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**National Park Service  
U.S. Department of the Interior**



**Chesapeake and Ohio Canal National Historical Park  
Maryland**

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## **Catoctin Aqueduct Restoration**

**Finding of No Significant Impact**

**June 2009**

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### **BACKGROUND**

The National Park Service proposes to restore the Catoctin Aqueduct (also referred to as the Catoctin Creek Aqueduct), which is located at Milepost 51.5 of the Chesapeake and Ohio Canal National Historical Park (C&O NHP) near Lander, in Frederick County, Maryland. The restoration will be accomplished in partnership with Catoctin Aqueduct Restoration, Inc. and the Community Foundation of Frederick County, who are conducting fundraising to assist in the restoration.

Stretching 184.5 miles alongside the Potomac River between the nation's capital and Cumberland, Maryland, the C&O Canal NHP preserves remnants of America's transportation history. The C&O Canal is the most intact example of the American canal-building era and is listed in the National Register of Historic Places as a historic district. The Catoctin Aqueduct, which was constructed from 1832 to 1834, served as part of the C&O Canal system and once carried the canal's waters over Catoctin Creek. It is listed in the National Register of Historic Places as a ruin and is on the National Park Service List of Classified Structures (identification number 011663). The Catoctin Aqueduct, along with many other components of the C&O Canal, fell into disrepair when the C&O Canal Company ceased operations in 1924. A considerable portion of the aqueduct collapsed in 1973.

The purpose of the action is to preserve the historic integrity of the Catoctin Aqueduct ruins and to enhance the continuity of the C&O Canal towpath, the interpretive value of the Catoctin Aqueduct, and the understanding of the canal's history by visitors. The action is needed to help fulfill the overall purpose of the National Park Service and C&O Canal NHP.

The National Park Service prepared an environmental assessment for the proposed Catoctin Aqueduct restoration in accordance with the National Environmental Policy Act of 1969, regulations of the Council on Environmental Quality (40 Code of Federal Regulations 1508.9), the National Historic Preservation Act of 1966 (as amended), and National Park Service *Director's Order #12: Conservation Planning, Environmental Impact Analysis and Decision-making*.

## **PREFERRED ALTERNATIVE**

The Preferred Alternative (Alternative C) will restore the Catoctin Aqueduct in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. The structure will be restored to the original design, to the extent feasible, and in a manner that is structurally sound and sustainable. The Preferred Alternative will involve reconstructing the collapsed center and west arches with reinforced concrete and facing them with stones, but the undersides of the concrete arches will be textured with a form-liner and tinted to provide visual compatibility. From a distance, the undersides of the arches will have the general appearance of stone, but the concrete will be readily recognizable up close. The treatments applied to the undersides of the concrete arches are not intended to mimic stone work. Other specific elements of the Preferred Alternative will include the following:

- Original stones recovered following the collapse will be used to the maximum extent possible. Additional stones that match the existing stones will be acquired, as needed, to replace stones that are not available or are in poor condition. Any unused original stone will continue to be protected at the Catoctin Aqueduct site and managed in accordance with Sections 106 and 110 of the National Historic Preservation Act.
- The aqueduct's severely deteriorated west pier and footing will be removed and reconstructed. Scour under and around the existing aqueduct abutments and piers will be repaired.

- The aqueduct berm and towpath parapets will be rebuilt and topped with original coping stones, many of which are available. Other remaining portions of the structure (east arch and wing walls) will be repaired, stabilized, and restored, as needed.
- A railing compatible with the appearance of the original railing will be installed along the aqueduct's towpath. Where appropriate, portions of the original wrought iron railing will be incorporated into the work. The railing will meet required safety codes and the center section (approximately 100 feet) will be removable to avoid damage during flooding.
- The existing non-historic Bailey bridge will be removed and its components salvaged.
- The towpath will be returned to its original alignment with the aqueduct's towpath following removal of the Bailey bridge. Permanent transitional ramps will be constructed from the towpath to the canal/aqueduct prism to allow maintenance/emergency vehicles, equestrians, and bicyclists to cross Catoctin Creek via the aqueduct prism following restoration and removal of the Bailey bridge. The transitional ramps will be similar in design and appearance as other transitional ramps that occur at most aqueduct crossings in the park.
- The pedestrian bridge abutment and associated stone wall on the west bank of Catoctin Creek will be removed. Imbricated rip-rap will be installed in this area to stabilize the creek bank.
- The pedestrian bridge abutment on the east bank of Catoctin Creek will remain in place and minor improvements will be made so it can serve as a viewing platform for the restored aqueduct.
- Temporary equipment access roads, staging areas, and work areas will be established during construction and restored upon completion of the project.
- Selective vegetation clearing will be necessary to construct the permanent transitional ramps within the canal prism. Areas cleared within the canal prism will be planted in grass and maintained through mowing to allow visitors to see the canal prism and aid in interpretation of the aqueduct.
- Mitigation measures outlined in Table 1 will be used to prevent or minimize potential adverse effects associated with the Preferred Alternative.

## ALTERNATIVES CONSIDERED

In addition to the Preferred Alternative (Alternative C), the National Park Service analyzed the following alternatives in the environmental assessment:

- **Alternative A, the No Action Alternative** – This alternative is the continuation of current maintenance of the Catoctin Aqueduct. The National Park Service would respond to future needs and conditions associated with the aqueduct without major actions or changes from the present course if this alternative were selected.
- **Alternative B, Stone Masonry Arches** – This alternative would involve restoring the Catoctin Aqueduct by reconstructing the collapsed center and west arches with stone masonry construction similar to the original, including barrel arch stones. The original elliptical shape of the center arch has an inherent structural weakness. This structural weakness would be rectified by installing an internal, reinforced concrete saddle over both arches. Construction of the saddle would increase the height of the aqueduct prism by one foot and would result in a one-foot reduction in the height of the towpath and berm, as measured from the top of the prism. Original stones recovered following the collapse would be used to the maximum extent possible. Other elements of Alternative B would be the same as the Preferred Alternative.

In addition to Alternatives A, B, and C described above, the park staff considered the following alternatives, but eliminated them from further consideration because they were not practical or feasible, or did not fully meet the purpose of the action. As such, these alternatives were not carried forward for detailed analysis in the environmental assessment:

- Restore the Catoctin Aqueduct to its exact original condition and geometry, using historic materials only. This alternative is not feasible because: (1) the elliptical center arch had an inherent structural weakness, (2) all of the original stones are not available, and (3) some of the original stones are no longer structurally sound. Slight changes to the aqueduct's original materials and/or geometry are necessary to provide a structurally sound and sustainable structure.
- Stabilize the Catoctin Aqueduct ruins without reconstructing the collapsed arches. Other stabilization methods do not fully meet the project objectives with

respect to historic preservation and enhancement of the cultural landscape. This alternative would not allow for removal of the Bailey bridge, because the stabilized aqueduct ruins would not provide a crossing over Catoctin Creek. In addition, analysis indicates that reconstructing the collapsed portions of the aqueduct is the most sustainable means of stabilization.

## **ENVIRONMENTALLY PREFERRED ALTERNATIVE**

The environmentally preferred alternative is the alternative that will best promote policies expressed in the National Environmental Policy Act. The environmentally preferred alternative will cause the least damage to the biological and physical environment and will best protect, preserve, and enhance historical, cultural, and natural resources. Section 101(b) of the National Environmental Policy Act identifies the following six criteria to help determine the environmentally preferred alternative:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
2. Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.
3. Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences.
4. Preserve important historical, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice.
5. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities.
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Continuing the current conditions under Alternative A (No Action) would have less impact on natural resources compared to the action alternatives because no construction

activities would occur and land and water resources would not be disturbed. However, the Catoctin Aqueduct would continue to be susceptible to further deterioration under Alternative A. This alternative would not assure preservation of this important historic architectural resource for future generations.

Impacts on the natural environment would be similar under Alternatives B and C, and these impacts would be greater than Alternative A as a result of restoration activities that would disturb land and water resources. However, Alternatives B and C would achieve historic preservation, historical interpretation, and public safety benefits through restoration of the Catoctin Aqueduct. The primary differences between Alternatives B and C are the materials and methods used in aqueduct restoration. Both of the action alternatives have distinct advantages and disadvantages with respect to historic integrity of the restored aqueduct, but the difference between the alternatives is minor.

The Preferred Alternative (Alternative C) will involve reconstructing the collapsed center and west arches with reinforced concrete. This will rectify an inherent structural weakness in the original elliptical arch design. The reinforced concrete arches will be more structurally sound than the stone masonry arch design considered under Alternative B. Alternative C is considered the environmentally preferred alternative because it is more sustainable and involves less risk to the historic integrity of the Catoctin Aqueduct.

Alternative C addresses the criteria outlined above for the environmentally preferred alternative. Specifically, restoring the Catoctin Aqueduct under Alternative C will preserve important historical and cultural aspects of our national heritage for succeeding generations and will help the National Park Service fulfill its responsibilities as a trustee of the environment (criteria 1 and 4). Implementing Alternative C will also provide visitors with aesthetically and culturally pleasing surroundings, and will allow for a range of beneficial uses of the environment with minimal degradation, risk to health or safety, or other undesirable or unintended consequences (criteria 2 and 3). Furthermore, historic materials will be reused to the extent possible, while use of reinforced concrete arches will provide a structurally sound and sustainable solution (criterion 6).

## **WHY THE PREFERRED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT**

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

***1. Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts which require analysis in an environmental impact statement.***

The analysis presented in the environmental assessment indicates that the Preferred Alternative will have both beneficial and adverse effects, but on balance the effects will be beneficial. The beneficial effects will: preserve and enhance the historic architectural resources and the cultural landscape; improve visitor experience through better opportunities to interpret the C&O Canal's history; and eliminate existing safety risks associated with the aqueduct ruins. Localized, short- and long-term adverse effects were identified, ranging from negligible to moderate intensity. No major beneficial or adverse effects were identified that require analysis in an environmental impact statement.

***2. The degree to which the proposed action affects public health or safety.***

Public health and safety was an important issue addressed during development of the Preferred Alternative. Short-term, adverse effects of the Preferred Alternative to public health and safety will be negligible and localized because appropriate protective measures will be implemented during construction. Restoration of the Catocin Aqueduct will eliminate current safety risks associated with unstable portions of the aqueduct ruins and will result in long-term, beneficial effects to public health and safety.

***3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.***

The project site is located in the C&O Canal NHP and has unique characteristics, including historic and cultural resources, which are discussed below under criterion 8. As

described in the environmental assessment, prime farm lands, old growth forests, wild or scenic rivers, and ecologically critical areas will not be affected by implementing the Preferred Alternative. The Preferred Alternative will result in short- and long-term, minor, adverse effects to wetlands, wetland buffers, and waters of the U.S./State. The adverse effects will be localized. Permanent loss of jurisdictional wetlands is not expected to occur and the need to mitigate (create replacement wetlands) is not anticipated.

***4. The degree to which the effects on the quality of the human environment is likely to be highly controversial.***

The National Park Service has addressed potentially controversial effects associated with the Preferred Alternative. Collapsed portions of the aqueduct will be reconstructed to their historic configuration. As a result, the Catoctin Creek channel will return to its pre-1973 configuration at the aqueduct. Hydrologic and hydraulic modeling predicted increases in the water surface elevations for a Catoctin Creek 100-year storm event. Increases in the water surface elevations for a Catoctin Creek 100-year event will occur from the aqueduct to a point just downstream of the abandoned Boss Arnold Road Ford. This means that during the Catoctin Creek 100-year storm event, areas immediately adjacent to this section of the creek would be subjected to an increased risk of flooding compared to existing conditions. Predicted increases in water surface elevation would be greatest near the aqueduct, with values decreasing farther upstream. For example, the increase would be about 10.6 inches at a point just downstream of the CSX Railroad Bridge and only 2.6 inches at a point just downstream of the abandoned Boss Arnold Road Ford. Other than the Catoctin Aqueduct and CSX Railroad Bridge, no structures are located in the areas that would experience increased water surface elevations. The Federal Emergency Management Agency floodplain designation will not change. The National Park Service has submitted a *Joint Federal/State Application for the Alteration of any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland*. The Preferred Alternative will not be implemented until applicable permits and approvals have been issued by the Maryland Department of the Environment and U.S. Army Corps of Engineers. As specified by the Maryland Department of the Environment, the National Park Service has made affected property owners aware of the findings of the hydrologic and hydraulic analysis. All affected property owners provided written confirmation that they were made aware of the results and that they have no objections to the National Park Service's plan to restore the Catoctin Aqueduct.

***5. Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.***

There were no highly uncertain effects or unique or unknown risks identified during public scoping, preparation of the environmental assessment, or public review of the environmental assessment. As discussed above, flooding risks associated with increased water surface elevations along portions of Catoctin Creek have been analyzed and addressed. Alternative C was chosen because it is more sustainable and involves less risk to the historic integrity of the Catoctin Aqueduct.

***6. Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.***

The Preferred Alternative neither establishes a National Park Service precedent for future actions with significant effects nor will it represent a decision in principle about a future consideration.

***7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.***

The cumulative effects analysis presented in the environmental assessment indicates that the Preferred Alternative will not result in cumulatively significant impacts when combined with other actions summarized in the cumulative impact scenario.

***8. Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.***

The C&O Canal is listed in the National Register of Historic Places as a historic district. The Catoctin Aqueduct is a contributing element to the historic district and is listed in the National Register of Historic Places as a ruin. The Preferred Alternative will result in both adverse and beneficial effects to cultural resources. The effects on archeology will be long-term, negligible, adverse, and localized. All of the short- and long-term adverse effects on the

cultural landscape and architectural resources will be minor and localized. The overall integrity of the cultural landscape and architectural resources will not be diminished. Restoration of the Catoctin Aqueduct, removal of the Bailey bridge, and clearing vegetation in the canal prism will noticeably enhance the cultural landscape and architectural resources, resulting in long-term, beneficial effects to these resources.

The National Park Service determined, with concurrence from the Maryland Historical Trust in a letter dated June 18, 2008, that pursuant to regulations implementing Section 106 of the National Historic Preservation Act (36 Code of Federal Regulations 800), the Preferred Alternative will have no adverse effect on historic properties eligible for or presently listed on the National Register of Historic Places.

***9. Degree to which the action may adversely affect an endangered or threatened species or its critical habitat.***

The Preferred Alternative will have no effect on federally listed species or critical habitat designated under the Endangered Species Act. Mitigation measures (see Table 1) developed in consultation with the Maryland Wildlife and Heritage Service will be implemented to avoid and minimize impacts to the state-listed white trout lily (state-listed threatened) and star-flowered Solomon's-seal (state-listed endangered). While some individual plants or habitat could be inadvertently damaged or destroyed, the Preferred Alternative will not affect the long-term viability of state-listed plant populations or the continued existence of state-listed species within or outside the park. The Preferred Alternative is expected to result in short-term, minor, adverse effects on individual state-listed plants and/or their habitat.

***10. Whether the action threatens a violation of federal, state or local environmental protection law.***

The Preferred Alternative will not violate any federal, state, or local environmental protection laws.

**TABLE 1 MITIGATION MEASURES FOR THE PREFERRED ALTERNATIVE**

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**Impact Topics and Mitigation Measures**

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**Soils, Surface Water, Floodplains, Wetlands, and Aquatic Life**

- An erosion and sediment control plan will be prepared and implemented in accordance with *Maryland Erosion and Sediment Control Guidelines for State and Federal Projects*. The plan will include resource protection measures that conform to *Maryland Standards and Specifications for Erosion and Sediment Control* and will be submitted to the Maryland Department of the Environment, Water Management Administration for approval. Coverage under Maryland's *General Permit for Construction Activity* will be obtained by submitting a Notice of Intent to the Maryland Department of the Environment.
- A geogrid base will be used for temporary access roads and staging areas to minimize soil disturbance and compaction. These areas will be restored with native vegetation upon completion of project.
- A *Joint Federal/State Application for the Alteration of any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland* will be submitted and applicable permits obtained from the Maryland Department of the Environment and U.S. Army Corps of Engineers prior to initiating work. All regulated activities within waters of the U.S. and waters of the State, including the 100-year floodplain and jurisdictional wetlands, will be conducted in accordance with permit conditions and *Maryland's Waterway Construction Guidelines*.
- Turbidity curtains, anti-washout admixture, and appropriate pumping rates will be used during underwater placement of cement grout or concrete to maintain instream pH levels below 8.5.
- All fuel storage, equipment refueling, and equipment maintenance will be accomplished in designated areas with secondary containment in accordance with National Park Service-approved procedures to avoid incidental spills. The contractor will be required to have contingency procedures in place to respond to incidental spills in accordance with federal, state, and local regulations and National Park Service policy. The contractor will remove all equipment and fuel from the area, as directed by National Park Service staff, if conditions indicate that flooding might occur.

**Vegetation**

- The limits of vegetation disturbance/clearing will be established by National Park Service staff prior to construction. These limits will be clearly noted on construction documents and marked in the field by National Park Service staff. Trees to be retained within the disturbance/clearing limits will be marked and National Park Service, National Capital Region *Guidelines for Tree Preservation* will be followed. Large trees will be retained to the maximum extent possible.
  - All cleared woody vegetation will be chipped and used as mulch within the park or disposed of accordingly, in accordance with plans established by National Park Service staff prior to removal.
  - Areas temporarily disturbed during construction (e.g., work areas, access roads, staging areas) will be restored using native vegetation in accordance with National Park Service, National Capital Region *Revegetation/Reclamation Guidelines*.
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**TABLE 1 MITIGATION MEASURES FOR THE PREFERRED ALTERNATIVE**

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**Impact Topics and Mitigation Measures**

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**Wildlife**

- The limits of disturbance will be clearly noted on construction documents and marked in the field by National Park Service staff to minimize disturbance and alteration of wildlife habitat.
- Vegetation clearing will be conducted outside the breeding season for migratory birds (typically April through August) and/or no occupied bird nests will be removed to ensure compliance with the Migratory Bird Treaty Act.

**Rare, Threatened, and Endangered Species**

- Areas supporting rare plants identified by the Maryland Department of Natural Resources and park staff during 2007 and 2008 surveys will be protected. Protective fencing and erosion control devices will be installed around occupied rare plant habitats identified in the immediate vicinity of the project site.
- The protection measures listed above for other resources will also serve to protect rare species.

**Archeological Resources**

- If previously unidentified archeological resources or human remains were discovered, work will be stopped in the area of discovery, protective measures will be implemented, and procedures outlined in 36 CFR 800 will be followed.
- A geogrid base will be used for temporary access roads and staging areas to minimize soil disturbance and compaction, and to protect any previously unidentified archeological resources.
- Work crews will be educated in the importance of archeological resources and cautioned regarding the illegality of collecting resources in the park.

**Cultural Landscape and Architectural Resources**

- The Catoctin Aqueduct will be restored in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.
- Potential impacts to the towpath and Culvert #79 will be avoided and minimize by placing and compacting gravel on the towpath's surface prior to access; enforcing established weight restrictions (12 tons); escorting heavy equipment and limiting speeds to 10 miles per hour; and restoring the towpath's surface following construction. Access by equipment exceeding the 12 ton limit will be evaluated on a case-by-case basis by the park engineer and protective steel plates will be placed over Culvert #79, as needed.
- Potential impacts to the canal prism at the temporary access causeway will be minimized through use of a geogrid base. The causeway will be removed and the area restored upon completion of the project.

**Historic Material**

- Any salvaged Catoctin Aqueduct stones that are not used in the restoration will remain in the Catoctin Aqueduct project area to retain contextual integrity. These architectural artifacts will continue to be protected and managed in accordance with Sections 106 and 110 of the National Historic Preservation Act. Unused stones will be cataloged and stacked
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**TABLE 1 MITIGATION MEASURES FOR THE PREFERRED ALTERNATIVE**

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**Impact Topics and Mitigation Measures**

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on donnage in an area southeast of the aqueduct and covered with a layer of soil. An inventory of all unused stones will be maintained by National Park Service using GPS data base.

**Visitor Use and Experience**

- Necessary towpath closures will be limited to short intervals (5 to 30 minutes). Visitors will be notified of the restoration work through signage, public announcements, and other means. The project will be phased so that the restored aqueduct will be open to foot traffic prior to removal of the Bailey bridge.

**Public Safety**

- Visitor access to work areas will be restricted during restoration using fencing and signage, as appropriate.
  - Flagmen will escort heavy equipment along the towpath and speeds will be limited to 10 miles per hour.
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**IMPAIRMENT OF PARK RESOURCES OR VALUES**

In addition to reviewing the list of significance criteria, the National Park Service has determined that implementation of the Preferred Alternative will not constitute an impairment of C&O Canal NHP resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the environmental assessment, the agency and public comments received, and the professional judgment of the decision-maker in accordance with the National Park Service's Management Policies 2001. As described in the environmental assessment, implementation of the Preferred Alternative will not result in major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of C&O Canal NHP, (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning document.

## **PUBLIC INVOLVEMENT AND CONSULTATION**

Internal National Park Service discussions and agency scoping led to identification of the main issues and impact topics that were addressed in the environmental assessment. The National Park Service officially notified the Maryland Historical Trust of the proposed restoration of the Catoctin Aqueduct on February 3, 2006, and park personnel conducted a site visit at the Catoctin Aqueduct with personnel from the Maryland Historical Trust on June 13, 2006. Discussions focused on alternatives evaluated in the feasibility study (stone arch barrel vs. concrete barrel), possible treatments for the concrete barrel alternative, use of original stone, other sources of stone, and integration of National Environmental Policy Act and Section 106 compliance in one document. The National Park Service updated the Maryland Historical Trust on the status of planning effort in a letter dated November 8, 2006.

Park personnel conducted a site visit at the Catoctin Aqueduct with personnel from the U.S. Army Corps of Engineers, Baltimore District, and Maryland Department of the Environment on July 19, 2006. The purpose of the meeting was to discuss potential environmental concerns associated with the project, which included hydrology impacts, permitting requirements, wetland impacts, and forest impacts. The agency representatives emphasized that potential impacts to wetlands and forests would need to be evaluated for all aspects of the project. Waterway and wetland permitting requirements that might be applicable to the project were discussed. The agency representatives also confirmed that a hydrologic and hydraulic analysis would be necessary to determine changes in Catoctin Creek velocity and water surface elevations.

Responses to requests for scoping comments were received from the U.S. Fish and Wildlife Service and Maryland Department of Natural Resources on December 7, 2006 and December 29, 2006, respectively. A site visit was subsequently conducted with the Maryland Department of Natural Resources (Richard Wiegand) in February 2007 to review rare plant issues. It was agreed during the site visit that Maryland Department of Natural Resources and National Park Service would cooperatively conduct surveys for state-listed plants in the project area during 2007. The surveys were conducted and the findings were used to develop mitigation measures (see Table 1) to avoid and minimize adverse effects to state-listed plants.

A public scoping notice and brochure were posted on the National Park Service Planning, Environment, and Public Comment website and a 30-day public scoping period was

open from November 1 through 30, 2006. One public scoping comment was received and it discussed some possible constraints associated with the use of tinted concrete liner applications, similar to that proposed under the Preferred Alternative. The National Park Service considered these constraints in the aqueduct restoration design and addressed them in the environmental assessment.

The environmental assessment was made available for public review and comment from March 7 through April 11, 2008. A press release announcing the document's availability was published in local newspapers and on the National Park Service Planning, Environment, and Public Comment website. Copies of the environmental assessment were made available on the website and at a public library. Copies of the environmental assessment were mailed to agencies and other interested parties. A public meeting for the environmental assessment was held on March 26, 2008 at the Brunswick Elementary School. The National Park Service received three public comments supporting restoration of the Catoctin Aqueduct. No substantive public comments were received.

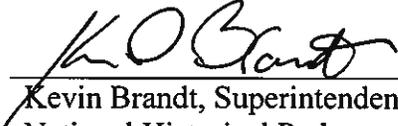
In a letter dated June 18, 2008, the Maryland Historical Trust provided concurrence that the Preferred Alternative will have no adverse effect on historic properties eligible for or presently listed on the National Register of Historic Places.

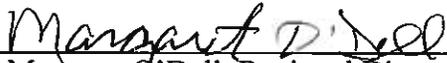
In a letter dated April 7, 2008, the Maryland Department of the Environment indicated that the hydrologic and hydraulic analysis conducted for the proposed project should be extended upstream to the point where the existing and proposed water surface elevations coincide. The National Park Service conducted additional hydrologic and hydraulic analysis and the findings are presented in a Technical Memorandum dated February 10, 2009. As summarized above, increases in the water surface elevations for a Catoctin Creek 100-year event will occur from the aqueduct to a point just downstream of the abandoned Boss Arnold Road Ford. Other than the Catoctin Aqueduct and CSX Railroad Bridge, no structures are located in the areas that will experience increased water surface elevations. As specified by the Maryland Department of the Environment, the National Park Service has made affected property owners aware of the findings of the hydrologic and hydraulic analysis. All affected property owners provided written confirmation that they were made aware of the results and that they have no objections to the National Park Service's plan to restore the Catoctin Aqueduct. The Federal Emergency Management Agency floodplain designation will not change.

## CONCLUSION

The Preferred Alternative does not constitute an action that normally requires preparation of an environmental impact statement. The Preferred Alternative will not have a major significant effect on the human environment. Adverse environmental impacts that could occur are negligible to moderate in intensity. Mitigation measures are incorporated into the Preferred Alternative to reduce or eliminate impacts. There are no significant adverse impacts on public health or safety; threatened or endangered species; historic properties either listed in, or eligible for listing in the National Register of Historic Places; or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the foregoing, it has been determined that an environmental impact statement is not required for this project and thus will not be prepared.

**Recommended:**  6-24-2009  
Kevin Brandt, Superintendent, C&O Canal  
National Historical Park Date

**Approved:**  7-22-09  
Margaret O'Dell, Regional Director, National  
Capital Region, National Park Service Date