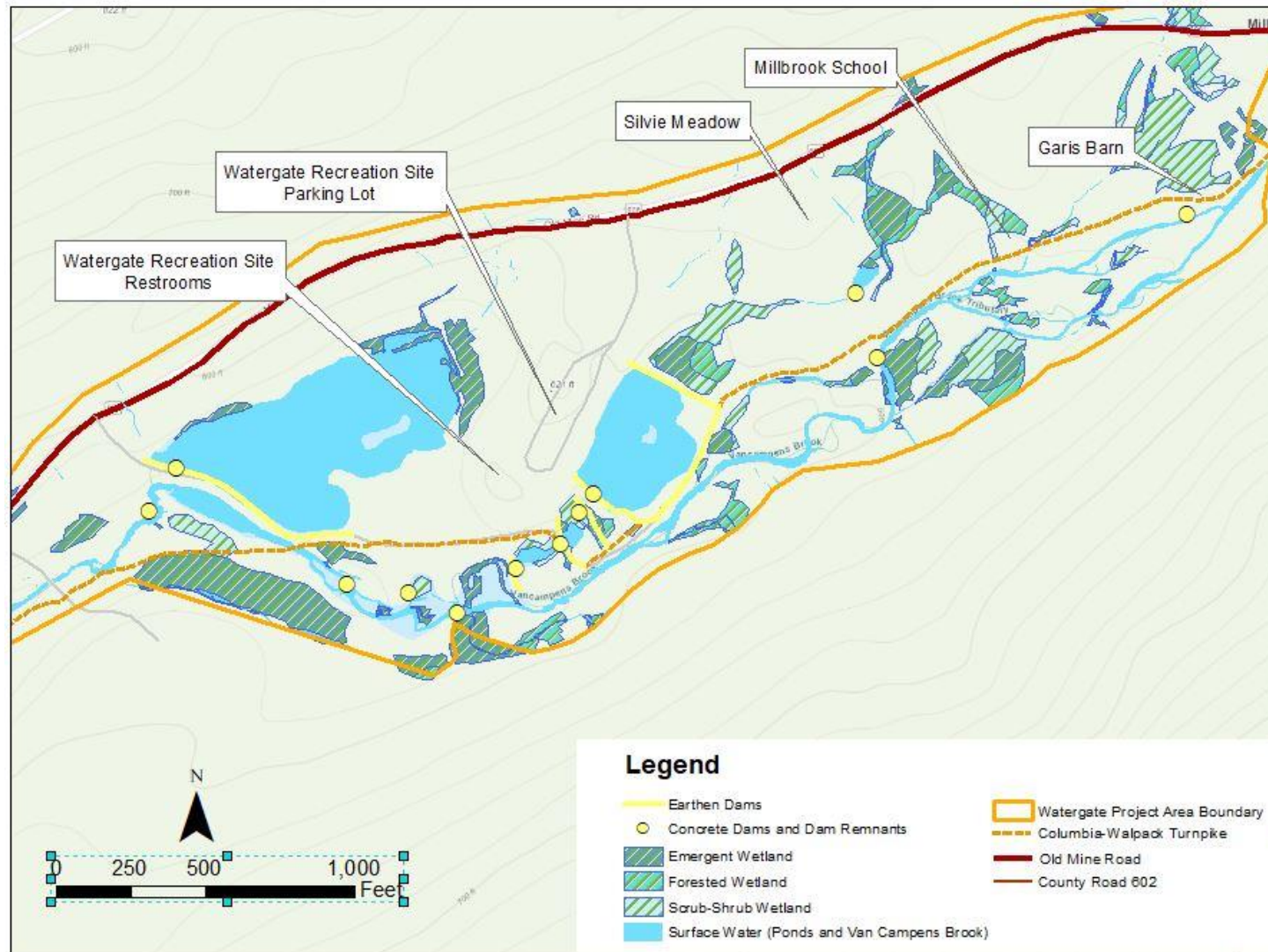
**Walter, Robert C., and Dorothy. J. Merritts**

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- 2020a Sheridan, Kevin, and Courselle, Amber. *Cultural Resources Report, Monitoring Plan, and Mitigation Plan for the Watergate Wetlands Restoration Project, Delaware Water Gap National Recreation Area*. Prepared on behalf of the National Park Service. May 2020.
- 2020b *Watergate Wetlands Restoration Project: Basis of Design Report*. Prepared on behalf of the National Park Service. May 2020
- 2020c *Watergate Wetlands Restoration Project: Evolution of Planned Wetlands Report* Prepared on behalf of the National Park Service. May 2020.
- 2020d *Watergate Wetlands Restoration Project: Hydrologic and Hydraulic Assessment Report*. Prepared on behalf of the National Park Service. May 2020.
- 2020e *Watergate Wetlands Restoration Project: Invasive Plant Species Treatment Plan*. . Prepared on behalf of the National Park Service. May 2020.
- 2020f *Watergate Wetlands Restoration Project: Reference Site and Reference Reach Report*. Prepared on behalf of the National Park Service. May 2020.
- 2020g *Watergate Wetlands Restoration Project: Wetlands Delineation Report*. Prepared on behalf of the National Park Service. May 2020.

## **APPENDIX A: DETAILED MAPS**

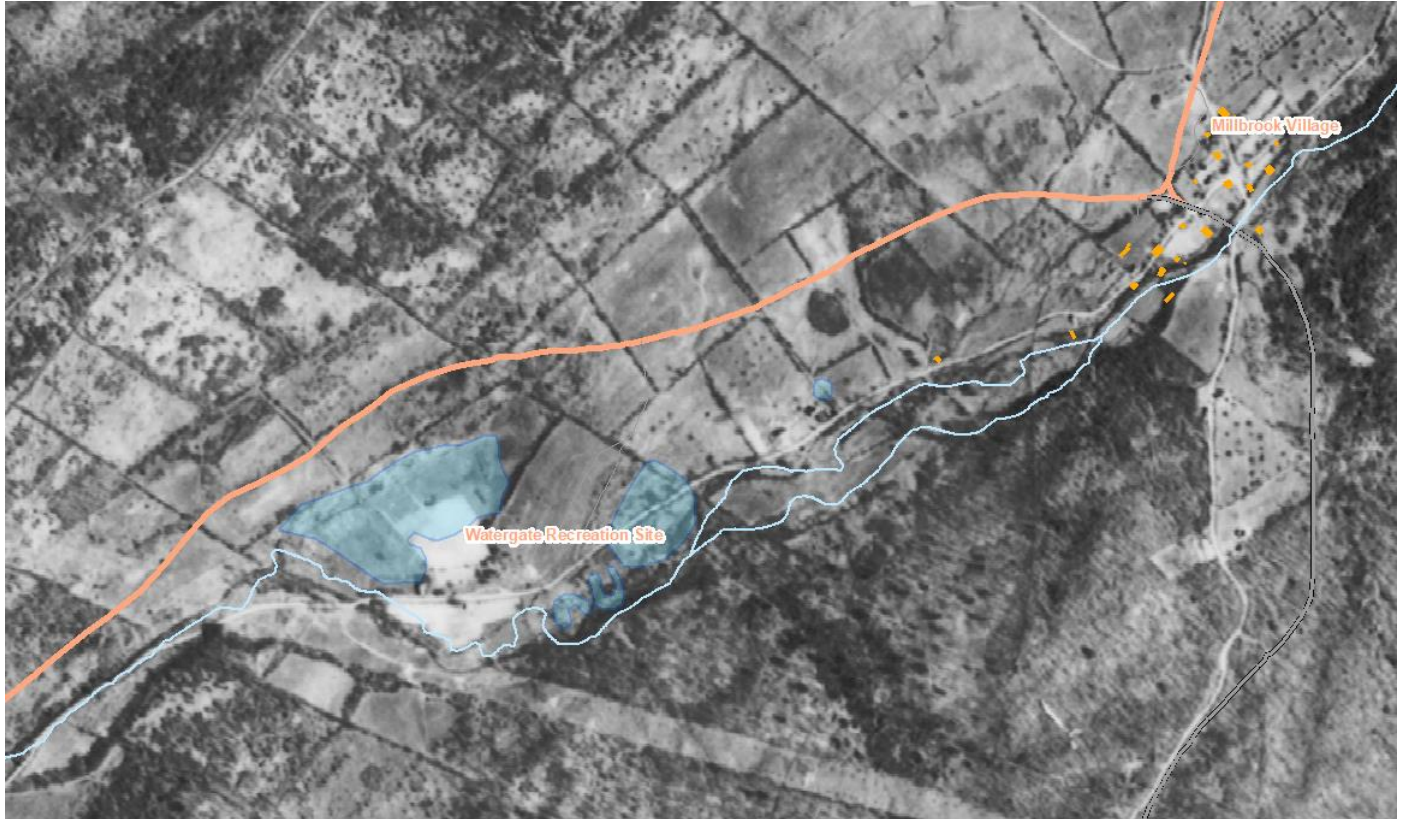
**Appendix A, Figure 1: Existing wetlands within the project area**

There are three types of wetlands present onsite, but all are poor- to medium-quality. This project would restore 20 acres of medium- to high-quality wetlands.

A historical map of the Millbrook area. The map features several landmarks and trails. At the top, 'Spring 0' is marked. Below it, 'Old Tannery' and 'Hotel' are labeled. The central part of the map shows 'MILLBROOK P.O.' and 'J. Howell'. To the right, 'Millbrook Mill' is marked. The bottom left shows 'Van Campen'. A 'Watergate' is indicated in the center. Trails include the 'Hilton Ridge Trail' (green dashed line) and 'Spring 0' (red dashed line). Other landmarks include 'Schoolhouse' (yellow square), 'Otto Nehland Hse' (yellow square), and 'C. Welles' (red square). The map also shows 'J. A. Stickles' and 'C. Welles'.

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**Appendix A, Figure 3: Aerial photo from 1930, with an overlay of current features in the project area.**



This aerial photo from 1930 highlights the use of the project area as agricultural land. Van Campens Brook, which in the Figure 2 map had been running through where the largest pond now is, has been moved to its current position (south of where it was previously). The Susquehanna-Roseland Transmission Line right-of-way, constructed in 1929, is evident as the cleared area running diagonally across the lower left of the photo. The Columbia-Walpack Turnpike is the sinuous lighter-colored line that runs diagonally through the photo from lower left to upper right. Old Mine Road had not been built in its current alignment yet, but was constructed later in the 1930s. The current features are overlaid in color, including Old Mine Road (peach color) ponds and streams (in blue), and buildings (in orange).

**Appendix A, Figure 4: Aerial photo from 1970, showing the change from agricultural use to recreational use.**



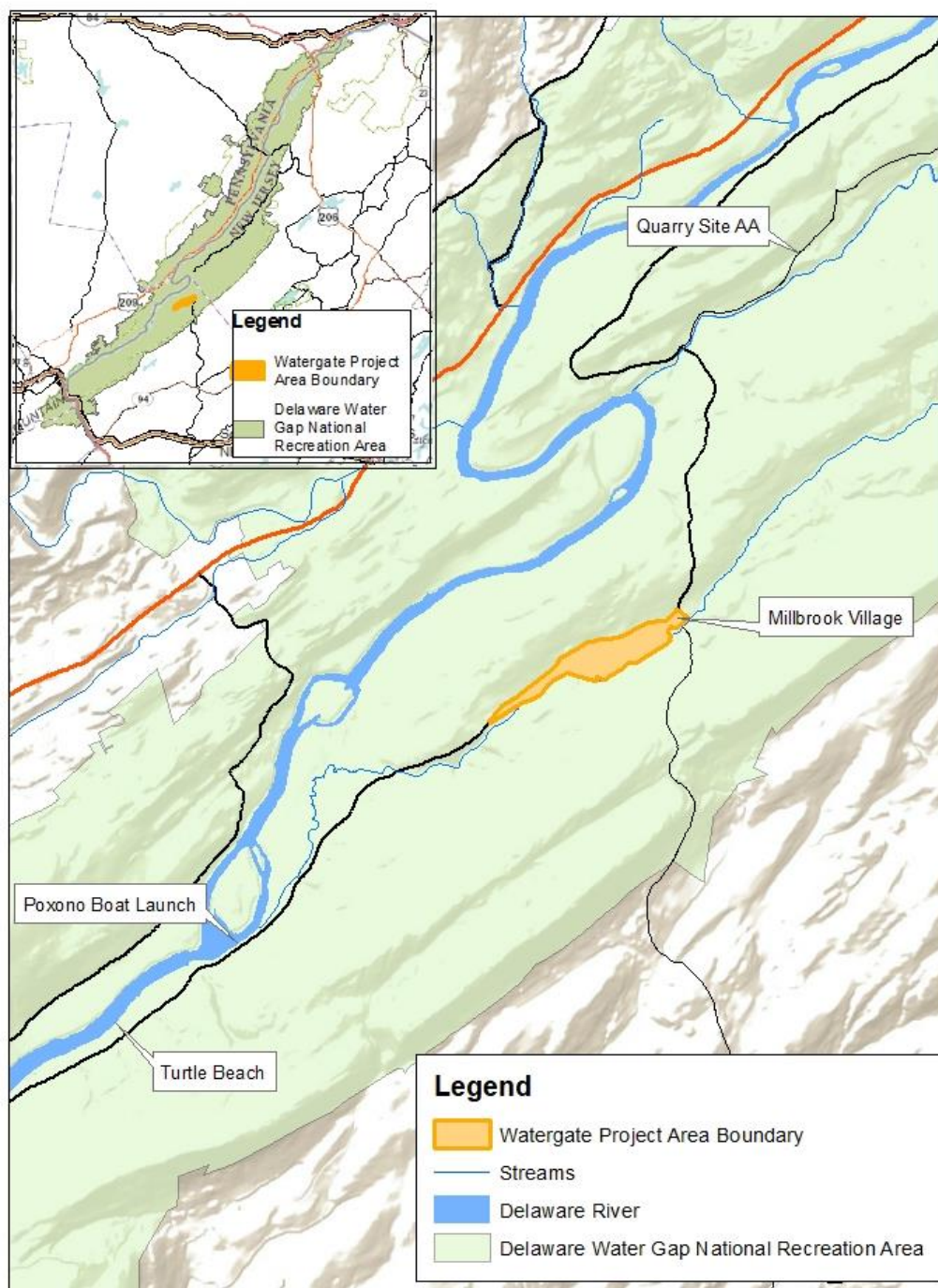
This aerial photo from 1970 shows that a transition in land use has occurred from agricultural to recreational (vacation homes and properties). The agricultural fields are mostly gone, and the property owners have excavated the largest pond, dammed Van Campens Brook to create smaller ponds, and created a large mowed/maintained landscape. The Susquehanna-Roseland Transmission Line right-of-way is evident as the cleared area running diagonally across the lower third of the photo. The Columbia-Walpack Turnpike is still present, shown in the middle of the photo, but its alignment and characteristics have changed—it is no longer the main travel route through the valley, because Old Mine Road (top third of photo) has been built in its current alignment.

**Appendix A, Figure 5: Watergate Recreation Site, present-day aerial photo**



This 2019 aerial photograph shows conditions at the present-day Watergate Recreation Site. Some of the smaller ponds on Van Campens Brook have been lost to flooding. Some of the mowed/maintained landscape seen in the 1970 photo continued to be maintained as such since federal acquisition of the property around 1980, and is currently used as a picnic area. The houses and driveways were removed, and a parking lot and restroom building were added.

**Appendix A, Figure 6: Map of locations where soil/rock spoils and salvaged fish would be placed.**



Excess soil and rock (spoils) from the project would be trucked 2 miles to the north and used to fill in an abandoned quarry (Quarry Site AA). Salvaged fish would be trucked to the nearest location within the watershed that would not adversely affect native aquatic fauna—most likely, Poxono Boat Launch on the Delaware River, 3.5 miles south of the project area.

## **APPENDIX B: PHOTOS**

## Photo Key

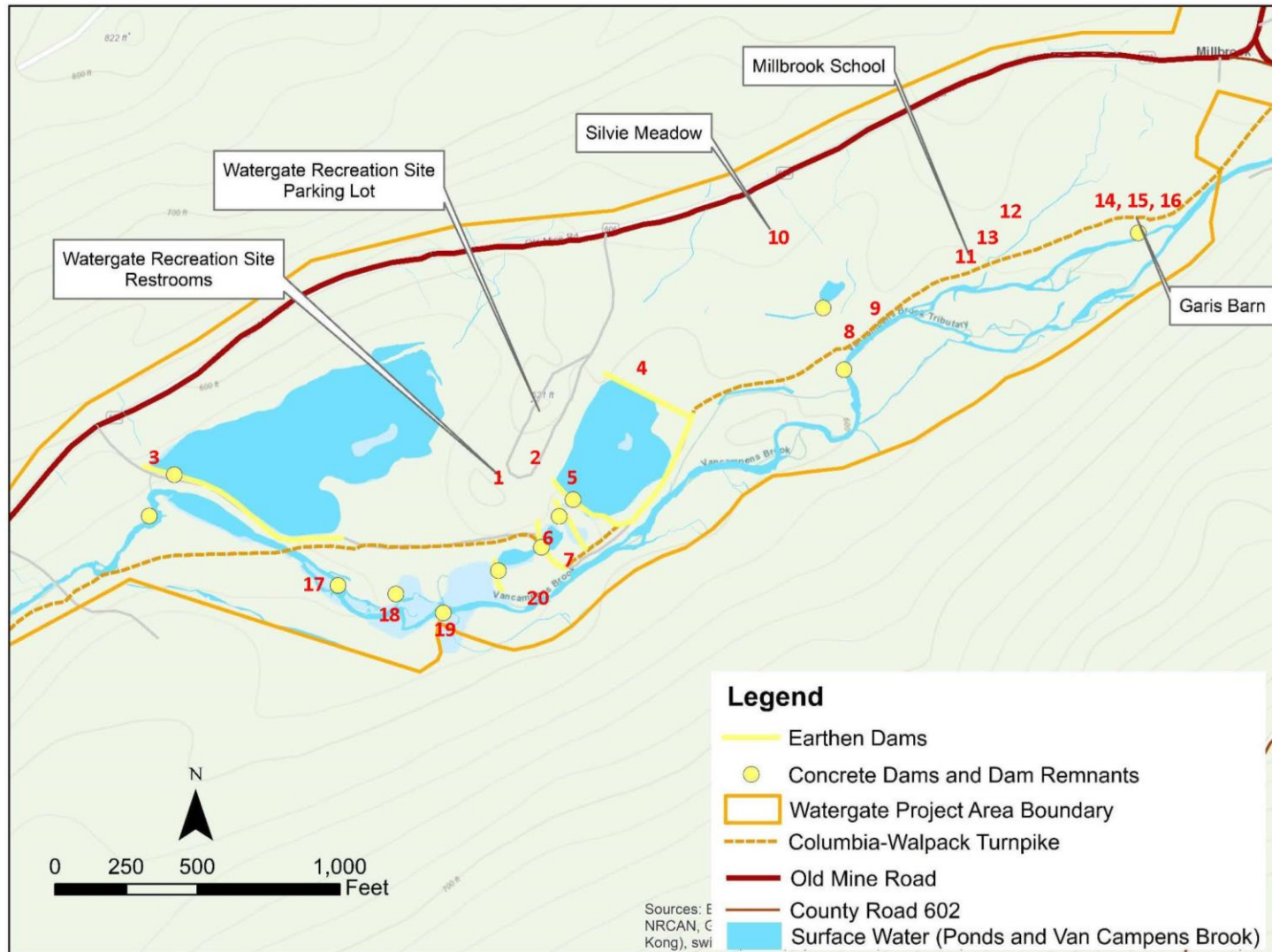




Photo 1: Overview of main area of Watergate Recreation Site. Photo taken from septic mound. Note picnic tables, large mowed lawn, and pond. The Susquehanna-Roseland Transmission Line is in the background.

The lawn and pond would be converted into wetlands.



Photo 2: The restroom building and one of the concrete staircases, just below the parking lot.

These features would remain unchanged.



Photo 3: Looking back towards the Watergate Recreation Site (center left of photo), standing on earthen dam of largest pond. Van Campens Brook is to the right of the dam.

The pond would be dewatered prior to removal of the dam. The pond and dam would be converted to wetlands, and would be at the same elevation as Van Campens Brook in order to restore the floodplain.



Photo 4: The second-largest pond in the project area in July 2020. The utility line that would be relocated is visible above the pond.

The pond would be dewatered prior to the removal of the earthen dam (left side of photo), and the area restored as wetlands.



Photo 5: The low, earthen dam that forms the second-largest pond.

This would be removed and the area restored as wetlands.



Photo 6: The small pond just to the south of the second-largest pond.

This area would be graded to restore wetlands.



Photo 7: The Columbia-Walpack Turnpike. A channel of Van Campens Brook is just to the right of the road, and a wetland is just to the left of the road.

The road acts as a levee. Removing it and restoring natural grades would reconnect Van Campens Brook with its floodplain (including the wetland).



Photo 8: The Columbia-Walpack Turnpike on the right, and Van Campens Brook on the left. The stream frequently avulses (jumps its banks) after rainfall in this section, eroding the roadbed.

This section of road would be removed. Doing so would allow the stream to function properly; it would be reconnected with its floodplain and the energy of flood flows would be able to dissipate more than at present.



Photo 9: The Columbia-Walpack Turnpike. Van Campens Brook is to the right and behind the non-native shrubs. The stream frequently avulses (jumps its banks) after rainfall in this section, eroding the roadbed and leaving behind cobble.

This section of road would be removed. Doing so would allow the stream to function properly; it would be reconnected with its floodplain and the energy of flood flows would be able to dissipate more than at present.



Photo 10: Silvie Meadow. This field is mowed and used as overflow parking for two events at Millbrook Village per year. The meadow would be used as a staging area during construction and closed to visitors. Overflow parking is available at several other locations nearby, so its closure would have no effect to visitors.



Photo 11: Millbrook School. Due in part to its remote location and difficulty in patrolling the area, the school has been vandalized. It is no longer accessible by road from Millbrook Village—access was via the Columbia-Walpack Turnpike, which (as shown above) was heavily damaged by flooding.

A road, dating from 1860 or older, would be re-established between the school and Old Mine Road to allow for administrative vehicle access. A hiking trail would be established from Millbrook Village to the school.



Photo 12: Millbrook Cemetery, a private inholding adjacent to the project area. Note Garis Barn in the background.



Photo 13: The path from Millbrook School to Millbrook Cemetery. Note Millbrook School in the background.



Photo 14: Garis Barn, north façade. Note collapsed (modern) lean-to. The barn is in the Van Campens Brook floodplain. Removing the first-floor exterior clapboard siding would allow floodwaters to flow through the building, rather than against it. This will allow for the long-term preservation of the building in its current location.



Photo 15: The Columbia-Walpack Turnpike near Garis Barn. It was damaged during flood events from 2004-2011 and has become impassable to most park visitors. As in the photo above, the road is between Van Campens Brook and a wetland.

Removing this section of road would reconnect Van Campens Brook with its floodplain (including the wetland).

## WATERGATE WETLANDS RESTORATION PROJECT

### Environmental Assessment

Photo 16 (series of 4 photos): Original condition of barn (note lack of lean-to and pond) and damage following two flood events. In the photo labeled 2011a, note cobble piled up against the north façade of the barn from the flood event in Van Campens Brook.



Undated  
photo  
(1970s-  
1980s)



2006



2011a



2011b



Photo 17: Mass wasting of a bank on Van Campens Brook within the Susquehanna-Roseland Transmission Line right-of-way.

This bank would be armored (stabilized) to prevent the stream from cutting further into the right-of-way, which would reduce erosion, prevent habitat loss for state-listed species, and allow vegetation to re-grow which would provide shade over the stream and reduce its temperature.

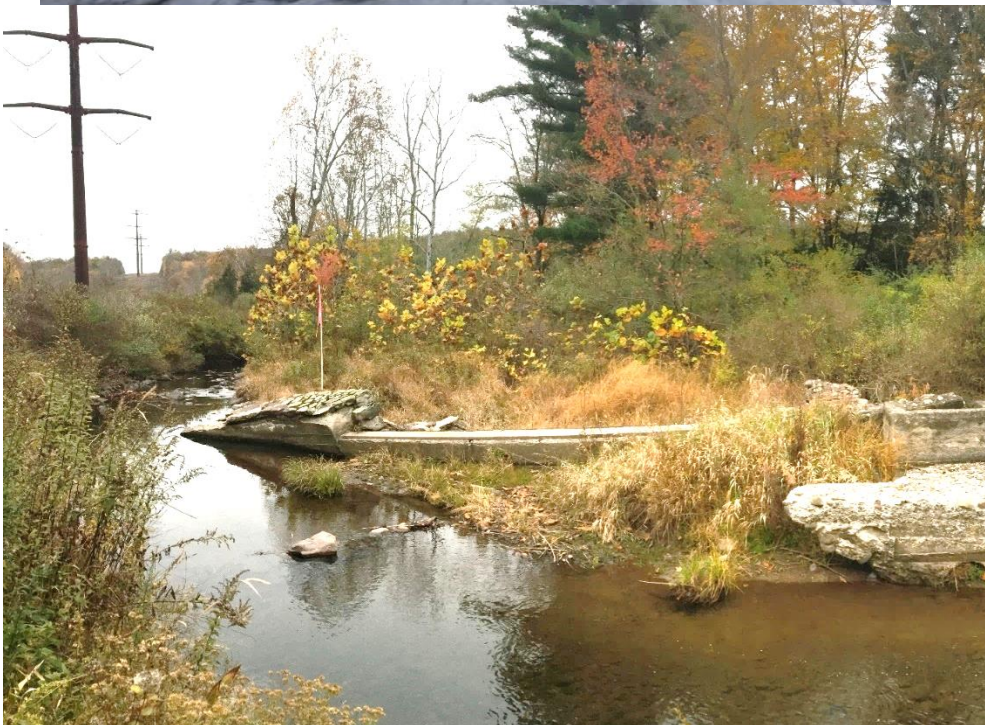


Photo 18: Remnants of a dam in Van Campens Brook. The dam still constrains the brook, preventing the stream's hydraulics from functioning naturally.

This concrete dam remnant would be removed.



Photo 19: Another example of remnants of a concrete dam in Van Campens Brook. The dam still constrains the brook, preventing the stream's hydraulics from functioning naturally.

This concrete dam remnant would be removed.



Photo 20: Mass wasting of a bank (right side of photo) upstream of the dam in the above photo.

This bank would be stabilized, which would reduce erosion, prevent habitat loss for state-listed species, and allow vegetation to re-grow which would provide shade over the stream and reduce its temperature.

## **APPENDIX C: DRAFT MEMORANDUM OF AGREEMENT**

**MEMORANDUM OF AGREEMENT**

**BETWEEN**

**DELAWARE WATER GAP NATIONAL RECREATION AREA**

**AND THE**

**NEW JERSEY HISTORIC PRESERVATION OFFICE**

**REGARDING THE WATERGATE WETLANDS RESTORATION PROJECT  
HARDWICK TOWNSHIP, WARREN COUNTY, NEW JERSEY**

**WHEREAS** the Delaware Water Gap National Recreation Area (“the park”) proposes to restore wetlands and the natural function of a stream and its floodplain by removing man-made dams, levees, impoundments, a road, and a portion of a building; and re-grading the site to restore wetlands and proper stream and floodplain function; and

**WHEREAS**, the park has defined the undertaking's area of potential effect (APE) as an area of 114 acres within and near the Watergate Recreation Site (see map, Attachment A); and

**WHEREAS** the park has determined that the undertaking may have an adverse effect due to impacts to the Millbrook School property, which is listed in the National Register of Historic Places as a contributing resource to Old Mine Road Historic District; and to the Garis Barn and the Columbia-Walpack Turnpike, which are eligible for listing in the National Register of Historic Places, and has consulted with the New Jersey Historic Preservation Officer pursuant to 36 C.F.R. part 800, of the regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f); and

**NOW, THEREFORE**, the park and the New Jersey Historic Preservation Office (HPO)

agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

## **STIPULATIONS**

The park shall ensure that the following measures are carried out:

- I.** A hiking trail between Millbrook Village and Millbrook School would be established to restore pedestrian access for visitors.
- II.** A road between Millbrook School and Old Mine Road, constructed prior to 1860 but unused for decades, would be put back into use in order to restore vehicular access that would be used for special circumstances, such as preservation maintenance campaigns.
- III.** The alignment, dimensions, and roadbed material profile of the Columbia-Walpack Turnpike would be documented prior to its removal.
- IV.** Photographic and/or video documentation of the exterior and interior of the Garis Barn would be completed prior to construction and made available to the public.
- V.** The lower 6-10' of exterior wooden clapboards would be removed from the Garis Barn in order to would allow floodwater to flow through, not against, the Garis Barn, enabling the building to be preserved in place, rather than demolished by floods, demolished by the NPS, or relocated to a different site.
  - a. Exterior wooden clapboards would be preserved/accessioned and could be reinstalled if circumstances allow.
  - b. The collapsing lean-to, a modern (1980s) addition, would be removed.

## **IV. DURATION**

This MOA will expire if its terms are not carried out within three (3) years from the date of its execution. Prior to such time, the park may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation VIII below.

## **VI. MONITORING AND REPORTING**

Within three (3) years following the execution of this MOA until it expires or is terminated, the

park shall provide the HPO a summary report detailing work undertaken pursuant to its terms.

## **VII. DISPUTE RESOLUTION**

Should any signatory or concurring party to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, the park shall consult with such party to resolve the objection. If the park determines that such objection cannot be resolved, the park will:

A. Forward all documentation relevant to the dispute, including the park's proposed resolution, to the ACHP. The ACHP shall provide the park with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the park shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. the park will then proceed according to its final decision.

B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, the park may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the park shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.

C. The park's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

## **VIII. AMENDMENTS**

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

## **IX. TERMINATION**

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation **VIII**, above. If within thirty (30) days an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, the park must either (a) execute a MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. The park shall notify the signatories as to the course of action it will pursue.

## **X. ANTI-DEFICIENCY**

All actions taken by the park in accordance with this MOA are subject to the availability of funds, and nothing in this MOA shall be interpreted as constituting a violation of the Anti-Deficiency Act.

Execution of this MOA by the park and HPO and implementation of its terms evidence that the park has taken into account the effects of this undertaking on historic properties and afforded the Advisory Council on Historic Preservation an opportunity to comment.

## **SIGNATORIES:**

### **Delaware Water Gap National Recreation Area**

\_\_\_\_\_ Date  
**Sula Jacobs, Superintendent**

**New Jersey Historic Preservation Office**

\_\_\_\_\_ Date  
**Catherine McCabe, Historic Preservation Officer**