

**NATIONAL PARK SERVICE
US DEPARTMENT OF THE INTERIOR**

George Washington Memorial Parkway
McLean, Virginia



ENVIRONMENTAL ASSESSMENT/ASSESSMENT OF EFFECT

MacArthur Boulevard Shared-Use Path at Glen Echo Park

*Glen Echo Park
Glen Echo, Maryland 20812*



December 2012

PROJECT SUMMARY

Introduction

The George Washington Memorial Parkway (GWMP), an administrative unit of the National Park Service (NPS), is proposing to provide a special use permit to Montgomery County, Maryland for the relocation of approximately 800 feet of the MacArthur Boulevard Shared-Use Path onto NPS administered property. The MacArthur Boulevard Shared-Use Path Project is part of Montgomery County's MacArthur Boulevard Bikeway/Lane Improvements Project that extends from I-495 to Oberlin Avenue in southwest Montgomery County, Maryland and is currently being designed by the Montgomery County Department of Transportation (MCDOT). The project was originally proposed in 2003 by MCDOT in order to "upgrade the existing shared-use path to current standards, promote usage, enhance safety for all users, and to improve the safety of bicycling on the MacArthur Boulevard roadway to better serve the experienced cyclist" (MCDOT 2004). Design for the project has been ongoing since 2003; however, due to a number of safety concerns with the original plans, including the narrowing of the shoulder in the vicinity of the intersection with Goldsboro Road, MCDOT approached NPS to see if it were possible to shift approximately 800 feet of the shared-use path onto the Cabin John Trolley Right of Way (Cabin John ROW) in the vicinity of Glen Echo Park and the Clara Barton National Historic Site.

This Environmental Assessment (EA)-Assessment of Effect (AOE) evaluates two alternatives: the No Action Alternative (Alternative 1) and the Preferred Alternative (Alternative 2), which includes all of the proposed actions. The No Action Alternative does not change the current layout, condition, or management of the park, or configuration of the current shared-use path that lies adjacent to the park. Major components of the proposed action include: clearing of the area adjacent to the Cabin John ROW, construction of a new shared-use path along the Cabin John ROW, adaptive re-use of the existing trolley bridge across Minnehaha Branch, and new paving, striping, and signage in the upper parking lot of Glen Echo Park that the new section of the shared-use path would cross.

Purpose and Need for the Action

The purpose of the proposed action is to provide a safe location for the shared-use path component of the Montgomery County Bikeway/Lane Improvements Project between Oxford Road and the original entrance to Glen Echo Park in such a way as to ensure the protection of park resources and values as provided for in Glen Echo Park's enabling legislation, purpose, mission and goals.

The proposed action is needed to improve the safety of the existing bikeway, which currently lacks proper identification signage, pavement markings, lane designations, and vehicular and bikeway approach signs. The path is not physically separated from the roadway and does not meet current American Association of State Highway and Transportation Officials (AASHTO) standards.

Overview of the Alternatives

Two alternatives for relocating the shared-use path onto NPS administered property have been carried forward in this EA: A No Action Alternative and the Preferred Alternative. The No Action Alternative (Alternative 1) would retain the current condition of the site and a special use permit would not be granted to MCDOT. The Preferred Alternative (Alternative 2) would involve providing a special use permit for the shared-use path along the Cabin John ROW from Oxford Road to a point approximately 30 feet south

of the trolley bridge, where it would turn back to rejoin the improved shared-used path along MacArthur Boulevard.

How to comment

If you wish to comment on this EA, you may mail comments via US Post or submit them electronically via the NPS Planning, Environment and Public Comment Website. Please be aware that your entire comment, including any personal identifying information, may be made publicly available at any time. While you can request in your comment that we withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Mailed comments can be sent to:

Superintendent
National Park Service, George Washington Memorial Parkway
c/o Turkey Run Park
McLean, VA 22101
RE: MacArthur Boulevard Shared-use Path

Comments can also be submitted electronically by using the following link:

<http://parkplanning.nps.gov/projectHome.cfm?projectID=28847>

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PURPOSE AND NEED

Introduction

The George Washington Memorial Parkway (GWMP), an administrative unit of the National Park Service (NPS), is proposing to provide a special use permit to Montgomery County, Maryland for the relocation of approximately 800 feet of the MacArthur Boulevard Shared-Use Path onto NPS administered property at Glen Echo Park, which is one of several individual parks located along the GWMP. The project would include the construction of an eight foot wide asphalt path on the remnants of the Cabin John Trolley Right of Way (Cabin John ROW), which is the abandoned ROW of the Washington Railway and Electric Company (also known as the Brookmont Trolley ROW). The project location is shown in Figure 1.

This Environmental Assessment (EA)/Assessment of Effect (AOE) evaluates two alternatives: the No Action alternative (Alternative 1) and the Preferred Alternative (Alternative 2), which includes all of the proposed actions. The No Action Alternative would not change the current layout, condition, or management of the park, or the configuration of the current shared-use path that lies adjacent to the park. Major components of the proposed action include clearing the area adjacent to the ROW, construction of a new shared-use path along the Cabin John ROW, adaptive re-use of the existing trolley bridge across Minnehaha Branch, and new striping and signage in the upper parking lot where the new shared-use path would cross.

This EA/AOE has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and implementing regulations 40 Code of Federal Regulations (CFR) Parts 1500-1508 and the NPS Handbook, *Conservation Planning, Environmental Impact Analysis, and Decision-making* (NPS 2002). In accordance with the National Historic Preservation Act of 1966 (NHPA) as amended and the implementing regulations at 36 CFR Part 800, the process and documentation required for preparation of this EA/AOE will also be used to comply with Section 106 of the NHPA.

Purpose of and Need for Action

Project Background

The MacArthur Boulevard shared-use path relocation is part of the MacArthur Boulevard Bikeway/Lane Improvements Project currently being designed by the Montgomery County Department of Transportation (MCDOT). It extends from I-495 southward to Oberlin Avenue in southwest Montgomery County, Maryland. Planning for the project was initiated in 2003 by MCDOT in order to “upgrade the existing shared-use path to current standards, promote usage, enhance safety for all users, and to improve the safety of bicycling on the MacArthur Boulevard roadway to better serve the experienced cyclist” (MCDOT 2004). Design for the project has been ongoing; however, due to the fact that there was insufficient room to accommodate the proposed design in the vicinity of Glen Echo Park, MCDOT approached NPS to see if it were possible to shift approximately 800 feet of the shared-use path from MacArthur Boulevard to the Cabin John ROW between Oxford Road and the original entrance to the Park. The shared-use path would make use of an existing trolley bridge over Minnehaha Branch that would be rehabilitated and adapted to accommodate pedestrians and cyclists.

MacArthur Boulevard Shared Use Path Environmental Assessment Assessment of Effect

Figure 1 Project Location Map



Data Source: World Imagery, ESRI



1,750 875 0 1,750 Feet

A horizontal scale bar with four segments. The segments are labeled from left to right as 1,750, 875, 0, and 1,750 Feet.

At the present time, MacArthur Boulevard is a two-lane undivided arterial that serves as a commuter route between the Maryland suburbs and the District of Columbia. It is also designated as part of the Chesapeake & Ohio (C&O) Canal Scenic Byway, one of 19 designated Scenic Byways in Maryland, in this area. The adjacent bikeway varies in condition, cross section, and compliance with current shared-use path standards.

Purpose and Need

The purpose of the proposed action is to provide a safe location for the shared-use path component of the MacArthur Boulevard Bikeway/Lane Improvements Project between Oxford Road and the original entrance to Glen Echo Park and to ensure the protection of park resources and values at Glen Echo Park (GEP) and the Clara Barton National Historic Site (CBNHS).

The proposed action is needed to improve the safety of the existing bikeway, which currently lacks proper identification signage, pavement markings, lane designations, and vehicular and bikeway approach signs. In addition, the path is not physically separated from the roadway at this location and does not meet current American Association of State Highway and Transportation Officials (AASHTO) standards.

The original typical section planned for MacArthur Boulevard includes two ten-foot travel lanes, three-foot shoulders in each direction for experienced cyclists, and five feet of green space between the shoulder and an eight-foot off-road shared-use path for recreational pedestrians and cyclists south and west of the centerline. However, this typical section would require construction of a new retaining wall on the south side of MacArthur Boulevard. Initial assessments of the potential impact of the construction of such a wall on Minnehaha Branch and the mature trees along MacArthur Boulevard prompted MCDOT to initiate discussions with NPS in 2005 to determine if it were possible to utilize the Cabin John ROW as an alternate route for the shared-use path portion of the project.

Agency relationships

Coordination between NPS and MCDOT has been ongoing since 2005. In addition, MCDOT has been coordinating closely with the US Army Corps of Engineers (USACE), the US Fish and Wildlife Service (USFWS), the Maryland Department of the Environment (MDE), the Maryland Department of Natural Resources (DNR), and the State Historic Preservation Office (SHPO) - Maryland Historic Trust (MHT) - in order to identify and address concerns regarding the potential impacts of the project.

Site Description

The project is located in the Town of Glen Echo, Montgomery County, Maryland along the unused ROW of the former Washington Railway and Electric Company, also known as the Cabin John ROW or the Brookmont Trolley ROW (MHT 2010). The Minnehaha Branch, a small tributary of the Potomac River, crosses the project site from northeast to southwest. Portions of the CBNHS and the Glen Echo Park National Historic District are adjacent to or lie within the project site. MacArthur Boulevard, a major commuter route between county suburbs and the District of Columbia, delineates the northern and eastern boundaries of the project site. Oxford Road is the western boundary. The southern boundary is located approximately forty feet from the center line of the proposed alignment, namely the Cabin John ROW. There is an access road and an upper parking lot for visitors, students, and employees of GEP located on

the project site southwest of Minnehaha Branch along MacArthur Boulevard, which is owned by the US Army Corps of Engineers. The project site is shown in Figure 2.

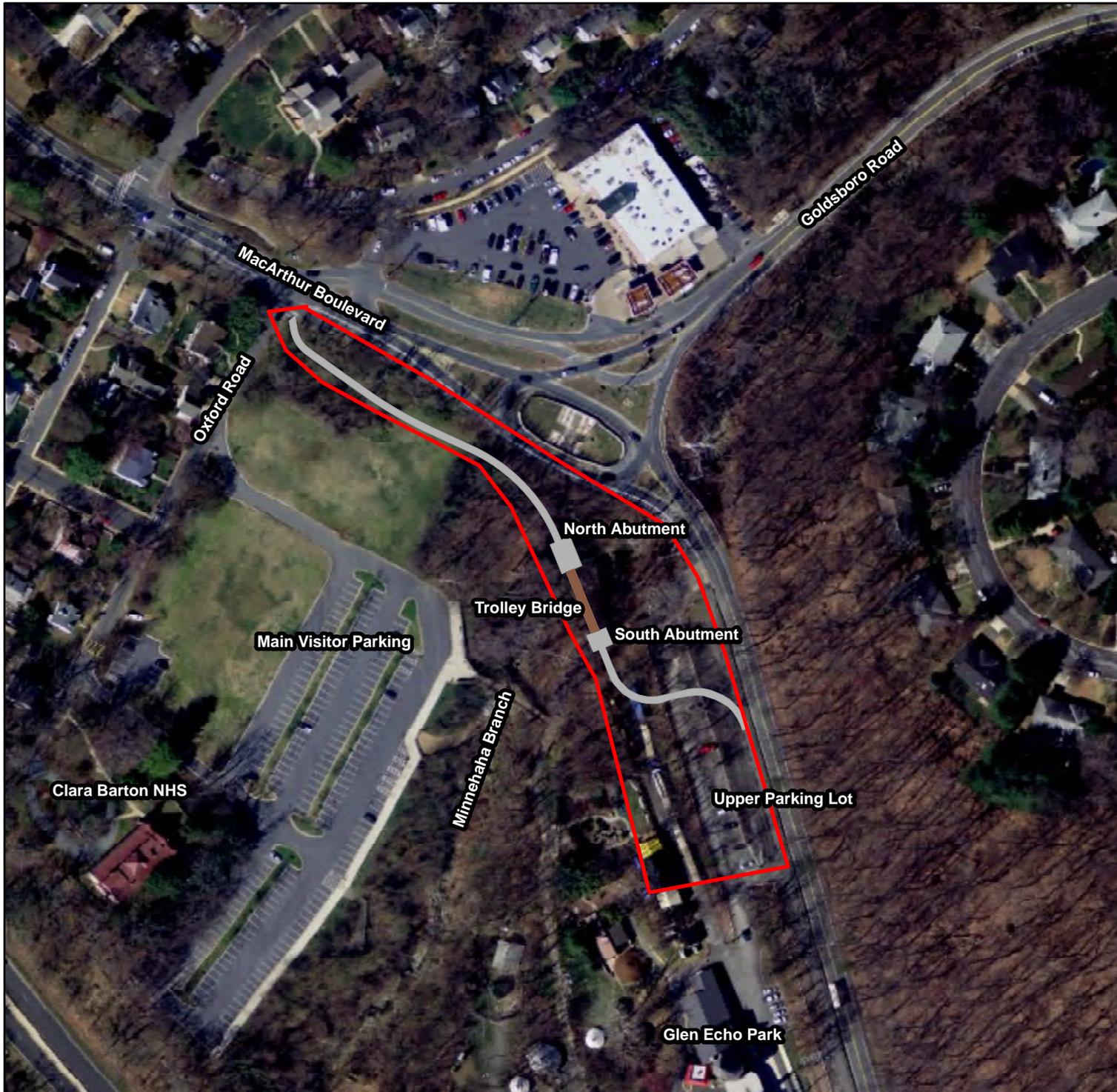
**MacArthur Boulevard
Shared Use Path
Environmental Assessment
Assessment of Effect**

**Figure 2
Project Site**

- Proposed Shared Use Path
- Project Site Limits



130 65 0 130 Feet



Purpose and Significance of the Parks

Glen Echo Park has been a center for education, entertainment and cultural development since its inception in 1891 as a National Chautauqua Assembly, which was a place where people could participate in the arts and sciences. It functioned as a local amusement park between 1899 and 1968 with many of its visitors arriving via the trolleys of the Washington Railway and Electric Company. After the park closed in 1968, the local community organized in response to plans to redevelop the site as a residential community and worked with the Department of the Interior and the National Capital Planning Commission (NCPC) to protect the park. It was acquired by the General Services Administration (GSA) in 1970. The rationale for federal government acquisition of the Glen Echo Park site was established in the park's purpose statement: "to protect the land and scenery adjacent to the Potomac River Palisades, to preserve the natural and cultural resources within the park and provide for public enjoyment and appreciation of these resources" (NPS 2001).

Based on a series of community forums, it was decided that the amusement park buildings would be adapted and reused for community arts and education programs. In 1976, the park became part of the National Park System as a component of the George Washington Memorial Parkway (NPS 2001). It is the only example of an amusement park protected within the National Park system.

Today, the NPS is responsible for the overall management of Glen Echo Park and the protection and interpretation of its natural and cultural resources. Montgomery County, through the non-profit Glen Echo Park Partnership for Arts and Culture (GEPPAC), manages the arts and dance programs, produces festivals and special events, and assists with the management and maintenance of park facilities. The park was entered into the National Register of Historic Places (NHRP) in 1984 based on its significance as 1) a site of the late 19th century Chautauqua Movement; 2) a rare surviving regional example of an early 20th century amusement park of architectural significance; and 3) as a recreational facility for area residents and visitors (MHT 2010).

The Clara Barton National Historic Site (NHS) commemorates the life of Clara Barton, founder of the American Red Cross. The house in Glen Echo was constructed in 1891 and initially served as a warehouse for disaster relief supplies. Beginning in 1897, it also served as Barton's home and the headquarters for the American Red Cross. From Glen Echo, she organized and directed American Red Cross relief efforts for victims of natural disasters and war until she resigned as president in 1904. Barton lived in the house until her death in 1912. The Clara Barton House was made a National Historic Landmark in 1966 and the Clara Barton National Historic Site was established by the National Park Service in 1975.

Relationship to Laws, Executive Orders, Policies, and Other Plans

Applicable State and Federal Laws

This EA has been developed in accordance with the NEPA and implementing regulations found at 40 CFR Part 1500 through 1508 (Council on Environmental Quality [CEQ] 1978), as well as the NPS Director's Order #12 Handbook; §106 of the NHPA, as amended; the Advisory Council on Historic

Preservation's (ACHP) regulations, 36 CFR Part 800; and provisions set forth in the 2008 Service-wide Programmatic Agreement with the NPS.

City Plans

The project site is located within the Town of Glen Echo, which is part of the Bethesda-Chevy Chase Master Planning area of Montgomery County. The most recent comprehensive planning document for the Bethesda-Chevy Chase planning area was completed in 1990 by the Montgomery County Planning Department of the Maryland-National Capital Park and Planning Commission (M-NCPPC). The plan reaffirms the importance of the existing "hiker-biker path (that) parallels MacArthur Boulevard" as a key link in the county's bikeway network and recommends that it be "repaired where needed and properly maintained" (M-NCPPC, 1990). In addition, the plan recommends that "a vigorous program be pursued to implement the Master Plan of Bikeways within the Planning Area" (M-NCPPC, 1990), which was most recently updated in 2005. The updated plan shows MacArthur Boulevard as a "Countywide Dual Bikeway: Shared-use Path Proposed/Signed Shared Roadway Proposed" resource (M-NCPPC, 2005).

NPS Policies and Plans

GEP's Management Plan indicates two goals that would be supported by the project. The first is to serve as a forum for bringing educational and interpretive messages to the public using interpretive signage, waysides and exhibits, public talks, guided walks, and outreach programs. The amusement park era and the popularity of trolley parks is one of several themes that would be interpreted along the shared-use path. A second goal seeks to offer safe and pleasant access for pedestrians from the parking areas and the surrounding residential neighborhoods. (NPS 2001) There is also an opportunity for GEP and CBNHS to interpret the shared-use path as a historically accurate passageway between the two sites.

NPS Director's Order #12 - Conservation Planning, Environmental Impact Analysis, and Decision Making (DO-12) - establishes "the policy and procedures by which the National Park Service carries out its responsibilities under the National Environmental Policy Act (NEPA). The accompanying Handbook provides further direction for implementing DO-12.

NPS Director's Order #28: Cultural Resources Management (DO-28) requires the NPS to "protect and manage cultural resources in its custody through effective research, planning and stewardship and in accordance with the policies and principles contained in the NPS Management Policies" (NPS 1998). It also requires that the NPS comply with the substantive and procedural requirements described in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, as well as the 2008 Programmatic Agreement between NPS, the ACHP and the National Conference of State Historic Preservation Officers. The NPS Cultural Resources Management Guideline provides further direction for implementing DO-28, including detailed standards and requirements with which park managers must comply.

Scoping Process and Public Participation

NPS uses the scoping process to gather information from the public and interested agencies to define project issues and alternatives, as well as data needs. Internal scoping is usually completed by a multidisciplinary team of NPS personnel and interested local agency representatives, while external scoping is used to gather public input via direct mailings or advertisements.

Internal scoping for this project began in 2005 when NPS was approached by MCDOT. Additional internal scoping occurred during a field visit in 2008 and during two subsequent meetings with NPS, MCDOT, and the design team in May 2009 and July 2009. During these meetings, potential issues and other feasible alternatives were discussed.

The NPS initiated formal external scoping for this project by posting a public scoping announcement on the NPS Planning, Environment and Public Comment Website on August 17, 2010. Two letters were received from concerned citizens as a result of this process. Both respondents were experienced cyclists who regularly use the existing shared-use path and felt that a relocated path would be more dangerous than the existing path, particularly with a crossing through the parking lot. They were also concerned that the change in grade would be too steep and that the environmental impacts would be too great.

Issues and Impact Topics

Issues describe problems or concerns associated with current impacts from environmental conditions or current operations, as well as problems that may arise from the implementation of an alternative. The following issues were identified during the project planning through internal and external scoping:

- Balance the need for accommodating the shared-use portion of the MacArthur Boulevard Improvements Project while minimizing impacts to natural and cultural resources. While there would be room for the improved shoulder for on-road cyclists on MacArthur Boulevard in the area of Glen Echo Park, there is not sufficient room to accommodate the shared-use path unless a retaining wall is constructed to widen the ROW. The issue was how to provide an alternative route for the shared-use path across NPS property with minimal impacts to water quality, wetlands, tree cover, and cultural resources.
- Ensure the safety of trail users. The proposed alignment for the shared-use path would require crossing an existing parking lot and an access road. The issue centered on whether crossing the parking area would be safer than having a gap in the shared-use path, whereby recreational users, including pedestrians, would have to share the shoulder of MacArthur Boulevard with experienced cyclists.
- Reuse the existing trolley bridge for the shared-use path. The issue centered on whether the rehabilitation and adaptive reuse of the bridge would constitute an adverse effect on the bridge, which is an historic structure listed in the Maryland Inventory of Historic Places (MIHP) and eligible for the National Register of Historic Places (NRHP), or other cultural resources in the vicinity. The bridge is listed in the GEP/CBNHS Cultural Landscape Inventory (NPS 2011).

Impact Topics Analyzed in this EA

The following impact topics are discussed in the Affected Environment chapter and analyzed in the Environmental Consequences chapter of this EA. These topics address resources of concern that could be beneficially or adversely affected by the actions proposed under each alternative and are developed to ensure that the alternatives are evaluated and compared based on the most relevant topics. These impact topics were identified based on issues that were raised during scoping, federal laws, regulations, executive orders, NPS 2006 Management Policies, and knowledge of limited or easily impacted resources.

Topography – There are steep slopes between MacArthur Boulevard and the Cabin John ROW, as well as along Minnehaha Branch in the project site. Under the No Action Alternative, there would be no impacts to steep slopes. Under the Preferred Alternative, minor grading would be required near the bridge abutments and fill would be needed between the trolley bridge and the upper parking lot.

Hydrology – Minnehaha Branch bisects the project site. It passes under MacArthur Boulevard via a culvert on its way to the Potomac River. No other permanent hydrologic features are within the project site. Under the No Action Alternative, there would be no impacts to hydrology. Under the Preferred Alternative, a temporary stream diversion would be constructed in Minnehaha Branch in order to repair the truss bearings, resulting in temporary impacts to hydrology.

Water Quality – Under both alternatives, water quality may be impacted by erosion and siltation from runoff. Under the Preferred Alternative, water quality impacts may also occur during the rehabilitation of the trolley bridge over Minnehaha Branch.

Wetlands – As per Director’s Order 77-1, NPS uses “Classification of Wetlands and Deepwater Habitats of the United States” (FWS/OBS-79/31; Cowardin et al. 1979) to define, classify, and inventory wetlands. Under this guidance, Minnehaha Branch is considered a wetland. Under the No Action Alternative, no impacts to wetlands would occur. Under the Preferred Alternative, the wetland area under the trolley bridge may be adversely affected by the temporary stream diversion. Because the potential impacts would be temporary and would impact less than one-tenth of an acre, a Wetland Statement of Findings is not required.

Vegetation – Under the No Action Alternative, no impacts to existing vegetation would occur. Under the Preferred Alternative, vegetation removal would occur during construction activities, including the removal of native trees in excess of six inches diameter at breast height. In addition, the inadvertent establishment of noxious weeds or invasive weeds would be possible in disturbed areas.

Wildlife – The No Action Alternative would not have an impact on aquatic or terrestrial wildlife in the project site. The Preferred Alternative would require the construction of a temporary stream diversion and could impact aquatic species in Minnehaha Branch. The removal of vegetation could impact terrestrial wildlife and habitat in the project site.

Scenic Resources – MacArthur Boulevard is part of the Chesapeake & Ohio (C&O) Canal Scenic Byway, which is one of 19 designated Scenic Byways in Maryland. Glen Echo Park and the Clara Barton NHS are among the many scenic resources along the Byway. Under the No Action Alternative, there would be no impacts to scenic resources. Under the Preferred Alternative, there may be minor impacts to scenic resources, such as removal of native vegetation, within the project site.

Cultural Resources – The National Historic Preservation Act (NHPA; 16 USC 470 et seq.), NEPA, the NPS Organic Act, NPS Management Policies 2006 (NPS 2006), DO-12 (Conservation Planning, Environmental Impact Analysis and Decision-making), and NPS-28 (Cultural Resources Management Guideline) require the consideration of potential impacts on any cultural resources. The NHPA, in particular, requires the consideration of impacts on cultural resources either listed in, or eligible to be listed in, the NRHP. Cultural resources include archeological resources, cultural landscapes, historic structures and districts, ethnographic resources, and museum collections (prehistoric and historic objects,

artifacts, works of art, archival documents, and natural history specimens). Impacts to archeological resources, historic structures and districts, and cultural landscapes are the three cultural resource topics carried forward in this EA/AOE.

Archeology – Archeological sites have been identified in the vicinity of the project site; however, no archeological surveys had been completed within the limits of the proposed action. As a result, a Phase I Archeological Survey was conducted for this EA.

Historic Structures and Districts – The ROW and the remaining bridges are identified in the Maryland State Inventory of Historic Properties. The trolley bridge is considered to be a contributing resource to the park's cultural landscape and would require appropriate documentation under the Preferred Alternative. The National Register-listed Glen Echo Park National Historic District and the Clara Barton National Historic Site are adjacent to the project site. Under the No Action Alternative, no impacts to historic structures or districts would occur. Under the Preferred Alternative, a segment of the Cabin John ROW, including an existing trolley bridge that crosses over Minnehaha Branch, would be used. Adaptive reuse of the trolley bridge would serve to keep the bridge from further deterioration; however, if not done properly, it could negatively impact the historic character of the structure and may also result in visual impacts to the listed historic properties.

Cultural Landscapes – A cultural landscape is defined as "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values" (NPS–28). Characteristics of the cultural landscape include topography, vegetation, natural systems and features, circulation routes, and buildings and structures. Under the No Action Alternative, there would be no impacts to the Glen Echo Park/Clara Barton NHS cultural landscape. Under the Preferred Alternative, there would be impacts to several of the elements that make up the cultural landscape as a result of clearing and grading activities and the adaptive re-use of the existing trolley bridge and Cabin John ROW as described above.

Visitor Use and Experience – Under the No Action Alternative, there would be no impacts to visitor use or experience at GEP or CBNHS. The Preferred Alternative has the potential to have a positive impact on visitor use and experience post construction if proper directional signage and pavement striping is provided in the upper lot to reduce the likelihood of car-bike collisions. It would also present an opportunity to enhance the visitor experience through new interpretive exhibits related to both the transportation history associated with the Cabin John ROW and the natural environmental features of Minnehaha Branch. During construction, the Preferred Alternative may have temporary impacts, such as construction noise and dust, which may negatively impact the user experience.

Human Health and Safety – The No Action Alternative has the potential to adversely impact human health and safety as the upgraded shared-use path would end at Oxford Road, requiring recreational users to share the shoulder of MacArthur Boulevard with experienced cyclists or detour through the main parking area and Glen Echo Park if they wish to continue south. The Preferred Alternative would be expected to have a positive impact on health and safety post construction by providing a safe place for users to walk and bicycle along MacArthur Boulevard and through the neighborhood.

Park Management and Operations – The No Action Alternative would not impact park management and operations. The Preferred Alternative would require the administrative provision of a special use

permit for the shared-use path on NPS property and would require increased maintenance operations for the NPS.

Transportation – The No Action Alternative would have an adverse impact on transportation as the proposed improvements to MacArthur Boulevard could not be completed as planned and would result in a gap in the shared-use path. The Preferred Alternative would relocate the proposed shared-use path onto the Cabin John ROW. In addition, the Preferred Alternative would introduce a new crossing through the upper parking lot at Glen Echo Park.

Impact Topics Dismissed from Further Analysis

Detailed analysis of the following topics is not required of this EA. A brief rationale for this determination is provided below for each topic.

Air Quality – The US Environmental Protection Agency (USEPA) established the National Ambient Air Quality Standards (NAAQS) for specific pollutants determined to be of concern to the health and welfare of the general public. Ambient air quality standards are classified as either "primary" or "secondary." The major pollutants of concern, or criteria pollutants, are carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), particulate matter less than ten microns (PM₁₀), particulate matter less than 2.5 microns (PM_{2.5}) and lead. The NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect public health and welfare.

Areas that meet both primary and secondary standards are known as attainment areas; areas that do not meet these NAAQS standards are called non-attainment areas. Areas that previously did not meet the NAAQS but now achieve the standards as a result of management practices (e.g., oxygenated fuels, "lowest achievable emission rate" control technology, etc.) are classified as maintenance areas. These classifications are applied to a given geography for each of the criteria pollutants.

The Federal Conformity Rule (40 CFR Parts 51 and 93) was promulgated in 1993 by the USEPA, following the passage of Amendments to the Clean Air Act (CAA) in 1990. The Federal Conformity Final Rule specifies criteria or requirements for conformity determinations for federal projects. The rule mandates that a conformity analysis must be performed when a federal action generates air pollutants in a region that has been designated a non-attainment or maintenance area for one or more criteria pollutants.

The Town of Glen Echo is located in Montgomery County, MD, which is a designated non-attainment area for ozone and PM_{2.5} (USEPA). The proposed action would not expand the vehicular capacity of the roadway but would expand the capacity of the shared-use path for non-motorized modes of travel. During the planning stages for the project, it was determined that any increase in the use of the bikeway would not impair air quality (MCDOT 2004). Therefore, the action alternative would not negatively impact air quality. Temporary impacts to air quality as a result of construction activities would occur within a localized area and would be negligible. Therefore, air quality was dismissed from further evaluation.

Geology and Geologic Hazards – The project site is located within the Piedmont physiographic province. Bedrock consists primarily of metamorphic rocks of the Paleozoic age called the Wissahickon Group. There are no known geologic hazards within the project site (MCDOT). Under each of the alternatives, there would be no impacts on geologic formations and the underlying geology does not

provide any constraints on the proposed construction activities. Therefore, geology and geologic hazards were dismissed from further evaluation.

Soils and Prime Farmlands – According to the Natural Resources Conservation Service (NRCS), there are four types of soils within the project site: Glenelg-Urban Land Complex with zero to eight percent slopes; Glenelg-Urban Land Complex with eight to 15 percent slopes; Glenelg silt loam with three to eight percent slopes; and Brinklow-Blocktown channery silt loams with 15 to 25 percent slopes (NRCS 2010).

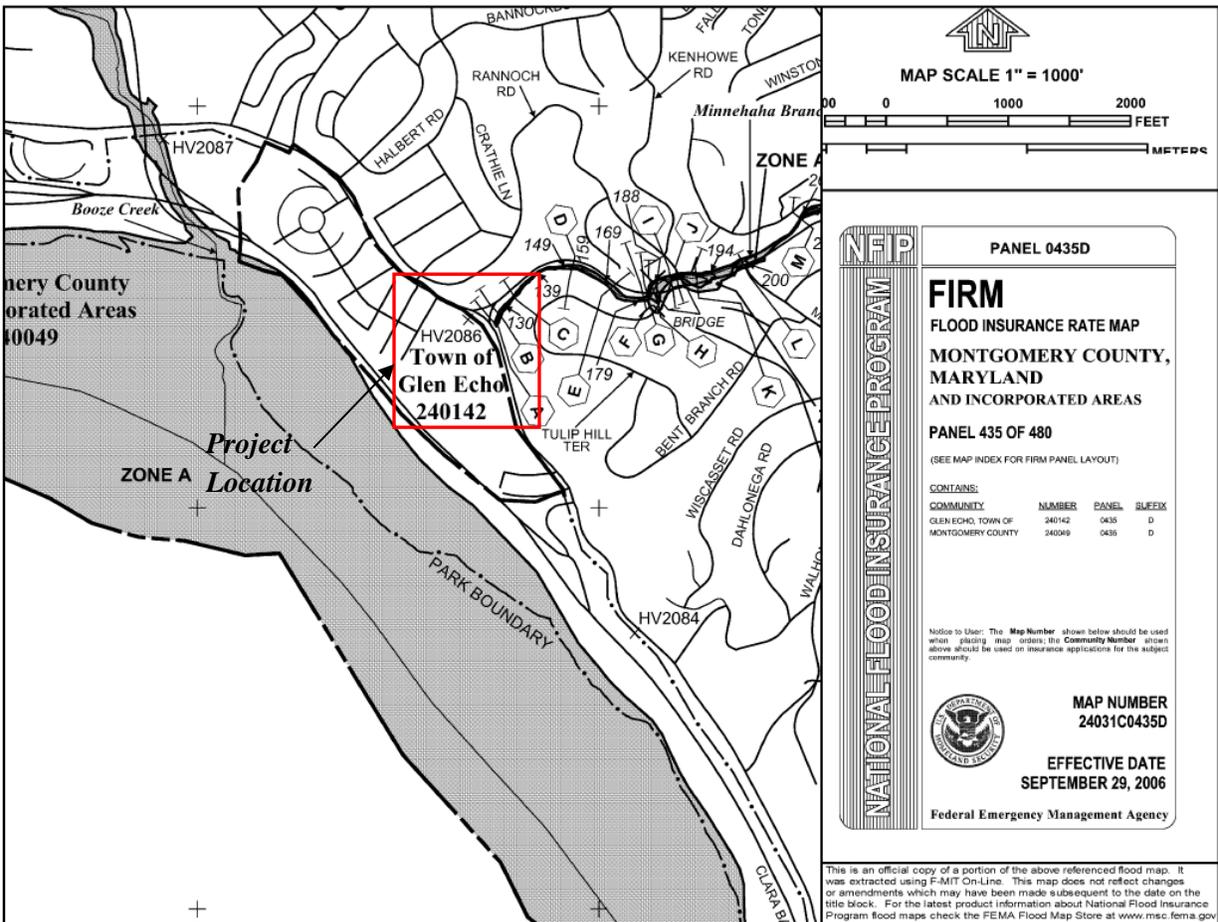
The Glenelg-Urban complexes are comprised of 50 percent Glenelg and similar soils, 45 percent urban lands and five percent minor components. Parent material is generally residuum weathered from mica schist or phyllite. Unless close-growing plant cover is maintained, these soils have very low water retention capacity and moderate to severe capability limitations due to erosion hazards. They are found between Oxford Road and the Minnehaha Branch stream channel. Brinklow-Blocktown soils are comprised of 50 percent Brinklow soils; 30 percent Blocktown soils, and 20 percent minor components. These soils are very well drained and exhibit very severe capability limitations due to the steepness of the slopes. These soils are found along Minnehaha Branch. The Glenelg silt loams are found south of the existing trolley bridge and have only moderate capability limitations.

According to the US Department of Agriculture (USDA), prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. This designation does not include areas of water or urban or built-up land. Prime farmland is protected under the Farmland Protection Policy Act of 1981. The Act aims to minimize the extent to which federal programs contribute to the unnecessary or irreversible conversion of farmland to nonagricultural uses. The US Census Bureau shows the Town of Glen Echo and Glen Echo Park as part of an urbanized area. Based on this status, the park does not meet the definition of farmland. Under 7 CFR 658.3, land that does not meet the definition of farmland is exempt from review under the Farmland Protection Policy Act.

Under the No Action Alternative, there would be no impacts to soils within the project site. Under the Preferred Alternative, approximately 0.13 acres of soils would be covered by pavement. The total impervious surface area within the Glen Echo Park/Clara Barton National Historic Site would increase from approximately 5.83 acres to 5.96 acres, or approximately one half of one percent. Thus, the impact to soils would be considered negligible. Therefore, the soils and prime farmland impact topic was dismissed from further evaluation.

Floodplains – In compliance with Executive Order (EO) 11988 and Directors Order 77-2 “Floodplain Management”, it is NPS policy to preserve floodplain values and minimize potentially hazardous conditions associated with flooding (NPS, 2002). Review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for Montgomery County, MD and Incorporated Areas indicates that the 100-year floodplain of Minnehaha Branch ends northeast of the culvert under MacArthur Boulevard, which is outside the project site; see Figure 4. Since there are no FEMA-designated 100-year floodplains in the project site, this topic has been dismissed from further evaluation.

Figure 3 - FEMA Flood Insurance Map



Rare, Threatened, and Endangered Species – Initial coordination between MCDOT and the Maryland Department of Natural Resources (DNR) and the USFWS indicated there were no federally listed or proposed threatened or endangered species within the overall project site (2003). However, NPS staff had identified a small population of the state-listed threatened plant species *Melica mutica* (Narrow Melicgrass) near the southwest corner of the bridge outside of the proposed limits of disturbance (LOD) of the Preferred Alternative. Follow-up correspondence with both DNR and USFWS was initiated by NPS in September 2010 to verify the occurrence. Since the plants are located outside of the LOD, there would be no impacts as they would not be disturbed, nor would their habitat experience any changes that would affect their ability to survive. However, as a precaution, the plants would be protected by fencing for the duration of construction. Therefore, this topic has been dismissed from further evaluation.

Museum collections – None of the alternatives would impact existing museum collections. Artifacts recovered during construction, if any, would be preserved according to NPS standards as described in the NPS Director’s Order #24. Since no impacts to museum collections would be expected to occur, this topic was dismissed from further analysis.

Ethnography – Ethnographic resources are the cultural and natural features of a park that are of traditional significance to traditionally associated peoples; these peoples would have been associated with a park for two or more generations and their interests in the park’s resources began before the park was established (NPS 2001). NPS staff has reviewed the proposed project and determined that there are no ethnographic resources within the project site. Because no known ethnographic resources would be impacted by either alternative and because mitigations would be in place to protect any human remains, funerary objects, sacred objects, or objects of cultural patrimony inadvertently discovered, ethnographic resources have been dismissed from further study.

American Indian Traditional Cultural Properties – Department of the Interior (DOI) Secretarial Order 3175 requires that any anticipated impacts to these properties from a proposed project or action by DOI agencies be explicitly addressed in environmental documents. There are no American Indian traditional cultural properties within the proposed project limits (NPS 2001). Therefore, this topic has been dismissed from further study.

Land Use – Existing land uses in the vicinity of the proposed action consists of transportation uses, moderate and low density single family residential uses, commercial uses, historical/cultural areas, and natural areas. Transportation uses include roadways and parking areas. Under the No Action Alternative, there would be no impacts to land uses. The Preferred Alternative, a transportation use, would utilize the Cabin John ROW and the upper parking lot, both of which are already considered transportation land uses; therefore, there would be no impacts to land use. Impacts to natural areas along the ROW as a result of the construction of the trail are discussed in the vegetation impact topic. Thus, land use has been dismissed from further study.

Socioeconomics – Under each of the alternatives, there would be no impact on the demographic or economic characteristics of the surrounding community. Therefore, socioeconomics has been dismissed from further study.

Environmental Justice – EO 12898 (Environmental Justice) requires federal agencies to identify and address disproportionately high and adverse impacts of their programs, policies, and activities on minority and low-income populations. EO 12898 was enacted to ensure fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal programs and policies.

Data for Montgomery County census tracts in the project site from the 2000 Decennial Census indicates that approximately 90 percent of the population is white and less than two percent had incomes below the poverty level. Since there are no environmental justice populations in the project site, this impact topic has been dismissed from further study.

ALTERNATIVES

Introduction

The National Environmental Policy Act of 1969 (NEPA) requires that federal agencies explore a range of reasonable alternatives for a proposed action. The alternatives under consideration must include the “no action” alternative as prescribed by 40 CFR 1502.14. Project alternatives may originate from the proponent agency, local government officials, members of the public at public meetings, or from scoping during the early stages of project development. Alternatives may also be developed in response to comments from coordinating or cooperating agencies. The alternatives analyzed in this document are the result of design scoping, internal scoping and public scoping. Project alternatives that were considered but 1) failed to meet the purpose and need for the project; 2) created unnecessary adverse resource impacts; or 3) conflicted with the management of the parks or their resources were dismissed from further analysis.

For this EA/AOE, the NPS evaluated two alternatives described below. Alternatives dismissed from consideration and not evaluated in this EA are described in the following subsection entitled “Alternatives Considered but Dismissed”.

Descriptions of Alternatives Considered

Alternative 1: No Action

Council on Environmental Quality (CEQ) regulations for NEPA compliance requires that a “no action” alternative be considered to provide a baseline for comparing the action alternatives. Under the No Action Alternative for the MacArthur Boulevard shared-use path, NPS would not provide the special use permit for the shared-use path. The existing path would remain in its present location until planned improvements are made to MacArthur Boulevard and the rest of the shared-use path. Once the improvements are made, a three-foot wide shoulder will be provided and accommodate on-road cyclists; however, the shared-use path for recreational pedestrians and bicyclists and would end at Oxford Road and recreational users would have to use the shoulder to continue their journey or make a detour from Oxford Road through the main visitor parking area for Glen Echo Park (GEP) and the Clara Barton National Historic Sites (CBNHS), across the bridge just downstream from the trolley bridge, and through Glen Echo Park to rejoin the improved shared-use path east of the GEP entrance.

Alternative 2: Provide a special use permit for MCDOT alignment of shared-use path (Preferred Alternative – Figure 4)

Under the Preferred Alternative, the NPS would provide a special use permit to MCDOT to construct the shared-use path, as described below.

The shared-use path would be an eight-foot wide asphalt pathway with handrails for safety. It would follow the Cabin John ROW from Oxford Road in a southeasterly direction to the existing trolley bridge over Minnehaha Branch (see Figure 4) and would continue south past the bridge for approximately 30 feet where it would curve to the east and uphill to the existing upper parking lot. It would cross the upper parking lot perpendicularly and then curve southward to join the existing bikeway alignment parallel to MacArthur Boulevard.



**MacArthur Boulevard
Shared Use Path
Environmental Assessment
Assessment of Effect**

**Figure 4
Preferred Alternative**

■ Proposed Shared
Use Path



70 35 0 70 Feet

The shared-use path would be constructed primarily on fill materials that meet current industry standards; however, a minor cut is needed along one section. The shared-use path would have a maximum five percent change in grade as per Americans with Disabilities Act (ADA) requirements. Construction of the Preferred Alternative would convert approximately 0.13 acres of existing pervious surface to impervious surface.

A 15-inch reinforced concrete pipe would be placed under the fill to manage drainage that currently flows through an open ditch between the upper parking lot and the trolley ROW. Clearing would be required to remove undergrowth and trees that have encroached upon the Cabin John ROW and in the area between the upper parking lot and the ROW south of the bridge. New landscaping would consist of appropriate native trees, shrubs, and grasses. Signage along the trail and pavement markings would meet or exceed the current standard for facilities of this type, and would provide warning and direction for both trail users and vehicles, as appropriate. The NPS would be responsible for the final design of any additional signage, including interpretive signage along the trail.

The trolley bridge over Minnehaha Branch would be adapted and re-used to accommodate bicycles and pedestrians as described below (MCDOT 2010). Rehabilitation through adaptive re-use would be undertaken in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. Initial tasks include photographic documentation of the current condition of the structure to update documentation included in the 1979 American Council of Historic Preservation (ACHP) Summary Form prior to the initiation of work.

Landscaping treatments would include native plants and local materials so as to be compatible with the historic settings and surroundings

- The existing timber deck would be removed and disposed of in accordance with all applicable state and local regulations.
- The abutments would be power-washed to remove efflorescence, stains, and loose concrete and establish a uniformly clean surface. The contractor would be required to contain the waste and prevent any from infiltrating the ground or adjacent stream. Once cleaned, cracks and other deteriorated areas, including the back walls would be repaired according to industry standards. No changes in grade would be required at either abutment, but rip rap stone from a local quarry would be used along the downstream side of the southern abutment in order to stabilize the existing slope. The stone would be placed on top of the existing grade and cover an area approximately three feet wide along the length of the abutment.
- New wing wall tie-back rods would be installed at both bridge abutments to ensure structural integrity. Installation would consist of excavating old fill from between the wing walls, installing new 1" steel tie-back rods, and then replacing and compacting appropriate fill materials to create the sub-grade for the trail pavement section. The only outward sign of this activity when complete would be three one-foot square plates with the 1" steel rods on each side of the abutments, which would be minimally perceptible from the downstream bridge over Minnehaha Branch that connects the main visitor parking area with Glen Echo Park.
- Upon completion of the repairs, the substructure would be painted and coated, as needed.
- The truss bearings at both abutments would be replaced and the beam seats would be reconstructed. This would consist of jacking the trusses, repairing and/or replacing the bearing assemblies, and

resetting the trusses. Jacking the bridge at the northern abutment would require a temporary stream diversion of Minnehaha Branch for approximately six weeks and would be completed in accordance with the Maryland Department of the Environment's (MDE's) Waterway Construction Guidelines (MDE 2000). A diversion would not be required for the southern abutment repairs.

- Once the truss bearings and beam seats are finished, the structural steel would be cleaned and painted.
- Installation of the new timber deck and railings would be the final step. The proposed railings were designed in cooperation with NPS staff and are similar in style to those used on the downstream bridge over Minnehaha Branch.

Mitigation Measures

The NPS places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. To help ensure the protection of natural and cultural resources and the quality of the visitor experience, the following protective measures would be implemented as part of the Preferred Alternative. The NPS would implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and are achieving their intended results.

General Mitigation Measures

- The NPS project manager would ensure that the project remains confined within the parameters established in the compliance documents and that the mitigation measures are properly implemented.
- The majority of the construction activities would occur during non-peak traffic hours at Glen Echo Park.
- Information on the project and temporary impacts during construction would be made available on the Glen Echo Park and Glen Echo Park Partnership for Arts and Culture (GEPPAC) websites and in the Glen Echo Park visitor center.
- Protection measures would be clearly stated in the construction specifications and workers would be instructed to avoid conducting activities beyond the construction zone.
- Tools, equipment, barricades, signs, surplus materials, and rubbish would be removed from the project work limits upon project completion. Areas damaged due to work on the project would be repaired to original condition. Demolition debris would be removed from the project site, including visible concrete and metal pieces.
- Contractors would be required to properly maintain construction equipment (i.e., mufflers) to minimize noise from use of the equipment.
- A hazardous spill plan would be in place, stating what actions would be taken in the case of a spill and identifying preventive measures to be implemented, such as the placement of refueling facilities, storage, and handling of hazardous materials, etc.
- Equipment used on the project would be maintained free of external petroleum-based products while working at the project location.
- Where appropriate, vegetable or mineral oil based grease, hydraulic oil, and bar and chain oil would be used. These lubricants are less toxic than typical lubricants and are biodegradable.

Wetland and Stream Mitigation Measures

- Wetlands and streams adjacent to the project site would be protected during construction using erosion and sediment control measures in accordance with MDE regulations, such as silt fencing that is installed without digging and daily stabilization of disturbed areas per contract specifications.
- A permit from the USACE and MDE would be obtained by MCDOT for work occurring within Minnehaha Branch, which is a Water of the United States. The temporary sandbag channel diversion needed to protect the jack that would support the bridge during the repairs would be designed and constructed by the selected contractor in full accordance with Maryland Department of the Environment Waterway Construction Guidelines - Temporary Instream Construction Measures, Section MGWC 1.5 "Sandbag/Stone Channel Diversion".
- A Cleaning Containment System Plan would be developed and approved prior to starting the cleaning and painting of the trolley bridge to protect Minnehaha Branch. Elements of the plan would be in accordance with Section 436 of Maryland State Highway's Standards Specifications for Construction and Materials. The selected contractor would be required to design the system, including the paint removal apparatus, curtains, screens, and tarpaulins for containment, rigging and ventilation, as necessary.
- Pre- and post-construction stream sediment and paint sampling and analysis for metals would be completed by Montgomery County in order to monitor water quality. Pre-construction analysis was completed in March 2010. Results are discussed in the Affected Environment Chapter.
- No vehicles or heavy equipment would be permitted in the stream area.

Soil Mitigation Measures

- To the extent possible, construction in areas with steep slopes would be avoided.
- An appropriate Erosion and Sediment Plan would be implemented.
- Sustainable best management practices would be utilized to control stormwater runoff.
- Disturbance would be minimized as much as possible through appropriate best management practices. These practices would include all or some of the following, depending on site-specific requirements:
 - Keep disturbed areas as small as practical to minimize exposed soils and the potential for erosion;
 - Locate waste and excess excavated materials outside of drainages to avoid sedimentation;
 - Install fences, temporary earthen berms, temporary water bars, sediment traps, stone check dams, or other equivalent measures, including installing erosion-control measures around the perimeter of any stockpiled fill material, prior to construction;
 - Conduct regular site inspections during the construction period to ensure that erosion-control measures were properly installed and are functioning effectively
 - Store, use, and dispose of chemicals, fuels, and other toxic materials in a proper manner; and
 - Re-vegetate disturbed areas as soon as possible after construction is completed.

Vegetation Mitigation Measures

- Construction areas would be restored and re-vegetated with native species.

MacArthur Boulevard Shared-Use Path at Glen Echo Park

- Impacted native trees in excess of six inches diameter at breast height (dbh) would be replaced by trees of equivalent dbh or through monetary compensation as approved by the Regional Natural Resources Manager. Fifty-three trees have been identified for a total of 515 inches dbh.
- Prior to being off-loaded in Glen Echo Park, all equipment would be inspected by approved NPS staff to prevent possible non-native plant/plant seed introduction.
- Non-native vegetation would not be introduced. Disturbed areas would be monitored for three years following construction to identify growth of noxious weeds or non-native vegetation. Treatment of non-native vegetation would be completed in accordance with NPS-13, Integrated Pest Management Guidelines.
- Vegetation impacts and potential compaction and erosion of bare soils would be minimized by replacement of topsoil in as near the original location as possible, followed by scarification, mulching, and seeding/planting with species native to the immediate area.
- Remedial actions could include installation of erosion-control structures, reseeding and/or replanting the area, and controlling non-native plant species.
- Topsoil, straw, etc. to be used on the site must be certified weed/seed free.
- To maximize vegetation restoration efforts after completion of construction activities, the following measures would be implemented:
 - Salvage topsoil from construction areas for reuse during restoration of disturbed areas.
 - Monitor re-vegetation success for three years following construction, implementing remedial and control measures as needed.

Wildlife Mitigation Measures

- Pre- and post-construction water quality sampling would be used to monitor water quality.
- Native plants would be used to replace cleared vegetation.

Cultural Resource Mitigation Measures:

- A Phase 1 Archeological Survey was completed in areas where ground disturbance is anticipated. The results of the survey indicate that there were no identifiable diagnostic archeological materials, i.e. items over 100 years of age, within the soils excavated during the survey. However, the following mitigation measures would be implemented.
 - If previously unknown archaeological resources are discovered during project construction, the George Washington Memorial Parkway Cultural Resources Program Manager would be contacted immediately. All work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and an appropriate mitigation strategy developed, if necessary. The significance of these finds would be assessed in consultation with the Maryland State Historic Preservation Office (SHPO).
 - In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3002) of 1990 would be followed. All human remains, funerary objects, sacred objects, or objects of cultural patrimony would be left in place until the culturally affiliated tribe(s) was consulted and an appropriate mitigation or recovery strategy developed between the affiliated tribes, SHPO, and the NPS.

- Rehabilitation through adaptive re-use of the trolley bridge would be undertaken in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. Initial tasks include photographic documentation of the current condition of the structure to update documentation included in the 1979 American Council of Historic Preservation (ACHP) Summary Form prior to the initiation of work.
- Landscaping treatments would include native plants and local materials so as to be compatible with the historic settings and surroundings.

Transportation Mitigation Measures:

- Signing for the shared-use path will be compliant with the Manual of Uniform Traffic Control Devices (MUTCD) and Federal Highway Administration recommendations to ensure the safety of all users and to reduce conflicts between vehicles, cyclists, and pedestrians.
- Pavement markings at all intersections of the shared-use path and local roads and at the crossing in the upper parking lot will meet current standards to ensure visibility.

Alternatives Considered but Dismissed

Four action alternatives were identified during the design process and internal and public scoping. Three of these were determined to be unreasonable and were therefore not carried forward for analysis in this EA. Justification for eliminating these alternatives from further analysis was based on factors relating to:

- Conflicts with already-established park uses
- Severe impact on environmental or historic resources
- Technical or economic infeasibility
- Inability to meet project objectives or resolve need
- Duplication with other, less environmentally damaging or less expensive alternatives
- Conflict with an up-to-date and valid park plan, statement of purpose and significance, or other policy, such that a major change in the plan or policy would be needed to implement
- Unavoidable adverse environmental impacts

The following alternatives were considered but dismissed:

Alternative 3: Under this alternative, the original design, MCDOT would construct the originally planned typical section for the proposed improvements in the area. The planned typical section on MacArthur Boulevard included a ten-foot travel lane, a three-foot shoulder for experienced cyclists, five feet of green space, and an eight-foot off-road shared-use path for recreational cyclists and pedestrians. This alternative was dismissed due to the need to construct a new retaining wall between Oxford Road and the upper parking lot on MacArthur Boulevard to support the additional thirteen feet of space needed for the proposed typical section. The wall would have been approximately 150 feet long and approximately 10 feet high. It would have required extending the existing culvert for the Minnehaha Branch a minimum of thirteen feet, as well as the removal of mature sycamore trees in the stream valley adjacent to MacArthur Boulevard.

This alternative would result in major adverse impacts on topography as a result of the construction of the retaining wall and addition of fill. Hydrology and water quality would be impacted as the extension of the culvert would cover 13 feet of the stream channel. Native soils along the edge of MacArthur

Boulevard would be covered with clean fill and many mature trees would be cleared to accommodate construction activities, as well as the final trail. Scenic and historic resources would be impacted as a result of the new roadway section and the wall, as well as the removal of the trees. In addition, the cost of constructing the retaining wall was economically infeasible.

Alternative 4: Under this alternative, the shared-use path would follow the same path as the Preferred Alternative to the bridge but would continue along the Cabin John ROW for approximately 300 feet, cross the access road and reconnect to the existing path near the original entrance to Glen Echo Park. This alternative was dismissed based on its conflict with the use of the access road and parking lot. Although this alternative would bring travelers closer to the original entrance of Glen Echo Park and would not be located within the upper parking area, a retaining wall measuring approximately four feet in height would be needed across the access road in order to meet ADA requirements. This would make it impossible for vehicles to use the access road, which is not acceptable as it is the only access for deliveries and emergency equipment destined for Glen Echo Park. The introduction of the retaining wall at this location would also result in major visual impacts on the adjacent Glen Echo Park Historic District.

Alternative 5: This alternative is similar to Alternative 4 but would cross the access road approximately 375 feet south of the bridge. The retaining wall needed to meet ADA requirements at this location would be approximately 10 feet in height at the crossing and would also cut off all vehicular traffic. This alternative would have impacts similar to those of Alternative 4, but would be more expensive.

NPS also considered two additional options that would enhance the safety of the upper parking lot crossing. The first option would close the existing upper lot entrance and relocate it further south on MacArthur Boulevard so that it would be further away from the proposed shared-use path. The second option would keep the existing entrance and add a second entrance further south and create a one-way loop in the lot. However, these options were not technically feasible as the existing entrance of the upper lot is the only location near the lot that is sufficiently reinforced to protect the aqueduct under MacArthur Boulevard from the large trucks that use the access road.

Figure 5 - View of Access Road and Upper Lot from Proposed Crossing of Alternative 4



Environmentally Preferable Alternative

The NPS is required to identify the environmentally preferable alternative in its NEPA documents for public review and comment. The NPS, in accordance with the Department of the Interior policies contained in the Departmental Manual (516 DM 4.10) and CEQ's *NEPA's Forty Most Asked Questions*, defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in NEPA (Section 101(b) (516 DM 4.10). In their *Forty Most Asked Questions*, CEQ further clarifies the identification of the environmentally preferable alternative, stating “Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources” (Q6a).

After completing the environmental analysis, the No Action Alternative is the environmentally preferable alternative, because it would cause the least damage to the biological and physical environment and would not introduce new elements to the historic trolley bridge.

A summary of the environmental consequences follows in **Table 1**.

Table 1 – Summary of Environmental Consequences

Impacted Resource	Alternative 1 -- No Action	Alternative 2 – Preferred Alternative
Topography	No direct or cumulative impacts	Minor, long term adverse impacts to topography due to addition of fill and re-grading Cumulative impacts would be minor, long term and adverse
Hydrology and Water Quality	No impacts to hydrology Minor, long term adverse impacts related to runoff and the deteriorating bridge	Minor, long term adverse impacts on hydrology due to minor changes in the drainage pattern Minor, long term adverse impacts on water quality due to runoff Moderate, short term impacts associated with the temporary diversion of the stream during construction Cumulative impacts on hydrology and water quality would be minor

Impacted Resource	Alternative 1 -- No Action	Alternative 2 – Preferred Alternative
Wetlands	No direct or cumulative impacts to wetlands	<p>Minor, short term adverse impacts to the Minnehaha Branch due to the temporary diversion of the stream</p> <p>Cumulative impacts would be minor, long term, and adverse</p>
Vegetation	No direct or cumulative impacts to vegetation	<p>Minor, long term adverse impacts from clearing; cumulative impacts would be minor, long term and adverse</p>
Wildlife	No direct or cumulative impacts to wildlife	<p>Minor, long term adverse impacts to wildlife from clearing of vegetative habitat</p> <p>Cumulative impacts would be minor, long term and adverse</p>
Scenic Resources	No direct or cumulative impacts to scenic resources	<p>Minor, long term adverse impacts on scenic resources from clearing</p> <p>Cumulative impacts would be minor, long term and adverse</p>
Archeological Resources	No direct or cumulative impacts to known archeological resources	<p>No impacts to significant archeological resources</p> <p><i>Per Section 106 of the NHPA, no adverse effect</i></p>
Historic Structures and Districts	<p>No direct or cumulative impacts to the Clara Barton NHS or the Glen Echo Park Historic District</p> <p>Minor adverse impacts to the trolley bridge</p>	<p>Minor adverse impact on the bridge due to the alteration of the deck and the addition of a hand railing.</p> <p>Potential minor adverse visual impact on the Glen Echo Park Historic District from alterations to the bridge</p> <p>Cumulatively, there would be long term minor adverse impacts to historic structures</p> <p><i>Per Section 106 of the NHPA, no adverse effect</i></p>

MacArthur Boulevard Shared-Use Path at Glen Echo Park

Impacted Resource	Alternative 1 – No Action	Alternative 2 – Preferred Alternative
Cultural Landscapes	No direct or cumulative impacts to the cultural landscape	<p>Long term minor adverse impacts as a result of changes to the trolley bridge, vegetation, and topography.</p> <p>Cumulative impacts would be long term, minor, long term and adverse.</p> <p><i>Per Section 106 of the NHPA, no adverse effect</i></p>
Visitor Use and Experience	No direct or cumulative impacts to visitor use and experience	<p>Minor, short term adverse impacts from noise and construction activities</p> <p>Cumulative impacts would be short term, minor and adverse</p>
Transportation	<p>Minor adverse impacts to the transportation network from unaddressed safety issues</p> <p>Cumulative impacts as a result of unaddressed safety issues would be minor and adverse.</p>	<p>Minor, short term adverse impacts to the transportation network from unfamiliar crossing in the upper parking lot.</p> <p>Cumulative impacts would be beneficial given proper markings and signage along and approaching the trail section that traverses the upper parking lot.</p>
Human Health and Safety	<p>Minor, long term adverse impacts to visitor safety from unaddressed safety issues</p> <p>Cumulative impacts from as a result of unaddressed safety issues would be minor, long term and adverse.</p>	<p>Minor, short term adverse impacts to visitor safety from the new crossing in the upper parking lot</p> <p>Cumulative impacts would be short term and adverse</p>
Park Operations and Management	No direct or cumulative impacts to park management and operations	<p>Moderate adverse impacts to park management and operations from new maintenance requirements for the shared-use path and the rehabilitated bridge.</p> <p>Cumulative impacts would be moderate and adverse</p>

AFFECTED ENVIRONMENT

This chapter of the EA describes existing environmental conditions in the areas potentially affected by the alternatives evaluated. The impact analysis is presented in the Environmental Consequences chapter of this EA.

Topography

The project site generally slopes from east to west. However, there are steep slopes between 15 and 25 percent along both sides of Minnehaha Branch, with the bottom of the channel approximately 35 feet below the bottom of the trolley bridge. Steep slopes are also found between the upper parking lot and the Cabin John ROW south of the bridge where the elevation change is approximately six feet over a distance of approximately fifty feet.

Hydrology and Water Quality

The project site is bisected by a segment of Minnehaha Branch, a tributary of the Potomac River. It is a perennial stream that originates outside the project site and conveys flow southwest through a culvert beneath MacArthur Boulevard. The Code of Maryland Regulations (COMAR) Section 26.08.02 classifies Minnehaha Branch as a Use I-P Waterway for Public Water Supply, Water Contact Recreation and Protection of Aquatic Life. For permitting purposes, Minnehaha Branch has been identified as a Water of the US (STRAUGHAN 2006). There is a drainage ditch along the north side of the Cabin John ROW south of the trolley bridge that appears to carry stormwater towards Minnehaha Branch.

Figure 6 - View of Minnehaha Branch



Stream sediment and paint sampling were conducted in March 2010 to establish baseline conditions of metals in the sediment, which can be used to indicate water quality in Minnehaha Branch. Two sediment samples were collected – one upstream of the bridge and one downstream. A paint sample was recovered from the trolley bridge to determine what contaminants may be present in the existing paint.

The sediment samples upstream of the trolley bridge contained concentrations of metals below the USEPA Region III Biological Technical Assistance Group (BTAG) screening benchmarks for freshwater sediment for all metals sampled except zinc. The zinc concentrations found in the upstream sample were above the BTAG benchmark of 121 mg/kg. The metal concentrations in the composite sample collected downstream of the bridge were all below BTAG benchmark values. Considering that contaminants are typically carried downstream, it appears that the elevated zinc levels upstream of the bridge are from sources other than the bridge.

Wetlands

Executive Order 11990 (Protection of Wetlands) directs federal agencies to avoid undertakings or providing assistance for new construction in wetlands unless there is no practicable alternative to construction or the proposed action includes all practicable measures to minimize harm to wetlands, which may result from its use. NPS Director's Order #77-1 establishes the policies, requirements, and standards through which NPS will meet its responsibilities to protect and preserve wetlands. In addition to the adoption of a "no net loss of wetlands" goal, the NPS officially adopted the Cowardin et al (1979) wetland classification system as the NPS standard for defining, classifying and inventorying wetlands (NPS 2002).

The Minnehaha Branch is the only wetland within the proposed project limits. It is classified as a riverine wetland system because it flows through a channel. The rocky banks of the channel define the limit of the wetland area. It is further classified as an upper perennial subsystem as there is no tidal influence and some water flows through the channel throughout the year. It also exhibits another quality of the upper perennial subsystem in that it flows through a steep channel with no floodplain development.

The portion of Minnehaha Branch that is located within the project site falls within the rock bottom class of wetlands because more than 75% of the area within the wetland boundaries is covered with stones, boulders or bedrock and less than 30% of the area has vegetative cover. Its subclass is bedrock and the dominant life forms would be animals that either attach themselves to the rocky surface or hide in the rocky crevices or under rocks. Mosses and lichens are found along the channel banks.

Vegetation

A field survey of existing vegetation within the project site was conducted in September 2010 to document the size and types of trees, as well as the varieties of shrubs and ground covers. The dominant tree species observed was the box elder. Other tree species observed were American and slippery elm, black cherry, tree of heaven, black locust, sycamore, and hickory. Tree of heaven is a non-native species in the northeast United States. Most of the trees along the Cabin John ROW have been topped (i.e. the canopies have been severely pruned) to accommodate existing power lines. Many are engulfed by invasive vines such as English ivy and oriental bittersweet.

Shrubs in the project site include spicebush, Tatarian honeysuckle, and multi-flora rose. The latter two are considered to be weedy or invasive in the Northeastern US (USDA 2010).

Wildlife

Wildlife observed in Glen Echo Park includes mice, moles, opossums, gray squirrels, rats, chipmunks, foxes, deer, black snakes, garter snakes, skinks, bats and snapping turtles. Rock dove, mourning dove, barred owl, pileated and downy woodpeckers, American crow, house wren, Carolina wren, northern mockingbird, northern cardinal, house sparrow, house finch, American goldfinch, and European starling are among the bird species observed (NPS 2001).



Topped trees with ivy and other vines near Oxford Road along the proposed alignment of the preferred alternative

Coordination with USFWS in 2003 confirmed that no federally proposed or listed endangered or threatened species are known to exist within the project site. Follow-up coordination to confirm the current status was initiated in September 2010. Response from USFWS is pending. Coordination with MD DNR in 2003 indicated that there were numerous records of species of concern; however, it was determined that only minimal impacts would be anticipated.

Scenic Resources

MacArthur Boulevard is part of the Chesapeake & Ohio (C&O) Canal Scenic Byway, which is one of 19 designated Scenic Byways in Maryland. The Maryland Byways Program was established to “enhance quality of life for Maryland’s citizens, engender pride and improve visitor appeal of the state’s most scenic, cultural and historic roads.” MacArthur Boulevard was included in the designation due to its proximity to the Potomac River, as well as for the access it provides to a variety of natural, cultural, and historic resources along its route, including Glen Echo Park and the Clara Barton NHS.

The MacArthur Boulevard corridor is characterized by woodland interspersed with residential and commercial uses. In some locations along MacArthur Boulevard, the Cabin John ROW is still visible. In the vicinity of the proposed action, the original front entrance to Glen Echo Park is a dominant feature on the southbound side of the roadway. Woodlands are located east of MacArthur Boulevard across from the park entrance north to Goldsboro Road. There is a small commercial center at the intersection of MacArthur Boulevard and Goldsboro Road. Single family residences are located north and west of the intersection.

Archeology

Due to its geographic location on bluffs overlooking the Potomac River and situated along the Minnehaha Branch, the project site is a high probability candidate as a site of prehistoric American Indian activity. Historic development in the vicinity, evident from the early 18th century land patents that included the project site, also present the likelihood of finding archeological resources in the project's area of potential effect (APE), as shown in Figure 8. Therefore, archeological investigations in the project APE were recommended to identify cultural resources and historic properties, including those determined eligible for, or listed on, the NRHP in accordance with NEPA, Section 106 of the NHPA, and NPS policies and guidelines.

Archeological investigations in the vicinity of Glen Echo Park conducted by Franklin and Gregory (1979), Ziek (1982), Cheek and Culhane (2002) and Virta (2009), as well as archeological records of the Maryland Historical Trust and National Park Service, note the existence of prehistoric American Indian sites, ranging from the archaic through the woodland periods, on terraces and bluffs along the Potomac River's Maryland shoreline and atop the palisades overlooking the river within a few miles upstream and downstream of GLEC and CLBA. Eleven archeological sites with prehistoric components have been identified within a roughly 5-mile long corridor from the I-495 interchange with the Clara Barton Parkway west of GLEC/CLBA through the Maryland/Washington, DC boundary to the east of GLEC/CLBA. The nearest recorded site with a prehistoric American Indian component is 18MO154, located on NPS property nearby the project area, and includes an Archaic point and lithic scatter (Seidel 1978, Ziek 1982).

Historic archeological resources associated with development of the area and located in the project APE are known and have been documented. Domestic structures and outbuildings associated with the agricultural use of the locale from the early 18th century land patents through mid-19th century farmsteads were known to exist in the vicinity. Activities associated with the 19th and early 20th century C & O Canal operations and the mid-19th century construction of the Washington Aqueduct by the U.S. Army Corps of Engineers also took place nearby. Late 19th century development of the Glen Echo Chautauqua, the subsequent amusement park, and construction of the Clara Barton House and the town of Glen Echo took place adjacent to the project area. From the late 19th through the mid-20th century, an electric railroad/trolley system was constructed and operated within the APE (Anderson 2006, Cook 2009, Smith 2008, Virta 2009). The Washington Aqueduct, the Clara Barton National Historic Site, and the Glen Echo Park Historic District are listed on the NRHP. The electric railroad/trolley system remains are listed as a historic site in the Maryland Historic Sites Inventory by the Maryland Historic Trust (1979) and as a historic site for Montgomery County by the Maryland National Capital Park and Planning Commission (1976) and identified as the Cabin John Right of Way/Brookmont Trolley ROW.

A Phase I Archeological Survey was performed by the National Park Service (Virta 2012 draft) on behalf of the Montgomery County Department of Transportation and consisted of conducting background research and excavating shovel test pits (STPs) to determine if significant archeological resources were present in the APE. Results of the investigations indicate that a large portion of the APE was graded and prepared for rail tracks associated with the electric railroad/trolley system that provided service out to Glen Echo and Cabin John. This system began with the ca. 1896 West Washington and Great Falls Electric Railroad, which was succeeded by other companies and ended the run to Glen Echo and Cabin John as DC Transit in 1960 (Cook 2009).

Large amounts of crushed stone gravel, possibly railroad ballast, combined with sooty debris, including coal, clinkers, and slag, were encountered in the majority of the shovel test pits (STPs) excavated. This material was of unknown age but most likely related to the electric railroad/trolley operations. Disturbed soils containing modern debris, presumably associated with the construction of the Oxford Road and MacArthur Boulevard intersection, were encountered in one STP. Soils excavated from all the STPs contained no identifiable diagnostic archeological materials, in other words, items over 100 years of age.

Figure 7 Area of Potential Effect for Archeology



Historic Structures and Districts

Glen Echo Park Historic District – The Glen Echo Park Historic District is located within Glen Echo Park, which is administered by the NPS. Its arts and culture programs are operated by Glen Echo Park Partnership for Arts and Culture. It was listed on the NRHP in 1984 based on its significance as a site of the late 19th century Chautauqua Movement, as well as a rare surviving regional example of an early 20th century amusement park of architectural significance and as a recreational facility for area residents and visitors. The district consists of nine contributing elements, including the individually listed Chautauqua Tower and Dentzel Carousel. The remaining seven structures are the remnants of the Crystal Pool, the Spanish Ballroom, the North Arcade, the Cuddle Up Pavilion, the Amusement Park Maintenance Shop (known as the Yellow Barn), the Picnic Grove, and the Bumper Car Pavilion (NPS, NRHP, 1984). The district is adjacent to the project site are but none of the contributing elements are within it.

Figure 8 - View of Original Entrance to Glen Echo Park



Clara Barton National Historic Site - The Clara Barton National Historic Site commemorates the life of Clara Barton, founder of the American Red Cross. The house in Glen Echo was constructed in 1891. It served as a warehouse for disaster relief supplies, and beginning in 1897, was also Barton's home and the headquarters for the American Red Cross. From Glen Echo, she organized and directed American Red Cross relief efforts for victims of natural disasters and war until she resigned as president in 1904. Barton lived in the house until her death in 1912. The Clara Barton House was made a National Historic Landmark in 1966 and the Clara Barton National Historic Site was established in the National Park Service in 1975. The site is administered by the GWMP (NPS 2001).

Brookmont Trolley ROW (Cabin John ROW) – The Cabin John ROW is the unused street car ROW of the Washington Railway and Electric Company's electric street railway that ran from the Maryland/Washington, DC line to the Cabin John Bridge. The Cabin John ROW consists of a rail-less railway bed, a number of bridges, and in some cases only the bridge abutments. The trestle bridge over Minnehaha Branch is one of the remaining bridges; it is currently inaccessible to the general public. The railway bed can be seen in some locations along MacArthur Boulevard, and is considered a distinctive feature of the landscape. It was a prominent component of the regional transportation network for over 60 years. Neither the right of way nor the bridge is listed in the NRHP. However, they are both eligible for listing as they are over 50 years old and are included in the Maryland Inventory of Historic Places. The bridge over Minnehaha Branch would be rehabilitated and reused to carry cyclists and pedestrians (MHT 2010).

Cultural Landscapes

NPS has completed a Cultural Landscape Inventory for the Glen Echo Park-Clara Barton House Cultural Landscape. This landscape retains integrity to its historic period of significance, which is 1888 to 1968. Historic structures, such as the main entrance to Glen Echo Park (GEP), still exist and are currently in use, although many have been altered or removed. Historic circulation routes within GEP and between the two sites are still evident. MacArthur Boulevard, originally known as Conduit Road, is still used today and the Cabin John ROW is visible along much of MacArthur Boulevard.

Among the natural features that contribute to the cultural landscape are the topography and the restored section of Minnehaha Branch southwest of the project site. Minnehaha Branch was restored in 1991 after having been diverted through a culvert and covered with a parking area since the late 1950s. Views of the restored Branch, the west entrance to GEP, and the Clara Barton House approximate the scenic vistas of the original property owners and Clara Barton. The east entrance to GEP and the trolley car located there on the old trolley right-of-way contribute to the historic character of the landscape. Though the vegetation throughout the park is not a contributing element, it is compatible with the interpretation of the park as a 20th century amusement park and 19th century Chautauqua assembly. In addition, it serves to screen views between the park and modern development. Identified archaeological remains are also considered to contribute to the cultural landscape. As noted in the draft inventory, “while there have been some changes to the property and the loss of several important features, all aspects of integrity remain represented on the landscape today” (NPS 2011).

Visitor Use and Experience

Glen Echo Park offers a wide range of programs and activities that are associated with the liberal arts, as well as the interpretation of the park’s history and significance. The activities can be classified as performances, classes, dances, visitation, and others. Approximately 425,000 people visited the park in 2009 (GEPPAC 2009). Of those who visited in 2009,

- 64,000 attended social dances,
- 80,000 rode the carousel,
- 10,000 participated in nature programs,
- 21,000 attended festivals and special events,
- 17,000 attended exhibitions,
- 7,000 enrolled in classes, and
- 115,000 attended family-oriented theater productions.

Statistics for 2010 available at the time of this writing indicate that approximately 382,000 people visited GEP and 7,982 people visited the Clara Barton NHS (NPS 2010). Of these, 2,716 visitors attended the interpretive programs offered.

Glen Echo Park's peak season is from May to September when visitors, especially families with children, come to the park during the day to see performances, ride the carousel and have picnics. In addition, there are a variety of day camps in the summer months. When the carousel is not in operation, typically from October to April, visitation tends to be relatively low. Classes tend to be held during the evening

hours throughout the year. Typically, the park hosts three or more cultural festivals that attract visitors from the entire metropolitan area and generate the largest single-event visitation (NPS 2001).

The Clara Barton National Historic Site, which is adjacent to Glen Echo Park, is shown by guided tours, which are held daily on the hour between 10 AM and 4 PM. Visitors are welcome to stroll around the grounds at any time. Approximately 7,900 visitors toured the house in 2010 (NPS, 2010).

Transportation

MacArthur Boulevard and Goldsboro Road are the two primary roadways in the vicinity of the project site. MacArthur Boulevard is a two-lane undivided urban minor arterial and is the northern/eastern boundary of the project study area. It provides connections to the Clara Barton Parkway east of Glen Echo Park and 75th Street to the northeast. Traffic data from 2009 indicates that, on average, approximately 12,000 vehicles use this section of MacArthur Boulevard every day (MDSHA 2009).

Goldsboro Road (MD 614) is also classified as a two-lane undivided urban minor arterial and runs northeast from its intersection with MacArthur Boulevard to connect to Massachusetts Avenue, River Road and Bradley Boulevard. Traffic count data from 2009 indicates that approximately 11,200 vehicles travel along this segment every day (MDSHA). The posted speed limit on both roads is 35 miles per hour and there are no traffic signals in the vicinity of the project site.

Average annual daily traffic (AADT) counts are slightly lower than the annual average weekday traffic (AAWDT) counts, indicating that much of the weekly traffic is commuter-related (MDSHA).

Oxford Road is a local road that provides access to the residential neighborhoods of the Town of Glen Echo and aligns with the entrance to the main visitor parking area for Glen Echo Park and the Clara Barton National Historic Site. A second entrance to the park is located just south of the intersection of MacArthur Boulevard and Goldsboro Road. This entrance provides direct access to the upper parking lot used by visitors, students and employees of Glen Echo Park. Shuttle busses use the lot as a drop-off area for visitors attending some of the larger events hosted by the park. This parking lot is also used as an alternate route for trucks traveling southbound on MacArthur Boulevard that exceed the posted weight limit of six tons. The entrance is also the sole access point for large delivery trucks and emergency equipment destined for Glen Echo Park. The access road runs from the upper lot past the original amusement park entrance and connects with Tulane Avenue, which is the third entrance to Glen Echo Park.

Montgomery County Transit “Ride On” provides public transit service to Glen Echo. Route 29 stops on southbound MacArthur Boulevard at Goldsboro Road seven days a week.

An existing bikeway follows the southbound lanes of MacArthur Boulevard in the vicinity of the project site. Commuter cyclists use the path during the morning and evening rush hours and recreational cyclists use the path



Figure 9 – Southbound MacArthur Boulevard looking towards Goldsboro Rd.

daily. Pedestrians use the bikeway for recreational walking and to get to local destinations (MCDOT 2004). Safety issues along the bikeway have been well documented by MCDOT and other community groups and have led to planning for corridor-wide improvements. Safety concerns include driver/cyclist conflicts at intersections due to a lack of proper signage for both cars and bikes, particularly near the intersection of MacArthur Boulevard and Goldsboro Road, illegal parking on the bikeway, lack of separation between vehicles and bicycles, and substandard pavement conditions (MCDOT 2004).

GEP and CBNHS share a main visitor parking lot that has 192 regular paved parking spaces and eleven handicap spaces. Along the Cabin John ROW, there is an upper parking lot between the ROW and MacArthur Boulevard with 46 regular and four handicap parking spaces. Another lot near the Yellow Barn has 18 regular and five handicap parking spaces (NPS 2011).

Human Health and Safety

The existing bikeway on MacArthur Boulevard does not meet current standards for a shared-use path. Safety issues with its current configuration along the roadway include the following:

- Tubular channelization devices provide the only separation between bikeway users and traffic on MacArthur Boulevard in the vicinity of the project site. While they mark the path, they cannot stop a vehicle from running off the road onto the bikeway. The American Association of State Highway and Transportation Officials (AASHTO) recommends *against* providing shared-use paths directly adjacent to the road, often referred to as "sidepaths", in its Guide for the Development of Bicycle Facilities (AASHTO, 1999).
-
- The physical condition of pavement and markings is poor. Worn markings make it difficult for drivers to see the trail from dusk to dawn. Poor pavement conditions could cause a cyclist to lose control of the bicycle and with virtually no separation from traffic could sway or fall into the path of a vehicle on MacArthur Boulevard.

Safety issues for relevant to the NPS are related to the upper parking lot along MacArthur Boulevard, where limited visibility around the curve heading southbound on MacArthur Boulevard at Goldsboro Road creates an unsafe condition for motorists and cyclists at the entrance located on the inside curve. The entrance is unmarked and there are no warning signs prior to the entrance. The presence of the bikeway is not marked for vehicles entering and exiting the parking lot.

The existing bikeway is the only pedestrian facility for visitors who use the upper parking area adjacent to MacArthur Boulevard to reach the original entrance of the Park; however, this is not a direct route. Visitors were observed walking through the lot and along the access drive to get to the original entrance of the Park.

Park Management and Operations

At the present time, the NPS is responsible for the overall management of Glen Echo Park and the Clara Barton NHS and the protection and interpretation of their natural and cultural resources. GEPPAC manages the arts and dance programs, produces festivals and special events and assists with the management and maintenance of park facilities. Currently park staff spends minimal resources along the

Cabin John ROW, primarily maintaining the adjacent turf areas, which are used for overflow parking during large events.

The US Army Corps of Engineers (USACE) owns the right-of-way where MacArthur Boulevard was constructed, including the upper parking lot along the roadway. MCDOT is responsible for maintaining the roadway, while NPS is responsible for maintaining the upper parking lot, which was repaved and striped during the fall of 2010. The USACE also owns and maintains the Washington Aqueduct, which is located under the center of MacArthur Boulevard, and a second, unreinforced aqueduct that is located approximately 30 feet southwest from the road's centerline. Construction above these conduits is restricted due to their shallow depths.

ENVIRONMENTAL CONSEQUENCES

This Environmental Consequences chapter analyzes the impacts that would result from implementing either of the alternatives considered in this EA/AOE. This chapter also includes definitions of impact thresholds (e.g., negligible, minor, moderate, and major), methods used to analyze impacts, and the analysis methods used for determining cumulative impacts. As required by the Council on Environmental Quality (CEQ) regulations implementing the NEPA, a summary of the environmental consequences for each alternative is provided in **Table 1**, which can be found in the Alternatives chapter. The resource topics presented in this chapter, and the organization of the topics, correspond to the resource discussions contained in the Affected Environment chapter.

General Methodology for Establishing Impact Thresholds and Measuring Effects by Resource

The following elements were used in the general approach for establishing impact thresholds and measuring the effects of the alternatives on each resource category:

- general analysis methods as described in guiding regulations, including the context and duration of environmental effects;
- basic assumptions used to formulate the specific methods used in this analysis;
- thresholds used to define the level of impact resulting from each alternative;
- methods used to evaluate the cumulative impacts of each alternative in combination with unrelated factors or actions affecting park resources; and

These elements are described in the following sections.

General Analysis Methods

The analysis of impacts follows CEQ guidelines and NPS Director's Order #12 procedures (NPS 2001) and is based on the underlying goal of supporting the exploration of the park's place in the national history and providing for long term protection, conservation, and restoration of natural and cultural resources. This analysis incorporates the best available scientific literature applicable to the region and setting, the species being evaluated, and the actions being considered in the alternatives.

As described in the Purpose and Need chapter, the NPS created an interdisciplinary team to provide important input to the impact analysis. For each resource topic addressed in this chapter, the applicable analysis methods are discussed, including assumptions and impact intensity thresholds.

Assumptions

Several guiding assumptions were made to provide context for this analysis. These assumptions are described below.

Geographic Area Evaluated for Impacts (Area of Analysis) – A project site that encompassed the action alternative was developed and is illustrated in Figure 2. It is located in southwest Montgomery County, Maryland in the Town of Glen Echo, approximately two and a half miles outside of Washington, DC. MacArthur Boulevard, a major commuter route between county suburbs and Washington, DC, delineates

the northern and eastern boundaries of the project site. Oxford Road is the western boundary. The southern boundary is located approximately forty feet from the center line of the proposed alignment, which follows the Cabin John ROW. The area of analysis may extend beyond the park's boundaries for some cumulative impact assessments. The specific area of analysis for each impact topic is defined at the beginning of each impact topic discussion.

Impact Thresholds

Determining impact thresholds is a key component in applying NPS *Management Policies* and Director's Order #12. These thresholds provide the reader with an idea of the intensity of a given impact on a specific topic. The impact threshold is determined primarily by comparing the effect to a relevant standard based on applicable or relevant, or appropriate regulations or guidance, scientific literature and research, or best professional judgment. The impact thresholds are defined for adverse impacts.

Potential impacts of the alternatives are described in terms of type (beneficial or adverse); context; duration (short or long term); and intensity (negligible, minor, moderate, major). Definitions of these descriptors include:

Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.

Adverse: A change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.

Context: Context is the affected environment within which an impact would occur, such as local, park-wide, regional, global, affected interests, society as whole, or any combination of these. Context is variable and depends on the circumstances involved with each impact topic. As such, the impact analysis determines the context, not vice versa.

Duration: The duration of the impact is described as short term or long term. For each impact topic, short term duration is defined as recovery in less than one year. Long term duration is defined as recovery taking longer than one year.

Intensity: Because definitions of impact intensity (negligible, minor, moderate, and major) vary by impact topic, intensity definitions are provided separately for each impact topic analyzed.

Cumulative Impacts Analysis Method

The CEQ regulations implementing the NEPA require the assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are 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 nonfederal) or person undertakes such other actions" (40 CFR 1508.7). As stated in the CEQ handbook, "Considering Cumulative Effects" (CEQ 1997), cumulative impacts need to be analyzed in terms of the specific resource, ecosystem, and human community being affected and should focus on effects that are truly meaningful. Cumulative impacts are to be considered for each reasonable alternative.

The analysis of cumulative impacts was accomplished using four steps:

Step 1 – Identify Resources Affected – Fully identify resources affected by any of the alternatives. These include the resources addressed as impact topics.

Step 2 – Set Boundaries – Identify an appropriate spatial and temporal boundary for each resource.

Step 3 – Identify Cumulative Action Scenario – Determine which past, present, and reasonably foreseeable future actions to include with each resource.

Step 4 – Cumulative Impact Analysis – Summarize the combined impacts of the actions identified in Step 3 plus impacts of the proposed action to arrive at the total cumulative impact. This analysis is included for each resource addressed as impact topics.

Table 2 summarizes the past, present, and reasonably foreseeable future actions that could affect the various resources at the park, along with the plans and policies of both the park and surrounding jurisdictions, which were discussed in the Purpose and Need chapter. Additional explanation for most of these actions is provided in the narrative following the table.

Table 2 - Cumulative Impact Scenario

Impact Topic	Study Area	Past Actions	Present Actions	Future Actions
Topography	Project Site	Removal of the trolley tracks Reconstruction of parking lot between GEP and CBNHS Restoration of Minnehaha Branch	Improvements to the upper parking lot	Build a new maintenance facility on park land
Hydrology and Water Quality	Project Site	Reconstruction of parking lot between GEP and CBNHS Restoration of Minnehaha Branch	Non-point source pollution from runoff	Build a new maintenance facility on park land
Wetlands	Project Site	Restoration of Minnehaha Branch	Non-point source pollution from runoff	Non-point source pollution from runoff

Impact Topic	Study Area	Past Actions	Present Actions	Future Actions
Vegetation	Project Site and Glen Echo Park	Topping of trees under electric lines along the Cabin John ROW Restoration of Minnehaha Branch	Improvements to the upper parking lot Removal and topping of trees under electric lines along the Cabin John ROW	Build a new maintenance facility on park land Continued topping of trees along the Cabin John ROW
Wildlife	Project Site and Town of Glen Echo	Restoration of Minnehaha Branch	Removal and topping of trees under electric lines along the Cabin John ROW	Continued topping of trees along the Cabin John ROW
Scenic Resources	Project Site and Town of Glen Echo	Restoration of Minnehaha Branch	Removal and topping of trees under electric lines along the Cabin John ROW	
Archeological Resources	Project Site and Glen Echo Park	Reconstruction of parking lot between GEP and CBNHS Restoration of Minnehaha Branch	Improvements to the upper parking lot	Build a new maintenance facility on park land
Historic Structures and Districts	Project Site Area and Glen Echo Park	Reconstruction of parking lot between GEP and CBNHS Restoration of Minnehaha Branch	Complete draft Cultural Landscape Inventory	Replace roofs of Bumper Car Pavilion, the Carousel, and the Clara Barton House Repave pathways in Glen Echo Park

MacArthur Boulevard Shared-Use Path at Glen Echo Park

Impact Topic	Study Area	Past Actions	Present Actions	Future Actions
Cultural Landscapes	Project Site, Town of Glen Echo, MacArthur Boulevard; Glen Echo Park, and Clara Barton NHS	Closure of Glen Echo Amusement Park Establishment of GEPPAC Abandonment of trolley and removal of tracks Reconstruction of parking lot between GEP and CBNHS Restoration of Minnehaha Branch	Clearing of undergrowth and trees along MacArthur Boulevard in front of Glen Echo Park entrance Removal and topping of trees under electric lines along the Cabin John ROW and the upper parking lot Complete draft Cultural Landscape Inventory	Replace roofs of Bumper Car Pavilion, the Carousel, and the Clara Barton House Repave pathways in Glen Echo Park
Visitor Use and Experience	Project Site, Town of Glen Echo, Glen Echo Park, and Clara Barton NHS	Establishment of GEPPAC	Expansion of all types of programs at Glen Echo Park Install new visitor information signage	Repave pathways in Glen Echo Park
Transportation	Project Site, Town of Glen Echo, Glen Echo Park	Removal of old trolley tracks Reconstruction of parking lot between GEP and CBNHS	Improvements to the upper parking lot	Repave pathways in Glen Echo Park
Human Health and Safety	Project Site; Town of Glen Echo	Stabilization of existing structures within Glen Echo Park	Improvements to the upper parking lot	Repave pathways in Glen Echo Park
Park Operations and Management	Project Site; Glen Echo Park	Establishment of GEPPAC	Complete draft Cultural Landscape Inventory Install new visitor information signage	Repave pathways in Glen Echo Park Build new maintenance facility on park land

Projects considered in the Cumulative Actions Scenario

Past Actions

Abandonment of trolley and the removal of track: Trolleys stopped running on the line between Washington, DC and Glen Echo in 1961. The tracks and ties were removed shortly thereafter.

Reconstruction of Parking Lots: In 1956, owners of the park paved the entire area between the park and Oxford Drive and from the train tracks to the Clara Barton House. During this time, Minnehaha Branch was carried through a culvert. In 1989, a major storm caused the culvert to collapse and in 1991 the parking area was completely reconfigured to the current layout.

Restoration of Minnehaha Branch:

After the 1989 storm, NPS removed the portion of the parking lot that was over the stream, removed the culvert, and restored the streambed.

Topping of trees along the Cabin John ROW: As noted in the Affected Environment chapter, initial field investigations identified trees along the ROW that had been topped (i.e. the canopies have been severely pruned). Subsequent investigations identified more trees had been recently pruned.

Establishment of GEPPAC: The Glen Echo Park Partnership for Arts and Culture was established to manage the arts and dance programs, produces festivals and special events, and assists with the management and maintenance of park facilities.

Stabilization of existing structures within Glen Echo Park: Over the years, NPS has completed the stabilization of many of the park's original structures, including the Chautauqua Tower and the Spanish Ballroom.

Present Actions

Improvements to the upper parking lot: While this action is complete as of this writing, it is considered a present action for the purposes of this EA/AOE because it was completed while the document was being prepared. It involved repaving the entire lot, the placement of new speed bumps, new striping for parking spaces and one-way circulation.



Figure 10 – These pictures are part of the interpretive signs along Minnehaha Branch and show pictures of 1) the parking area circa 1960, 2) the collapsed parking area in 1989, and 3) restoration work along the creek in 1991.

Development of the cultural landscape inventory for Glen Echo Park and the Clara Barton NHS: This project, which was also in progress during the EA/AOE's development, documents the various elements of the cultural landscape, including historic structures, vegetation, and transportation routes.

Visitor Information Sign Project: This project involved the addition of a variety of signs throughout the park to direct visitors to specific locations within the park's boundaries and was underway during the development of this EA/AOE.

Removal and topping of trees along the Cabin John ROW: During the development of the EA, the local utility company cut down a number of trees along the Cabin John ROW. It also topped trees that were located underneath the existing electric lines.

Non-point source pollution from runoff: Pollutants carried with stormwater runoff from surrounding areas. This is also a future action for purposes of the EA.

Planned/Future Actions

Build new maintenance facility on park land: This project would involve some re-grading and the addition of a new structure on park property at end of Tulane Avenue.

Replace the roof of the Bumper Car Pavilion, the Carousel, and the Clara Barton House: These projects would involve removing the existing roofs and replacing them in their entirety.

Repave pathways at GLEC: This project would involve a new layer of pavement on existing pathways.

SPECIFIC IMPACT TOPICS

Impacts to Topography

Methodology and Assumptions

The impacts of each alternative were analyzed in terms of the changes to the topography as a result of cut and fill activities needed to achieve minimum grade requirements for the shared-use path. Design plans were reviewed to determine the potential impacts.

Study Area

For purposes of analysis, the study area for topographic impacts is the area within the proposed limit of disturbance associated with construction of the shared-use path as shown in Figure 11.

Figure 11 – Project Limits of Disturbance (LOD)



Impact Thresholds

Negligible: Changes in topography would be barely detectable.

Minor: The effects would be detectable but would be localized in a small area. The overall character of the topography of the area would not be affected.

Moderate: The effects would cause a noticeable change in the topography; however, the impact would remain localized.

Major: The effects would be substantial, highly noticeable, and permanent.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: Under the No Action alternative, no fill would be needed to adjust the grade at Oxford Road or between the trolley bridge and the upper parking lot on MacArthur Boulevard and there would be no impacts to topography.

Cumulative Impacts: Because the No Action alternative would have no impact on topography, no analysis of cumulative impacts is required.

Conclusion: There would be no direct or cumulative impacts on topographic resources as a result of the No Action Alternative.

Impacts of the Preferred Alternative

Analysis: Under the Preferred Alternative, fill would be used to adjust the grade at Oxford Road and between the trolley bridge and the upper parking lot in order to achieve a maximum five percent grade, as required by the Americans with Disabilities Act of 1990 (ADA). At Oxford Road, approximately three to four feet of fill would be added. Between the trolley bridge and the upper lot, approximately four to five feet of fill would be added to maintain the grade. A cut approximately one-foot deep would be needed along north side of the trail between stations 2.50 and 3.00 to ensure proper drainage. These changes would result in minor, long term adverse impacts to topography as the grade changes would be detectable but within a small, localized area.

Cumulative Impacts: Removal of the trolley tracks has had negligible impacts to topography. The reconstruction of the parking lot after the collapse in 1989 has had a beneficial impact, as it restored some of the natural undulations of the terrain and removed some of the pavement. The restoration of Minnehaha Branch has also had a beneficial impact on the topography as the stream channel south of the trolley bridge was day-lighted and re-established. Cumulatively, the impacts from the Preferred Alternative would result in minor, long term adverse impacts on the topography.

Conclusion: The Preferred Alternative would result in minor, long term adverse impacts to topography. Cumulative impacts would be minor, long term and adverse.

Impacts to Hydrology and Water Quality

Methodology and Assumptions

The impacts of each alternative were analyzed in terms of the potential changes to local hydrology and the water quality of Minnehaha Branch based on review of proposed grading and drainage plans, as well as proposed construction methods.

Study Area

For purposes of analysis, the study area for hydrology and water quality impacts is the drainage area of Minnehaha Branch.

Impact Thresholds

Negligible: Chemical, physical or biological impacts would be barely detectable.

Minor: The impacts would be detectable but within water quality standards or criteria and within historical or desired hydrologic and water quality conditions.

Moderate: The impacts would be detectable but within water quality standards or criteria. The effects would cause short term exceedances of the historical baseline or desired hydrologic and water quality conditions.

Major: The impacts would be detectable and frequent exceedances of the historical baseline or desired hydrologic and water quality conditions would occur. Water quality standards or criteria would be slightly and singularly exceeded.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: Under the No Action Alternative, there would be minor, long term adverse impacts on water quality as pollutants associated with stormwater runoff from MacArthur Boulevard, as well as paint flakes from the deteriorating bridge, would continue to impact the stream. No changes in grading or addition of impervious surface would occur that would alter the existing drainage pattern or impact hydrology.

Cumulative Impacts: The No Action Alternative, along with the impacts of the restoration of Minnehaha Branch and the reconstruction of the parking areas would result in minor adverse, long term impacts on water quality, but would not impact hydrology.

Conclusion: There would be no impact on hydrology and minor, long term adverse impacts on water quality as a result of the No Action Alternative.

Impacts of the Preferred Alternative

Analysis: Under the Preferred Alternative, there would also be minor, long term adverse impacts on hydrology and water quality as pollutants associated with stormwater runoff from MacArthur Boulevard would continue. Fill would be added between the trolley bridge and the upper parking lot, which requires a 15-inch diameter concrete pipe under the fill to carry stormwater that currently flows through an existing drainage ditch. Impacts to hydrology associated with the additional fill and culvert would be minor, long term and adverse as the drainage pattern would be maintained; however, the pipe is not a permeable surface.

Construction of the Preferred Alternative would convert approximately 0.13 acres of existing pervious surface to impervious surfaces. Of this, 0.1 acres are located within the Clara Barton NHS and 0.03 acres are within Glen Echo Park. The total impervious surface area within the Glen Echo Park/Clara Barton National Historic Site would increase from approximately 5.83 acres to 5.96 acres, or approximately one half of one percent. The impact on water quality from the increased runoff would be minor, long term and adverse because run off from the new shared-use path would pass over grassy surfaces before entering the creek and the bridge would be repainted.

In order to construct the proposed improvements, ground would be disturbed and vegetation removed in the areas adjacent to the Cabin John ROW, the trolley bridge, and the parking lot. The removal of vegetation in these areas would have a minor, short term adverse impact on local water quality due to the reduced pollutant and sediment attenuation capacity and the potential for increased soil erosion and siltation. However, best management practices, as well as erosion and sediment control measures specified in the soil mitigation measures described in the Alternatives Chapter, would limit impacts on water quality from sedimentation, as will re-vegetation of the disturbed areas. Having proper containment

systems in place, such as curtains, screens, and tarpaulins, during the cleaning and painting operations would also keep cleaning solutions and paint chips from entering the stream.

A temporary stream diversion that shifts the water towards the southern abutment of the trolley bridge would be necessary in order to complete some of the repairs on the northern bridge abutment. The diversion would be constructed of sandbags and would have a moderate, short term adverse impact on the hydrology of Minnehaha Branch as the diversion under the bridge will force the normal water flow approximately nine feet toward the left bank but would stay within the stream channel.

Use of MDE's accepted guidelines and best practices for in-stream construction activities would limit temporary impacts on water quality and hydrology as much as practicable.

Groundwater impacts could occur during construction from spills and improperly maintained equipment. However, as noted in the mitigation measures for the Preferred Alternative, measures such as implementing a hazard spill plan, using a compliant containment system, and conducting daily equipment construction equipment checks to prevent the release of contaminants, would be implemented to prevent ground and surface water contamination.

Cumulative Impacts: Restoration of the downstream reaches of the Minnehaha Branch has had a beneficial impact on hydrology and water quality in the drainage area. Non-point source pollution from runoff would have minor long term adverse impacts on hydrology and water quality. The impacts from the Preferred Alternative along with the impacts of continued non-point source pollution from runoff off site would result in minor, long term adverse impacts on hydrology and water quality.

Conclusion: The Preferred Alternative would have minor, long term adverse impacts on hydrology due to minor changes in the drainage pattern and negligible, long term adverse impacts on water quality. There would also be moderate, short term impacts associated with the temporary diversion of the stream during construction. Cumulative impacts on hydrology would be minor, long term and adverse; cumulative impacts on water quality would be negligible.

Impacts to Wetlands

Methodology and Assumptions

In accordance with NPS Director's Order #77-1 which implements NPS Executive Order 11990, the NPS is required to avoid impacting wetlands whenever there is a practical alternative (NPS 2002). Wetlands in the project site were identified using the Cowardin classification system. Minnehaha Branch is assumed to be the only wetland for purposes of this EA/AOE.

Study Area

For purposes of this analysis, the study area is the project site as illustrated in Figure 2.

Impact Thresholds

Negligible: Wetlands would not be impacted or the impacts would be at the lowest levels of detection.

Minor: The impact to wetlands would be detectable and relatively small in terms of area and nature of the change. However, the wetland processes, functions and integrity would remain unaffected.

Moderate: Impacts to wetlands would be readily apparent and temporary to the wetland's defining attributes. In addition the wetland processes, function, and integrity would be temporarily affected.

Major: Impacts to wetlands would be readily apparent and permanent to the wetland's defining attributes. In addition, wetland processes, function, and integrity would likely be significantly degraded or eliminated.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: Under the No Action Alternative, there would be no impacts to wetlands because no work activities would be conducted in Minnehaha Branch.

Cumulative Impacts: Because the No Action alternative would have no impact on wetlands, no analysis of cumulative impacts is required.

Conclusion: There would be no direct or cumulative impacts to wetlands under the No Action Alternative.

Impacts of the Preferred Alternative

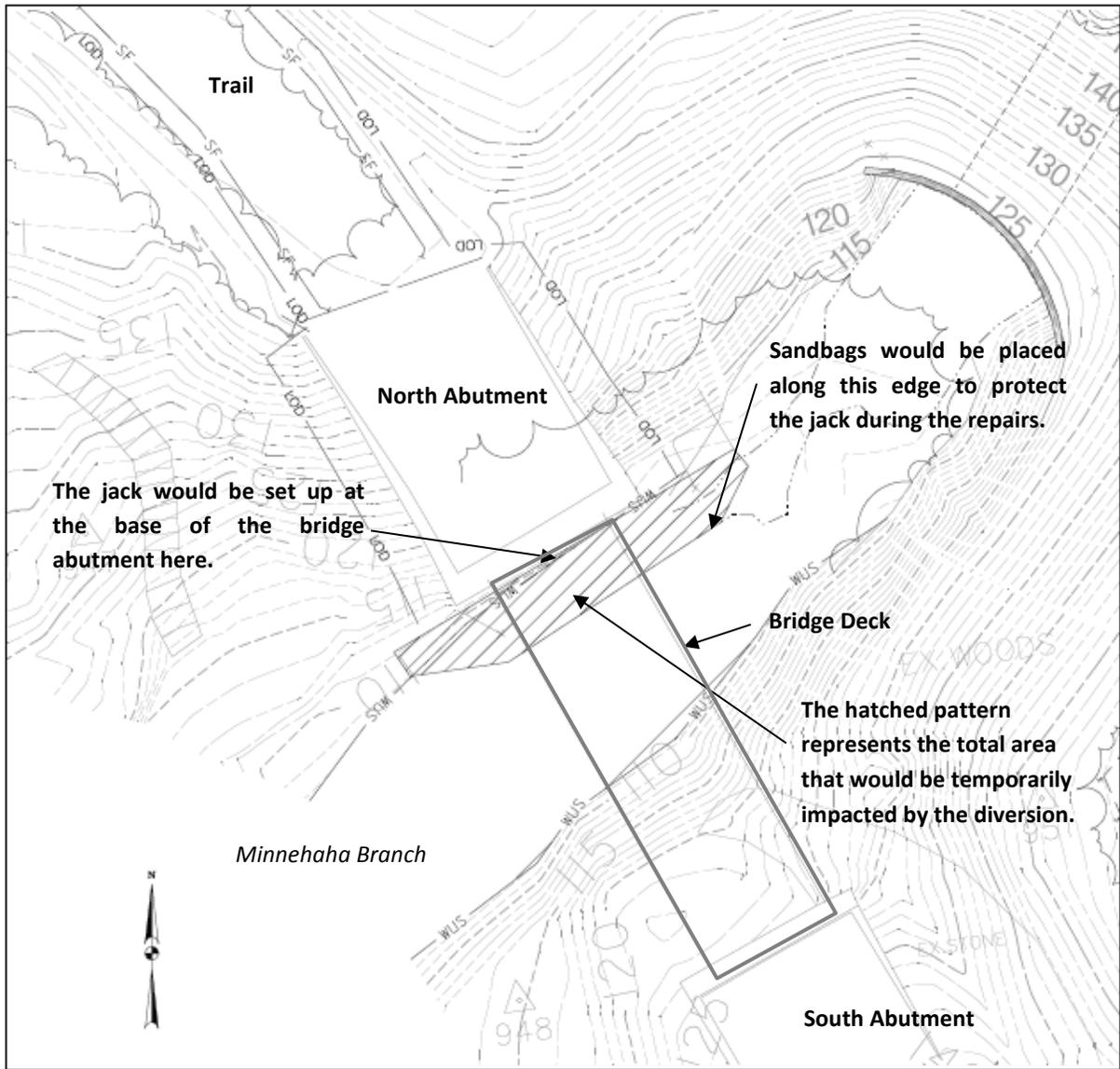
Analysis: Under the Preferred Alternative, there would be short term, minor adverse impacts to the Minnehaha Branch due to the construction of a stream diversion that is needed to complete repairs on the northern bridge abutment. Temporary sandbags would be used to keep water out of the area where the jack would be placed to support the bridge during repairs. The diversion would be placed approximately 8 feet from the northern abutment and would impact approximately 450 square feet of the wetland area for approximately six weeks (Figure 12). This diversion would have a minor short term adverse impact on the aquatic life that may exist in this area of the stream due to the temporary dry stream conditions.

Due to the fact that impacts to the wetland would be temporary and would impact less than 0.1 acres of the wetland, the Preferred Alternative would meet the criteria for exception from a Wetland Statement of Findings.

Cumulative Impacts: Because there are only temporary, short term impacts under the Preferred Alternative, no analysis of cumulative impacts is required..

Conclusion: There would be minor, short term adverse impacts to the Minnehaha Branch under the Preferred Alternative.

Figure 12 – Proposed Stream Diversion



Impacts to Vegetation

Methodology and Assumptions

A survey of the project site was completed to identify existing trees and other vegetation within the proposed limits of disturbance in order to determine the potential impacts of the alternatives. All native trees in excess of six inches diameter at breast height within the proposed limits of disturbance as shown on the design plans were inventoried and their health assessed.

Study Area

For purposes of this analysis, the study area is the limit of disturbance as illustrated in **Figure 11**.

Impact Thresholds

The following impact thresholds were established to describe the magnitude and duration of impacts to vegetation under the alternatives being considered:

Negligible: Impacts would have no measurable or perceptible changes in plant community size, integrity, or continuity.

Minor: Impacts would be measurable or perceptible but would be localized within a relatively small area. The overall viability of the plant community would not be affected and, if left alone, would recover.

Moderate: Impacts would cause a change in the plant community (e.g. abundance, distribution, quantity, or quality); however, the impact would remain localized.

Major: Impacts to the plant community would be substantial, highly noticeable, and permanent.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: Under the No Action Alternative, there would be no new impacts to existing trees and vegetation in the project site because no trees would be removed for construction.

Cumulative Impacts: Because the No Action alternative would have no impact on existing vegetation, no analysis of cumulative impacts is required.

Conclusion: There would be no impacts to vegetation under the No Action Alternative.

Impacts of the Preferred Alternative

Analysis: Under the Preferred Alternative, there would be minor, long term adverse impacts to vegetation as a result of the clearing of activities. The loss of 53 existing trees totaling approximately 515 inches diameter at breast height (dbh) would be perceptible and would decrease the overall tree canopy within the park's boundaries, which provides shade for the understory plants. This change in the microclimate could result in the loss of some of the remaining shade-loving shrubs. However, this would be within a small, localized area within the park and new plantings consisting of native trees and shrubs would be

installed to mitigate the loss. In addition, a three year management program would be initiated to ensure survival of the new plantings, as well as control invasive species within the new planting areas. Due to the limited amount of space available at the project site, the total number of trees that would be required for mitigation cannot be planted on the site and arrangements would be made to provide financial compensation for the trees as approved by NPS. As the plantings mature, a new ecosystem would become established, while invasive species would be controlled along the new shared-use path.

Cumulative Impacts: Continued topping of the remaining trees would have minor, long term adverse impacts on the trees as each successive pruning weakens the trees. Cumulatively, the impact of the Preferred Alternative would be minor, long term and adverse as there would be perceptible, localized changes to the existing plant community, such as a loss of tree canopy and the potential loss of other plants that rely on the shade provided by the trees.

Conclusion: There would be minor, long term adverse impacts under the Preferred Alternative. Cumulative impacts would be minor, long term and adverse.

Impacts to Wildlife

Methodology and Assumptions

Vegetation data was obtained during field reviews and wildlife information was taken from the Glen Echo Park Management Plan Environmental Impact Statement (EIS) to assess impacts to wildlife.

Study Area

For purposes of this analysis, the study area is the Glen Echo Park/Clara Barton NHS site.

Impact Thresholds

The following thresholds were used to determine the magnitude and duration of effects on wildlife:

Negligible: There would be no observable or measurable impacts to native species, their habitats, or the natural processes sustaining them. Impacts would be of short duration and well within natural fluctuations.

Minor: Impacts would be detectable, but they would not be expected to be outside the natural range of variability and would not be expected to have any long term effects on native species, their habitats or the natural processes sustaining them.

Moderate: Breeding animals of concern are affected; animals are present during particularly vulnerable life-stages, such as migration or juvenile stages; mortality or interference with activities necessary for survival can be expected on an occasional basis, but is not expected to threaten the continued existence of the species in the park unit.

Major: Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they would be expected to be outside the natural range of variability for long periods of time or be permanent.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: There would be no impacts to wildlife as a result of the No Action Alternative because no construction activities would disturb their existing habitat or the systems that sustain them.

Cumulative Impacts: Because the No Action alternative would have no impact on wildlife, no analysis of cumulative impacts is required.

Conclusion: There would be no impacts to wildlife under the No Action Alternative.

Impacts of the Preferred Alternative

Analysis: Under the Preferred Alternative, there would be minor, long term adverse impacts to wildlife due to the removal of the existing trees, which may cause the displacement of some wildlife which depend on the cover or food that they provide. However, as noted in the mitigation measures for the action alternative, these impacts would be mitigated by using native plants to replace cleared vegetation. It is also possible that some displacements may occur as the result of people regularly using the area.

Cumulative Impacts: Continued topping of the remaining trees could have minor, long term adverse impacts on wildlife as habitat is removed. The cumulative impact of the Preferred Alternative on wildlife would be minor, long term and adverse.

Conclusion: There would be minor, long term adverse impacts to wildlife under the Preferred Alternative. Cumulative impacts would be minor, long term and adverse.

Impacts to Scenic Resources

Methodology and Assumptions

The alternatives were reviewed in relation to their potential impact on the views to and from Glen Echo Park and the Clara Barton NHS, as well as along MacArthur Boulevard, which is part of a designated Maryland State Scenic Byway.

Study Area

For purposes of this analysis, the study area is the project site as illustrated in Figure 2.

Impact Thresholds

The following thresholds were used to determine the magnitude and duration of impacts on scenic resources:

Negligible: There would be no observable or measurable impacts to scenic resource. Impacts would be of short duration.

Minor: Impacts would be detectable, but they would be localized and would not be expected to have any long term adverse effects on the overall scenic quality of the corridor.

Moderate: Impacts would be detectable and would introduce elements that are incompatible with local scenic resources.

Major: Impacts would be detectable and would introduce elements that would have long term adverse effects on the overall scenic quality of the corridor.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: Under the No Action Alternative, there would be no impacts to scenic resources because there would be no changes to the existing viewsheds.

Cumulative Impacts: Because the No Action alternative would have no impact on scenic resources, no analysis of cumulative impacts is required.

Conclusion: There would be no impacts to scenic resources under the No Action Alternative.

Impacts of the Preferred Alternative

Analysis: Under the Preferred Alternative, there would be minor, long term adverse impacts on scenic resources. The removal of some trees along MacArthur Boulevard between Oxford Road and the trolley bridge would allow some portions of the shared-use path to be visible from MacArthur Boulevard. There would be no impacts on the views of the Glen Echo Park entrance from MacArthur Boulevard as the trail would remain unchanged in this location.

Cumulative Impacts: Restoring the Minnehaha streambed has had a beneficial impact on the scenic value of the stream within the park. The cumulative impact of the Preferred Alternative on scenic resources would be minor, long term and adverse.

Conclusion: There would be minor, long term adverse impacts on scenic resources under the Preferred Alternative. Cumulative impacts would be minor, long term and adverse.

Impacts to Cultural Resources

Impact analyses for cultural resources within this EA/AOE are intended to comply with the requirements of both NEPA and Section 106 of the NHPA and include historic structures and districts, and cultural landscapes. Therefore, not only are impacts described in terms of type, context, duration, and intensity as per CEQ regulations, but they are also identified and evaluated in accordance with 36 CFR Part 800 *Protection of Historic Properties*. This evaluation required determining the area of potential effects (APE), identifying cultural resources present in the APE that are either listed on or eligible for listing on the NRHP, applying the criteria of adverse effect to affected cultural resources either listed on or eligible for listing on the NRHP, and considering ways to avoid minimize, or mitigate adverse effects.

A determination of either *adverse effect* or *no adverse effect* must be made for affected NHRP listed or eligible cultural resources. An *adverse effect* occurs whenever an undertaking directly or indirectly alters any characteristic of the resource that qualifies it for inclusion in the NHRP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR Part 800.5 Assessment of Adverse Effects). A determination of *no adverse effect* means that there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the National Register.

A summary of Section 106 determinations is included as part of the Preferred Alternative analyses for each resource. It is intended to meet the requirements of Section 106 and is an assessment of the effect of the undertaking based upon the criteria found in 36 CFR Part 800.

Impacts to Archeological Resources

Methodology and Assumptions

A Phase I Archeological Survey was performed by the NPS (Virta 2012 draft) on behalf of the MCDOT. It consisted of background research and excavating shovel test pits (STPs) to determine if significant archeological resources were present in the APE. Results of the investigations indicated that a large portion of the APE was graded and prepared for rail tracks associated with the electric railroad/trolley system that provided service from Washington, DC through Glen Echo to Cabin John. This system began with the ca. 1896 West Washington and Great Falls Electric Railroad, which was succeeded by other companies and ended the run to Glen Echo and Cabin John as DC Transit in 1960 (Cook 2009).

Study Area

For purposes of this analysis, the study area is the APE, as shown in Figure 7.

Impact Thresholds

For purposes of analyzing impacts to archeological resources, thresholds are based on the potential of the site to yield information important in prehistory or history. The following thresholds were used to determine the magnitude of impacts on archeological resources:

Negligible: The impact would be at the lowest levels of detection or barely measurable, with no perceptible consequences, either adverse or beneficial, to archeological resources. For purposes of Section 106 of the NHPA, the determination of effect would be *no adverse effect*.

Minor, Adverse: The disturbance of a site(s) would be confined to a small area with little, if any, loss of important information potential. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Moderate, Adverse: Disturbance of a site would not result in a substantial loss of important information. For purposes of Section 106, the determination of effect would be *adverse effect*.

Major, Adverse: Disturbance of a site would be substantial and would result in the loss of most or all of the site and its potential to yield important information. For purposes of Section 106, the determination of effect would be *adverse effect*.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: Under the No Action Alternative, there would be no impacts to known archeological resources.

Cumulative Impacts: Because the No Action alternative would have no impact on archeological resources, no analysis of cumulative impacts is required.

Conclusion: There would be no impacts to known archeological resources under the No Action Alternative.

Impacts of the Preferred Alternative

Analysis: Background research conducted to identify cultural resources in the vicinity of the shared-use path project indicates the undertaking is located in an area containing several nearby prehistoric archeological sites and historic sites. The project APE is within the footprint of a late 19th through mid-20th century electric railroad/trolley system. The electric railroad/trolley system remains are listed as a historic site in the Maryland Historic Sites Inventory by the Maryland Historic Trust (1979) and as a historic site for Montgomery County by the Maryland National Capital Park and Planning Commission (1976) and identified as the Cabin John Right of Way/Brookmont Trolley ROW. Nearby historic properties, namely the Washington Aqueduct, the Clara Barton National Historic Site, and the Glen Echo Park Historic District, are listed on the National Register of Historic Places.

A Phase I Archeological Survey was conducted by the NPS (Virta 2012 draft) on behalf of the MCDOT and did not discover significant archeological resources, nor resources considered to be associated with historic properties, in the immediate APE for the project. Evidence of the electric railroad/trolley system was identified in the form of grading cuts and presumed railroad ballast material of unknown age. While the likely railroad ballast is linked to the electric railroad/trolley system operations, its sheer quantity and burial depths would be largely undisturbed by the project and its value as an archeological resource, other than being identified as potential railroad ballast and helping to mark the former footprint of the electric railroad/trolley system, is limited.

The shared-use path project Preferred Alternative includes minor grading cuts to current topography to re-establish an active right of way, the installation of railing, and the planting of landscaping vegetation in the APE, which would result in some ground disturbance to depths containing archeological materials, but would not cause disturbance to significant archeological resources. Under NEPA impact thresholds, the shared-use path project would have negligible to minor adverse/beneficial impacts on any type of archeological resources.

Section 106 Summary: Portions of the railroad/trolley bed will be buried by fill, which will serve to protect and stabilize those areas. Where surface intrusion does occur, it is anticipated that the project would have negligible to minor adverse/beneficial impacts on any type of archeological resources. Overall, the Preferred Alternative will have *no adverse effect* on archaeological resources.

Cumulative Impacts: Because the Preferred Alternative would have no impact on archeological resources, no analysis of cumulative impacts is required.

Conclusion:

Negligible to minor adverse/beneficial impacts to any type of archaeological resources and the protection of portions of the railroad/trolley bed result in *no adverse effect* to archaeological resources from the Preferred Alternative.

Impacts to Historic Structures and Districts

Methodology and Assumptions

The Maryland Historical Trust provided a list of historic sites and districts in the vicinity of the entire MacArthur Boulevard/Lane Improvements project as part of MCDOT’s initial coordination efforts in 2003. This information has been verified and amended since that time. The Glen Echo Historic District and the Clara Barton NHS are both listed in the NRHP. The Cabin John ROW/Brookmont Trolley ROW and bridge over Minnehaha Branch are identified in the Maryland Inventory of Historic Places and as a contributing element to the Glen Echo Park Cultural Landscape.

Study Area

For purposes of this analysis, the study area is APE as illustrated in Figure 13.

Figure 13 – Historic Structures and Districts APE



Impact Thresholds

For purposes of analyzing potential impacts to historic structures and districts, the thresholds of change for the intensity and duration of an impact are defined as follows:

Negligible: The impact is at the lowest level of detection with neither adverse nor beneficial consequences. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Minor: Alteration of a pattern(s) or feature(s) of a historic district or structure listed on or eligible for the NRHP would not diminish the integrity of a character-defining feature(s) or the overall integrity of the historic property. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Moderate: The impact would alter a character-defining feature(s) of a historic district or structure and diminish the integrity of that feature(s) of the historic property. For purposes of Section 106, the determination of effect would be *adverse effect*.

Major: The impact would alter a character-defining feature(s) of the historic district or structure and severely diminish the integrity of that feature(s) and the overall integrity of the historic property. For purposes of Section 106, the determination of effect would be *adverse effect*.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: Under the No Action Alternative, there would be minor adverse impacts to the trolley bridge as it would not be re-used. The wooden decking would continue to deteriorate and the paint would continue to flake off of the steel trusses, leaving them exposed to the elements. However, this would not diminish the integrity of character defining features. There would be no impacts on the historic districts as the view from both the Clara Barton NHS and the Glen Echo Park Historic District would remain unchanged.

Section 106 Summary: Because the trolley bridge would continue to deteriorate, yet not diminish its overall integrity, the determination for the No Action alternative would be *no adverse effect*.

Cumulative Impacts: The abandonment and removal of the trolley tracks has had a minor, long term impact on the trolley bridge as it has not been maintained for more than 50 years. Cumulatively, the No Action alternative would have a minor, long term adverse impact on the bridge.

Conclusion: There would be no impacts to the Clara Barton NHS or the Glen Echo Park Historic District and minor adverse impacts to the trolley bridge under the No Action Alternative. Cumulative impacts would be minor, long term and adverse.

Impacts of the Preferred Alternative

Analysis: Under the Preferred Alternative, the trolley bridge would be rehabilitated, adapted and re-used to carry the shared-use path over the Minnehaha Branch. Most of the work on the bridge would involve

repairing existing features to ensure the integrity of the supporting structures and would not be visible. New timbers would replace those that still remain on the bridge and a railing would be added to ensure safety. The rehabilitation of the trolley bridge would be undertaken in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties* to minimize detrimental impacts to the character defining features of the structure. The installation of the railing would constitute a minor, long term, adverse impact with no loss of character defining features.

The trolley bridge is adjacent to the Glen Echo Park Historic District and is also visible from the Clara Barton National Historic Site. The addition of the railing may constitute a minor adverse visual impact on these resources. As noted in the mitigation measures for the action alternatives, the rehabilitation and modifications to the bridge would be undertaken in consultation with the Maryland Historical Trust and NPS in order to mitigate potential visual impacts. Photographic documentation of the structure was completed as part of the 2006 Bridge Inspection Report prepared for MCDOT, and is found in Appendix D. Consultation with the Maryland Historical Trust regarding the design for the rehabilitation of the trolley bridge will be undertaken as part of the review of this EA/AOE to ensure compliance with standards.

Section 106 Summary: The trolley bridge would be rehabilitated in accordance with the Secretary's Standards and reused to carry bicyclists and pedestrians across Minnehaha Branch, similar to its original intent. Its reuse and the addition of the railing are determined to have *no adverse effect* to this resource.

Cumulative Impacts: The abandonment and removal of the trolley tracks has resulted in the deterioration of the trolley bridge has resulted in a minor, long term adverse impact on the trolley bridge. Roof repairs within Glen Echo Park and at the Clara Barton House will have beneficial impacts to other historic structures within the park unit. Cumulatively, there would be long term minor adverse impacts to historic structures at Glen Echo Park under the Preferred Alternative.

Conclusion: The Preferred Alternative would have a minor, long term adverse impact on the trolley bridge due to the addition of the new deck and hand railings. Proposed alterations to the bridge may have a minor adverse visual impact on the Glen Echo Park Historic District.

Impacts to Cultural Landscapes

Methodology and Assumptions

A cultural landscape is defined as "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values" (Birnbaum, 2010). Specifically, the cultural landscape is defined by the topography, vegetation and other natural systems, circulation routes, and buildings and structures within its boundaries. NPS recently conducted an inventory of the Glen Echo Park – Clara Barton House Cultural Landscape. The period of significance for the landscape is 1888-1968, incorporating the property uses of the National Chautauqua of Glen Echo, Clara Barton House, and Glen Echo Park. While alterations and losses to original fabric have occurred to the landscape, all seven aspects of integrity remain represented.

Study Area

For purposes of this analysis, the study area is the APE as illustrated in Figure 13.

Impact Thresholds

For purposes of analyzing potential impacts to cultural landscapes, the thresholds of change for the intensity and duration of an impact are defined as follows:

Negligible: The impact is at the lowest levels of detection or barely perceptible and not measurable. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Minor, Adverse: The impact would not affect the character-defining features of a cultural landscape listed on or eligible for the NHRP. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Moderate, Adverse: The impact would alter a character-defining feature or features of the cultural landscape but would not diminish the integrity of the landscape to the extent that its NRHP eligibility would be jeopardized. For purposes of Section 106, the determination of effect would be *adverse effect*.

Major, Adverse: The impact would alter a character-defining feature(s) of the cultural landscape, diminishing the integrity of the resource to the extent that it would no longer be eligible to be listed on the NRHP. For purposes of Section 106, the determination of effect would be *adverse effect*.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: Under the No Action Alternative, there would be no impacts to the cultural landscape near Glen Echo Park.

Cumulative Impacts: Because the No Action alternative would have no impact on the cultural landscape, no analysis of cumulative impacts is required

Conclusion: There would be no impacts to the cultural landscape under the No Action Alternative.

Impacts of the Preferred Alternative

Analysis: Under the Preferred Alternative, there would be minor adverse effects as a result of the addition of the new deck and handrails to the trolley bridge, as well as the new path, to an historic setting. There would be a minor adverse impact to topography as a result of the grading between the Cabin John ROW and the upper parking lot necessary to meet ADA requirements. There would be short term, minor adverse impacts on vegetation as a result of removing some trees; however, none of the trees are historic and they will be replaced with new trees and shrubs. There would be no permanent impacts to the landscape's natural systems, including Minnehaha Branch.

Section 106 Summary: Under the Preferred Alternative, there would be minor adverse impacts to the trolley bridge, as well as to topographic and vegetative elements. For purposes of Section 106, the determination would be *no adverse effect*.

Cumulative Impacts: Removal of the trolley tracks and the reconstruction of the adjacent parking areas had a moderate adverse impact on the cultural landscape as the Cabin John ROW, which was a prominent feature of the cultural landscape until the late 1960s. It is mostly overgrown in the study area except for the stretch in front of the original entrance to Glen Echo Park on MacArthur Boulevard. The cumulative impact of the Preferred Alternative would be long term, minor and adverse as a result of changes to the trolley bridge and the changes to vegetation and topography.

Conclusion: Overall, there would be minor, long term impacts to the cultural landscape under the Preferred Alternative. Cumulative impacts would be long term, minor and adverse.

Impacts to Visitor Use and Experience

Methodology and Assumptions

The potential for change in visitor experience was evaluated by determining whether the proposed alternatives would be readily apparent to visitors and if the change would affect their enjoyment or use of the park.

Study Area

For purposes of this analysis, the study area is the project site as illustrated in Figure 2.

Impact Thresholds

The following thresholds for evaluating impacts and their duration on visitor experience were defined:

Negligible: Visitors would not likely be aware of changes to the park resources; their use and enjoyment of the park would not be affected.

Minor: Visitors would likely be aware of the changes to the park resource; their use and enjoyment of the park would be slightly affected in the short term.

Moderate: Visitors would be aware of the changes to the park resources; their use and enjoyment of the park would be affected long term. Visitor satisfaction might be measurably affected (visitors could be either satisfied or dissatisfied). Park use/visitation may decrease.

Major: Visitors would be highly aware of the changes to the park resources; their use and enjoyment of the park would be affected long term. Impacts would preclude future generations from enjoying park resources and values. Park use/visitation may decrease.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: Under the No Action Alternative, there would be no impacts to park resources and visitors would still be able to enjoy them as before. Visitors who currently use the existing bike path to access the park would still be able to do so.

Cumulative Impacts: Because the No Action alternative would have no impact on visitor use and experience, no analysis of cumulative impacts is required

Conclusion: There would be no impacts under the No Action Alternative.

Impacts of the Preferred Alternative

Analysis: Under the Preferred Alternative, there would be minor, short term adverse impacts on visitor use and experience during construction and beneficial impacts post-construction. Impacts to visitor use and experience during construction could include extraneous noise from equipment and the temporary loss of parking spaces in the upper parking lot. There would be beneficial impacts on the visitor experience in the form of the new shared-use path and improved access to an historic element of the cultural landscape. Visitor satisfaction could be positively impacted as a result of new interpretive exhibits and another opportunity to view and enjoy Minnehaha Branch. It is also possible that some visitors would be negatively affected by the action in that more people would have access to a relatively quiet area of the park.

Cumulative Impacts: Establishing GEPPAC and the continuing expansion of programs has had a beneficial impact on visitor use and experience as evidenced by the thousands of visitors and students that enjoy the park each year. Continued preservation and rehabilitation of the park's resources, such as repaving the pathways, will also have a beneficial impact as it will not only attract new visitors to the park, but also further enhance the visitor experience by improving the physical appearance and integrity of existing facilities. The impact of the Preferred Alternative along with past and future projects would be beneficial.

Conclusion: There would be minor, short term adverse impacts during construction and long term beneficial impacts post construction under the Preferred Alternative. Cumulative impacts would be beneficial.

Impacts to Transportation

Methodology and Assumptions

Local traffic patterns, as well as park-related transportation patterns and facilities, were reviewed to determine the potential impact of the alternatives on transportation resources. Impacts on safety are discussed under Impacts to Human Health and Safety.

Study Area

For purposes of this analysis, the study area is the project site as illustrated in Figure 2 and the adjacent roadways and parking facilities.

Impact Thresholds

The following thresholds for evaluating impacts and their duration on transportation facilities and systems were defined:

Negligible: There would be no observable or measurable impacts to transportation facilities. Impacts would be of very short duration.

Minor: Impacts would be detectable, but they would be localized and would have short term effects on the overall efficiency of the transportation system.

Moderate: Impacts would be detectable and would have localized, long term effects on the overall efficiency of the transportation system.

Major: Impacts would be detectable and would have long term effects on the regional transportation system.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: Under the No Action Alternative, there would be minor adverse impacts to the existing transportation network. Without the shared-use path at this location, the proposed shoulder would be used by experienced cyclists, less experienced cyclists and pedestrians, and would not be separated from motorized traffic.

Cumulative Impacts: Paving and re-striping along MacArthur Boulevard would have beneficial impacts to the transportation system as it would improve safety for motorists and experienced cyclists. Traffic volumes would be expected to increase slightly as growth continues outside of the study area, which could result in moderate adverse impacts on vehicular traffic from increased congestion. In addition, safety issues associated with potential conflicts between vehicles and non-motorized travelers would not be addressed. The impacts of the No Action Alternative along with past and future projects would be minor and adverse.

Conclusion: There would be minor adverse impacts to the transportation network under the No Action Alternative. Cumulative impacts would be minor and adverse.

Impacts of the Preferred Alternative

Analysis: Under the Preferred Alternative, there would be beneficial impacts to the transportation network. Even though traffic patterns would largely remain the same, i.e. no increases in traffic volumes would be generated, the shared-use path may encourage the use of alternative modes of travel, which may reduce vehicular traffic. The proposed shared-use path would cross Oxford Road at the same location as the current bikeway; but instead of continuing adjacent to MacArthur Boulevard and crossing at the entrance to the upper parking lot, it would cross through the upper parking lot approximately 100 feet south of the entrance. This would likely cause minor, short term impacts while vehicles and path users become accustomed to the new traffic pattern in the upper parking lot. However, as noted in the mitigation for the action alternatives section, pavement markings and signage would be used to clearly

identify the shared-use path at all intersections and within the parking area so that drivers, pedestrians, and cyclists are aware of the crossings. Construction of the Preferred Alternative would also result in the loss of six parking spaces in the upper parking lot. This is approximately two percent of the total regular parking spaces available at the park, and would be a minor adverse impact to the transportation system as parking tends to be at a premium at the park, particularly during large events.

Cumulative Impacts: Restriping MacArthur Boulevard would have a beneficial impact to the transportation system as it would improve safety for motorists and experienced cyclists. Traffic volumes would increase slightly as growth continues outside of the study area, which could result in moderate impacts on vehicular traffic from increased congestion. The cumulative impacts of the Preferred Alternative would be beneficial.

Conclusion: There would be minor, short term adverse impacts to the transportation network under the Preferred Alternative. Cumulative impacts would be beneficial provided that proper markings and signage are added to the section of the shared-use path that traverses the upper parking lot.

Impacts to Human Health and Safety

Methodology and Assumptions

The potential for impacts to human health and safety was evaluated by determining whether the proposed alternatives would result in greater safety concerns or additional user conflicts.

Study Area

For purposes of this analysis, the study area is the project site as illustrated in Figure 2.

Impact Thresholds

The following impact thresholds and their duration for both visitor and safety were defined:

Negligible: The impact to visitor safety would not be measurable or perceptible.

Minor: The impact would be measurable or perceptible, and it would be limited to a relatively small number of visitors at localized areas. Impacts to visitor safety could result in a minor increase or decrease in visitor conflicts in current accident areas.

Moderate: The impact to visitor safety would be sufficient to cause a permanent change in accident rates at existing low accident locations or to create the potential for additional visitor conflicts in areas that currently do not exhibit noticeable visitor conflict trends.

Major: The impact to visitor safety would be substantial either through the elimination of potential hazards or the creation of new areas with a high potential for serious accidents or hazards.

Duration: Short term impacts would be detectable for a period of less than one year. Long term impacts would last longer than one year.

Impacts of No Action Alternative

Analysis: Under the No Action Alternative, there would be minor, long term adverse impacts to visitor safety due to the gap in the shared-use path.

The MacArthur Boulevard Bikeway/Lane Improvements Project would result in a three-foot shoulder that would be used by experienced cyclists, less experienced cyclists, and pedestrians and that is not separated from motorized traffic. Alternatively, users would turn onto Oxford Road and cross through the main visitor parking lot, cross over the existing pedestrian bridge, travel through the park, and rejoin the bikeway in front of the main entrance to the park. .

Cumulative Impacts: Pavement improvements and new markings on MacArthur Boulevard and in the upper parking lot would result in negligible, long term beneficial impacts. The impact of the No Action Alternative, along with the past, present, and future projects would result in minor, long term adverse impacts on human health and safety.

Conclusion: There would be minor, long term adverse impacts to visitor safety under the No Action Alternative. Cumulative impacts would also be minor, long term and adverse.

Impacts of the Preferred Alternative

Analysis: Under the Preferred Alternative, there would be beneficial impacts to visitor safety as the new shared-use path would separate pedestrians and less experienced cyclists from the experienced cyclists using the shoulder of MacArthur Boulevard. There would be minor short term adverse impacts associated with bicyclists and pedestrians crossing in the upper parking lot because it would be a new crossing. However, the impacts would affect a relatively small number of visitors who use the upper parking lot. In addition, the crossing would be approximately 100 feet south of the existing entrance, which, with signage and striping, would provide sufficient distance for drivers to see the crossing as noted in the transportation mitigation measures for the Preferred Alternative.

Cumulative Impacts: Paving improvements and new markings on MacArthur Boulevard and in the upper parking lot would result in beneficial impacts. The impacts of the Preferred Alternative along with past, present and future projects would be beneficial.

Conclusion: Under the Preferred Alternative, there would be minor, short term adverse impacts and long term beneficial impacts to visitor safety. Cumulative impacts would be long term and beneficial.

Impacts to Park Management and Operations

Methodology and Assumptions

The potential for impacts to park management and operations was evaluated by determining the level of maintenance required for the proposed alternatives. It was assumed that the NPS would be responsible for maintaining the relocated portion of the shared-use path, as well as routine maintenance and repairs on the trolley bridge.

Study Area

For purposes of this analysis, the study area is the project site as illustrated in Figure 2.

Impact Thresholds

The following thresholds for evaluating impacts and their duration on park management and operations were defined:

Negligible: An action would have a no measurable impact on operations in the Glen Echo Park.

Minor: Actions would affect operations in Glen Echo Park in a way that would be difficult to measure. The impacts on the resources management budget and workload would be short term, with little material effect on other ongoing resources management programs.

Moderate: Actions would measurably affect operations in Glen Echo Park. Resources, management staff workloads, and priorities would need to be rearranged to maintain the shared-use path, and as a result, ongoing programs would be reduced in scope or potentially eliminated.

Major: Actions would affect resource management operations in Glen Echo Park. Funding for management actions would exceed the current resource management budget by 10%, consume all discretionary funding, and require additional personnel over and above what is currently funded.

Impacts of No Action Alternative

Analysis: Under the No Action Alternative, there would be no new impacts to park management and operations as the shared-use path would not be constructed on NPS property.

Cumulative Impacts: Because the No Action alternative would have no impact on park management and operations, no analysis of cumulative impacts is required.

Conclusion: Under the No Action Alternative, there would be no direct or cumulative impacts.

Impacts of the Preferred Alternative

Analysis: Under the Preferred Alternative, there would be moderate adverse impacts to park management and operations due to the need to provide regular maintenance of the area north and south of the trolley bridge, which currently receives only occasional mowing, after the construction contractor's three-year maintenance period ends. Maintenance would consist of care of the plantings along the shared-use path and the newly rehabilitated bridge. Once the plantings are established, maintenance would primarily consist of keeping the shared-use path clear of debris and overhanging branches. Plant maintenance should be minimal after the three-year period as the selected plant materials are native species selected for the conditions of the site. Maintenance of the parking lot crossing would consist of re-stripping or updated signs, once every five years. Bridge maintenance would be limited to regular inspections. This additional work may require some rearrangement of management staff workloads and priorities, but should not reduce or eliminate ongoing programs.

Cumulative Impacts: The establishment of GEPPAC has had a long term beneficial impact to park management and operations as they are responsible for managing the programming of the various arts and culture programs. This has allowed NPS staff to focus on the overall management of Glen Echo Park and the Clara Barton NHS and the protection and interpretation of their natural and cultural resources. The

completion of the Cultural Landscape Inventory will also have a long term beneficial impact to park operations and management as it has formally identified the various resources that make up the cultural landscape, which, in turn, allows NPS to prioritize and manage the protection and interpretation of those resources. Repaving the pathways at Glen Echo Park would have a long term beneficial impact on park management and operations as the new paving would reduce the need for ongoing “spot” improvements. The construction of a new maintenance facility on park land would also have a long term beneficial impact as it will be located on site with immediate access to supplies and staff. Cumulatively, the Preferred Alternative would have a moderate adverse impact on park management and operations.

Conclusion: Under the Preferred Alternative, there would be moderate adverse impacts to park management and operations. Cumulative impacts would be moderate and adverse.

CONSULTATION AND COORDINATION

The following summarizes consultation and coordination efforts completed to date.

Public Involvement

MCDOT held public meetings during the Phase 1 Planning Study in 2003-04 to receive public comments about the MacArthur Boulevard Bikeway/Lane Improvements Project. The original typical section addressed those comments. NPS conducted a preliminary scoping session for the relocation of the shared-use path with GEPPAC. During the session, GEPPAC voiced safety concerns for a shared-use path alignment through the parking area and the interactions between cars, cyclists, and pedestrians. Alternatives 4 and 5 were developed in response to those concerns. A public scoping announcement on the NPS Planning, Environment and Public Comment Website on August 17, 2010 generated similar concerns from two respondents. Concerns regarding impacts to trees and Minnehaha Branch were also expressed by the general public.

Individuals and Agencies Consulted

MCDOT conducted initial consultations with MHT, USFWS, and MD DNR in 2003-04 as part of the Phase 1 Planning Study. Follow-up correspondence was sent to MHT on October 25, 2010, and to USFWS and DNR on September 20, 2010. Responses have not been received as of this writing.

MCDOT began consulting with the NPS in 2005 when it became apparent that the originally proposed typical section for MacArthur Boulevard Bikeway/Lane Improvements Project would not address safety issues between Oxford Road and the original entrance to Glen Echo Park. At that time, MCDOT approached NPS to determine if it would allow the shared-use portion of the improvements to be relocated onto NPS property. NPS agreed that it was a possibility, so MCDOT began to explore design options.

Members of MCDOT's project design team and representatives of the NPS conducted a field visit in 2008, with two subsequent meetings held in May 2009 and July 2009, to discuss potential issues and design elements. In 2009, NPS requested that two other alternatives (Alternatives 4 and 5) be analyzed and evaluated with the results presented in an Environmental Assessment.

NPS posted a public scoping announcement that dealt only with the relocation onto NPS property on the NPS Planning, Environment and Public Comment Website on August 17, 2010. Two responses were received which reiterated concerns about interactions between cars, cyclists and pedestrians in the upper parking lot, as well as potential impacts to natural resources in the vicinity of the proposed alignment.

MCDOT/NPS have consulted the US ACEO regularly consulted during the development of the entire MacArthur Boulevard Bikeway/Lane Improvements Project in regards to impacts to Waters of the US and to existing aqueducts located within the MacArthur Boulevard ROW.

MCDOT initially consulted with Maryland Historic Trust (MHT) regarding Section 106 of the NHPA in 2003. At that time, MHT requested that its staff be permitted to review them and provide specific comments as design plans for the project were developed. NPS informed MHT of their intent to complete the EA and Assessment of Effect concurrently in September, 2010. The document will be sent to MHT for review upon completion for their concurrence with the Assessment of Effects.

LIST OF PREPARERS

- Josephine Boyer, AICP – EA Primary Author, Gannett Fleming for MCDOT
- John Martin – Cultural Resources Specialist, Gannett Fleming
- Polly Angelakis – NPS Site Manager, Glen Echo Park
- Matthew Virta – NPS NHPA Specialist
- Joel Smith – Environmental Scientist, Gannett Fleming

GLOSSARY AND ACRONYMS

Glossary of Terms

The controlling definitions for terms under the Council on Environmental Quality's (CEQ's) NEPA regulations are contained at 40 CFR. These definitions provide a quick reference to those regulatory definitions, as well as supplemental definitions from NPS policies. The numbers in parentheses refer to the applicable section(s) of 40 CFR.

Categorical exclusion (CE) (1508.4) — An action with no measurable environmental impact that is described in one of the categorical exclusion lists in section 3.3 or 3.4 and for which no exceptional circumstances exist (Section 3.5). NPS also uses the acronym "CX" to denote a categorical exclusion.

Connected actions (1508.25) — Actions that are closely related. They automatically trigger other actions that have environmental impacts, they cannot or will not proceed unless other actions have been taken previously or simultaneously, or they are interdependent parts of a larger action and/or depend on a larger action for their justification.

Conservation planning and impact assessment — Within NPS, this process is synonymous with the NEPA process. This process evaluates alternative courses of action and impacts so that decisions are made in accord with the conservation and preservation mandate of the NPS Organic Act.

Cooperating agency (1508.5) — A federal agency other than the one preparing the NEPA document (lead agency) that has jurisdiction over the proposal by virtue of law or special expertise and that has been deemed a cooperating agency by the lead agency. State or local governments, and/or Indian tribes, may be designated cooperating agencies as appropriate (Section 1508.5 and 1502.6).

Cultural resources (NPS-28, appendix A) — Aspects of a cultural system that are valued by or significantly representative of a culture or that contain significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. For NPS management purposes, tangible cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places, and as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources.

Cumulative actions (1508.25) — Actions that, when viewed with other actions in the past, the present, or the reasonably foreseeable future, regardless of who has undertaken or will undertake them, have an additive impact on the resource the proposal would affect.

Cumulative impact(s) (1508.7) — The impact(s) of cumulative actions.

Direct effect (1508.8) — An impact that would occur as a result of the proposal or alternative in the same place and at the same time as the action.

Environmental assessment (EA) (1508.9) — A brief NEPA document that is prepared to (a) help determine whether the impact of a proposal or alternatives could be significant; (b) aid NPS in compliance with NEPA by evaluating a proposal that will have no significant impacts but that may have measurable adverse impacts; or (c) evaluate a proposal that either is not described on the list of categorically excluded actions, or is on the list but exceptional circumstances apply (Section 3.5).

Environmental impact statement (EIS) (1508.11) — A detailed NEPA document that is prepared when a proposal or alternatives have the potential for significant impact on the human environment.

Environmental screening process — The analysis that precedes a determination of the appropriate level of NEPA documentation. The minimum requirements of the environmental screening process are a site visit, consultation with any agency that has jurisdiction by law or special expertise, and the completion of a screening checklist. The process must be complete for all NPS actions that have the potential for environmental impact and are not described in Section 3.3.

Environmentally preferred alternative (1505.2, Q6a) — Of the alternatives analyzed, the one that would best promote the policies in NEPA Section 101. This is usually selected by the interdisciplinary team members. It is presented in the NPS NEPA document (draft and final EIS or EA) for public review and comment.

Exceptional circumstances — Circumstances that, if they apply to a project described in the NPS categorical exclusion lists (Sections 3.3 and 3.4), deem a CE as inappropriate because the action may have measurable or significant impacts and therefore require that an EA or an EIS must be prepared. Exceptional circumstances are described in Section 3.5.

Finding of no significant impact (FONSI) (1508.13) — A determination based on an EA and other factors in the public planning record for a proposal that, if implemented, would have no significant impact on the human environment.

Human environment (1508.14) — Defined by CEQ as the natural and physical environment, and the relationship of people with that environment (Section 1508.14). Although the socioeconomic environment receives less emphasis than the physical or natural environment in the CEQ regulations, NPS considers it to be an integral part of the human environment.

Impact topics — Specific natural, cultural, or socioeconomic resources that would be affected by the proposed action or alternatives (including no action). The type, magnitude, duration, and timing of the effect to each of these resources is evaluated in the impact section of an EA or an EIS.

Indirect impact (1508.8) — Reasonably foreseeable impacts that occur removed in time or space from the proposed action. These are “downstream” impacts, future impacts, or the impacts of reasonably expected connected actions (e.g., growth of an area after a highway to it is complete).

Issues — Per the NEPA, environmental, social, and economic problems or effects that may occur if the proposed action or alternatives (including no action) are implemented or continue to be implemented.

Lead agency (1508.16) — The agency either preparing or taking primary responsibility for preparing the NEPA document.

Major federal action (1508.18) — Actions that have a large federal presence and that have the potential for significant impacts to the human environment. They include adopting policy, implementing rules or regulations; adopting plans, programs, or projects; ongoing activities; issuing permits; or financing projects completed by another entity.

Memo to file — A memo to the planning record or statutory compliance file that NPS offices may complete when (a) NEPA compliance has been completed in site-specific detail for a proposal, usually as part of a document of larger scope, or (b) a time interval has passed since the NEPA document was approved, but information in that document is still accurate.

Mitigated EA (Q40) — An EA that has been rewritten to incorporate mitigation into a proposal or to change a proposal to reduce impacts to below significance.

Mitigation (1508.20) — A modification of the proposal or alternative that lessens the intensity of its impact on a particular resource.

NEPA process — The objective analysis of a proposal to determine the degree of its environmental and interrelated social and economic impacts on the human environment, alternatives and mitigation that reduce that impact to/on, and the full and candid presentation of the analysis to and involvement of, the interested and affected public.

Notices of availability — Separate notices submitted to the Federal Register that the draft EIS and the final EIS are ready for distribution.

Notice of intent (1508.22) — The notice submitted to the Federal Register that an EIS will be prepared. It describes the proposed action and alternatives, identifies a contact person in NPS, and gives time, place, and descriptive details of the agency's proposed scoping process.

Preferred alternative (1502.14 (e)) — The alternative an NPS decision-maker has identified as preferred at the draft EIS stage or EA. Identification of the preferred alternative helps the public focus its comments during review of the draft NEPA document.

Programmatic documents — Broader scope EAs or EISs that describe the impacts of proposed policy changes, programs, or plans.

Proposal (1508.23) — The stage at which NPS has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal. The goal can be a project, plan, policy, program, and so forth. NEPA process begins when the effects can be meaningfully evaluated.

Record of decision (ROD) (1505.2) — The document that is prepared to substantiate a decision based on an EIS. It includes a statement of the decision made, a detailed discussion of decision rationale, and the reasons for not adopting all mitigation measures analyzed, if applicable.

Scoping (1508.25) — Decision-making on issues, alternatives, mitigation measures, the analysis boundary, appropriate level of documentation, lead and cooperating agency roles, available references and guidance, defining purpose and need, and so forth prior to the analysis. Internal scoping is conducted by NPS. External scoping is the early involvement of the interested and affected public.

Tiering (1508.28) — The use of broader, programmatic NEPA documents to discuss and analyze cumulative regional impacts and define policy direction, and the incorporation by reference of this material in subsequent, narrower NEPA documents to avoid duplication and focus on issues “ripe for decision” in each case.

Acronyms

CE	Categorical exclusion
CEF	Categorical exclusion form
CEQ	President's Council on Environmental Quality
CFR	Code of Federal Regulations
CX	Categorical exclusion
DEC	Division Environmental Comment request issued by NPS Environmental Quality Division-WASO
DM	Departmental manual
DOI	Department of the Interior
EA	Environmental assessment
ECM	Environmental compliance memorandum
EIS	Environmental impact statement
EO	Executive order
EPA	Environmental Protection Agency
ER	Environmental Review issued by the Department of the Interior
ERM	Environmental review memorandum
ESA	Endangered Species Act
ESM	Environmental statement memorandum
ESF	Environmental screening form
EQD	Environmental Quality Division
FONSI	Finding of no significant impact
GMP	General management plan
IDT	Interdisciplinary team
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOA	Notice of availability
NOI	Notice of intent
NPS	National Park Service
OEPC	Office of Environmental Policy and Compliance
REO	Regional environmental officer
ROD	Record of decision
SSO	System support office
WASO	Washington, DC Office of the National Park Service

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APPENDIX A: CORRESPONDENCE



United States Department of the Interior



NATIONAL PARK SERVICE

George Washington Memorial Parkway
c/o Turkey Run Park
McLean, Virginia 22101

IN REPLY REFER TO:

K3400 (GWMP)

MacArthur Boulevard Shared-Use Path Public Scoping Announcement
8-17-10 FINAL

Glen Echo, Maryland— In accordance with the National Environmental Policy Act (NEPA), the National Park Service (NPS), in coordination with Montgomery County (County) Maryland, is preparing an Environmental Assessment (EA) to evaluate a range of alternatives for a section of the MacArthur Boulevard Shared-Use Path, which is proposed to run through a portion of Clara Barton NHS and Glen Echo Park, which are both units of the George Washington Memorial Parkway. The purpose of this proposed route is to improve the visitor safety and enjoyment of the County trail that is currently located adjacent to Mac Arthur Boulevard.

The portion of the proposed route that would be located on NPS administered property, would parallel MacArthur Boulevard from Oxford Road along the northeastern edge of the Clara Barton National Historic Site parking lot. The route would then cross over an historic trolley trestle, located above Minnehaha Creek. Montgomery County, with guidance from the NPS, would restore the trestle for adaptive use as a shared-use path. The proposed route would then pass through the middle of a small parking lot at 7300 MacArthur Blvd. This lot is on Army Corp of Engineers-administered land but is used, via agreement, as a parking lot by Glen Echo Park.

At this time, the Superintendent is announcing a 30-day public scoping period to solicit public comments on this proposal. During this scoping period, the public is invited to identify any issues or concerns they might have with the proposed project so that the National Park Service can appropriately consider them in the preparation of the Environmental Assessment. You may submit comments electronically (the NPS's preferred method of receiving comments) at the NPS's Planning, Environment, and Public Comment (PEPC) website at:

<http://parkplanning.nps.gov/GLEC>. Written comments may be sent to:

Site Manager
Clara Barton NHS & Glen Echo Park
5801 Oxford Road
Glen Echo, MD 20812
RE: MacArthur Boulevard Shared-Use Path

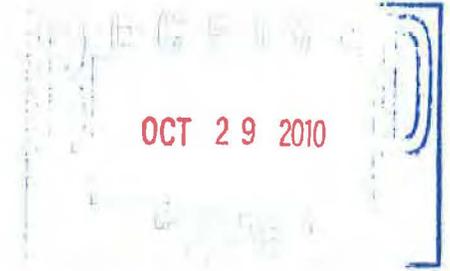
Please submit your scoping comments by Close of Business September 24, 2010. Once the EA is developed, it will be made available for public review for a 30-day period. If you wish to be added to the park's mailing list for this or other announcements, please be sure to indicate that in your response.

**TAKE PRIDE[®]
IN AMERICA** 



United States Department of the Interior

NATIONAL PARK SERVICE
George Washington Memorial Parkway
c/o Turkey Run Park
McLean, Virginia 22101



IN REPLY REFER TO:

H4217

October 25, 2010

Mr. J. Rodney Little, Director &
State Historic Preservation Officer
Maryland Historical Trust
100 Community Place, Third Floor
Crownsville, MD 21032-2023

Attention: Elizabeth Cole and Jonathan Sager

Subject: MacArthur Boulevard Bikeway Improvements, Sections on George Washington Memorial Parkway/Clara Barton Parkway Property near Clara Barton National Historic Site & Glen Echo Park, Montgomery County, Maryland

Re: Notification of Undertaking and Intent to Combine NEPA & NHPA Section 106

Dear Mr. Little:

In accordance with §106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and the Advisory Council on Historic Preservation's regulations, 36 CFR Part 800, and provisions set forth in the 2008 Servicewide Programmatic Agreement with the National Park Service (PA), we are notifying your office of the subject proposed undertaking with potential to cause effects to historic properties under the administration of the National Park Service (NPS), George Washington Memorial Parkway (GWMP) in Glen Echo, Montgomery County, Maryland (see Attachment A). The NPS properties in question include the GWMP/Clara Barton Parkway, the Clara Barton National Historic Site, and Glen Echo Park, all of which are listed on the National Register of Historic Places (NRHP). Your office was initially contacted in 2003 by Ms. Joanna Hiebler, of URS Corporation, on behalf of Montgomery County regarding the entire MacArthur Bikeway Improvements and a response was provided by Ms. Elizabeth Cole (see Attachment B).

This correspondence also serves to inform you that we will utilize the National Environmental Policy Act (NEPA) Environmental Assessment (EA) process to help satisfy National Historic Preservation Act (NHPA) §106 responsibilities as per 36 CFR Part 800.8(c). An EA/Assessment of Effects (AOE) document will be produced in the near future for public review and provided to your office for comment as documentation under NHPA §106.

Project Description

As part of the MacArthur Boulevard Improvements Projects, the Montgomery County Department of Transportation (MCDOT) would like to relocate approximately 800 feet of the MacArthur Boulevard Shared Use Path onto the abandoned Washington Railway and Electric Company trolley right-of-way (ROW), also known as the Cabin John ROW. The relocated path would extend from near the intersection of Oxford Road with MacArthur Boulevard and cross NPS GWMP property fronting MacArthur Boulevard, on which are located Clara Barton National Historic Site and Glen Echo Park. The shared use path will cross over Minnehaha Creek, a tributary of the Potomac River, via an old trolley trestle bridge that is currently in a state of disrepair. South of the trolley bridge the proposed path curves east to cross an existing park employee parking lot and rejoins the existing path along MacArthur Boulevard. This alignment is located just outside of the Clara Barton National Historic Site and Glen Echo Park Historic District NRHP boundaries and within the GWMP/Clara Barton Parkway NRHP boundary.

The project is being funded by Montgomery County and permits will be required from Maryland Department of the Environment and the US Army Corps of Engineers to construct the bikeway. The NPS owns the ROW for the proposed relocation and will provide an easement upon completion and acceptance of the EA.

We look forward to working with your office and will provide the latest project plan sets and the EA/AOE in future correspondence.



Vincent L. Santucci
Acting for Dottie P. Marshall
Superintendent

Attachments

cc:

Mr. Jonathan Sager, Preservation Officer w/
Maryland Historical Trust
Office of Preservation Services
100 Community Place, Third Floor
Crownsville, Maryland 21032-2032

Ms. Beth Cole, Administrator Review and Compliance w/o
Maryland Historical Trust
Office of Preservation Services
100 Community Place, Third Floor
Crownsville, Maryland 21032-2032

Josie Boyer, AICP w/
Gannett-Fleming
7133 Rutherford Road, Suite 300
Baltimore, MD 21244

ATTACHMENT B
PREVIOUS CORRESPONDENCE

Robert L. Ehrlich, Jr.
Governor
Michael S. Steele
Lt. Governor
Victor L. Hoskins
Secretary
Shawn S. Karimian
Deputy Secretary

May 7, 2003


MARYLAND DEPARTMENT OF HOUSING
& COMMUNITY DEVELOPMENT

Ms. Joanna Hiebler
URS Corporation
4 North Park Drive, Suite 300
Hunt Valley, MD 21030

RE: MacArthur Boulevard Bikeway Improvement Study
Montgomery County, Maryland

Dear Ms. Hiebler:

Thank you for notifying the Maryland Historical Trust (Trust) regarding the construction of the proposed bikeway along MacArthur Boulevard. We are writing in response to your request for information on historic standing structures and archeological resources within the project area for the above referenced project.

Archeology:

The Trust's Maryland Inventory of Historic Properties records numerous archeological sites in the vicinity of the general project area. However, according to your letter the project would entail improvements to the existing bikeway along MacArthur Boulevard. If the project proposes construction outside of previously disturbed areas, it may have the potential to affect archeological sites and archeological investigations may be warranted.

Historic Built Environment:

Using the general location map included with your letter, the Trust has reviewed our files to determine the presence of historic structures in the vicinity of the project. This project area encompasses numerous previously surveyed historic resources, including properties listed on the National Register. The following resources are located in the vicinity of the project area:

M:12-46 C&O Canal National Historical Park (NR-listed)
M:29-31 Old Angler's Inn
M:29-32 Cropley Houses
M:29-34 William Hill Houses and Store
M:29-49 Washington Aqueduct (NR-listed)
M:29-52 Carderock Historic District (NR-Eligible)
Within the Carderock Historic District:
M:29-47 David W. Taylor Model Basin (NR-listed)
M:29-53 Instrument House - Building 106
M:35-23 Cabin John Hotel Gas House
M:35-24 Reading House (Oakdale Villa)
M:35-25 Clara Barton House (NR-listed)
M:35-31 Cabin John Right-of-Way (Brookmont Trolley R-O-W)

M:35-37 Cabin John Aqueduct (NR-listed)
M:35-41 Glen Echo Park Historic District (NR-listed)
Within the Glen Echo Park Historic District:
M:35-26 Chautauqua Tower (NR-listed)
M:35-39 Carousel at Glen Echo Park (NR-listed)
M:35-44 Stonehaven
M:35-51 Clara Barton School
M:35-5 Benfield's Service Garage
M:35-1 George Washington Memorial Parkway.

If the proposed project entails any federal or state agency involvement (including financial assistance, permits or licenses), it will be subject to review under Section 106 of the National Historic Preservation Act of 1966, as amended, or Sections 5-617 & 5-618 of Article 83B of the Annotated Code of Maryland. Both historic preservation laws require the involved federal/state agency to consider the effects of the proposed project on significant historic properties, including architectural and archeological resources. Part of the review process involves consultation between the agency (or its designee) and our office to identify and evaluate historic properties that may be affected by the project and to develop measures to avoid, reduce or mitigate any adverse effects on significant historic properties. Your correspondence did not indicate whether or not there will be any federal or state agency involvement in this undertaking.

Should the project be subject to review under the federal or state historic preservation laws referenced above, the Trust will need additional information to continue the consultation process. Specifically, any future submittals must address the following issues:

- Future correspondence must provide a thorough description of the project action and include project plans illustrating the existing bikeway and proposed improvements.
- Please state the nature of any federal or state agency involvement in the project (funds, permits, or licenses).
- The Area of Potential Effect (APE) must be justified and clearly illustrated.
- In addition to the previously inventoried resources listed above, all historic resources fifty years old and older must be identified within the APE.
- If historic resources are located within the APE, a qualified cultural resources professional will need to complete additional work in accordance with the Trust's *Standards and Guidelines for Architectural and Historical Investigations in Maryland*. Determinations of eligibility need to be prepared for all resources not already listed in or determined eligible for the National Register. Please refer to the Trust's *General Guidelines for Compliance-Generated Determinations of Eligibility (DOE)* for guidance in determining appropriate survey treatments. These guidelines, along with electronic database forms and guidelines for completing determinations of eligibility, can be accessed at the Trust's website www.marylandhistoricaltrust.net.
- If the APE contains any properties listed in or recommended eligible for the National Register, please provide an assessment of the project's effects on those resources.

Ms. Joanna Hiebler
MacArthur Boulevard Bikeway Improvement Study
May 7, 2003
Page 3

Once we have received the additional information requested in this letter, if applicable, the Trust will continue its review of the undertaking and provide appropriate comments and recommendations.

For future reference, please note that the Trust encourages consultants to compile general cultural resources information as part of project planning by using the resources available in the Trust's library. To schedule an appointment to use the library, please contact the Librarian - Mary Louise de Sarran, at 401-514-7655. Given our current staff shortage in the Project Review & Compliance Unit, we are not able to conduct research and provide general information for projects in which we have no regulatory involvement.

If you have questions or require additional information, please call Tim Tamburrino (for historic built environment) at 410-514-7610 or me (for archeology) at 410-514-7631. We thank you for your cooperation and assistance and look forward to assisting you to complete the historic preservation responsibilities for this undertaking.

Sincerely,



Elizabeth J. Cole
Administrator, Project Review & Compliance

EJC/TJT
200300902

cc: Don Sparklin (SHA)
Linda Morrison (COE)
Gary Setzer (MDE)



United States Department of the Interior

NATIONAL PARK SERVICE
George Washington Memorial Parkway
c/o Turkey Run Park
McLean, Virginia 22101

IN REPLY REFER TO:

GWMP-(filecode)

August 31, 2010

Ms. Lori Byrne, Environmental Review Specialist
Maryland Department of Natural Resources
Wildlife and Heritage Division
580 Taylor Avenue
Tawes State Office Building, E-1
Annapolis, MD 21401

RE: Provision of easement to Montgomery County Department of Transportation for relocation/construction of MacArthur Boulevard Shared-Use Path - Request for Information

Dear Ms. Byrne:

The National Park Service (NPS) is proposing to provide a permanent easement to Montgomery County Department of Transportation (MCDOT) for the relocation of an 800 foot section of the MacArthur Boulevard Shared-Use Path (shared-use path) onto NPS administered property in the vicinity of Glen Echo Park in Montgomery County, MD. NPS has initiated the preparation of an Environmental Assessment (EA) for the proposed action as required to comply with the National Environmental Protection Act and is requesting information regarding the presence of federal and state rare, threatened or endangered species that may occur within the construction areas, as well as any additional concerns DNR's Wildlife and Heritage Division may have regarding the project.

The relocated section of the shared-use path is part of MCDOT's MacArthur Boulevard Bikeway Improvements project, which extends from I-495 to Oberlin Avenue on MacArthur Boulevard in Montgomery County (Attachment A). Initial consultation with your agency for the project was completed by the county in 2003 (Attachment B). At that time the proposed alignment was to follow the roadway for the entire length of the project. However, due to the topography between Oxford Road and the entrance to Glen Echo Park, it is not possible to maintain the original typical section in this area. The proposed action involves providing the permanent easement needed for MCDOT to use the old Cabin John Trolley Right-of-Way (ROW) for the construction of the eight-foot wide, paved shared-use path. Construction is tentatively scheduled for July 2011.

The alternative alignments for the relocated path are illustrated in Attachment C. As shown, each alternative would share a common alignment that would utilize an existing trolley bridge to cross Minnehaha Branch, which is a tributary of the Potomac River. Once past the bridge there are three potential connections back to the existing path. The shared-use path would be constructed on fill and would be designed to meet ADA requirements.

Some clearing will be needed to complete construction; however, as per NPS requirements all native trees removed in excess of 6" diameter at breast height (DBH) will be replaced one for one.

Currently the trolley bridge is in a state of disrepair and will require rehabilitation to carry pedestrians and bicyclists. Construction activities would consist of installing wing wall tie-backs, removing the existing timber deck, repairing truss members, jacking and replacing truss bearings and reconstructing beam seats, reconstructing the top of abutment backwalls, and installing a new timber deck and railings. Cleaning and painting of metal surfaces and the substructure would also be required. In order to jack and replace the truss bearings and reconstruct the beam seats, a temporary stream diversion would be needed to maintain the stream flow. This would involve the installation of a sandbag/stone channel diversion and would be constructed in accordance with Maryland's Waterways Construction Guidelines, as well as MDOT Standard Specifications for Construction and Materials, Section 308.

NPS staff has identified a small population of *Melica mutica* (Narrow Melicgrass) just outside of the proposed limits of disturbance near the southwest corner of the bridge. It is approximately 65 feet from the stream and halfway up the slope. Even though no impacts to the plants are anticipated, the contractor would be required to provide protective fencing to ensure they are not disturbed.

Should you know of or come across any other resource constraint that may be a possible planning issue, please do not hesitate to contact us. We anticipate no significant environmental impacts associated with the project and look forward to receiving any guidance or comments you may have regarding the process or the project itself. We are also coordinating with the US Fish and Wildlife Service to obtain and review their file information.

An EA is underway, and a copy of the draft document will be sent to your office for comment in the near future during the public review period.

Should you have any questions at all regarding this project, please do not hesitate to contact site manager Polly Angelakis at 301-320-1403 or via email at Polly_Angelakis@nps.gov

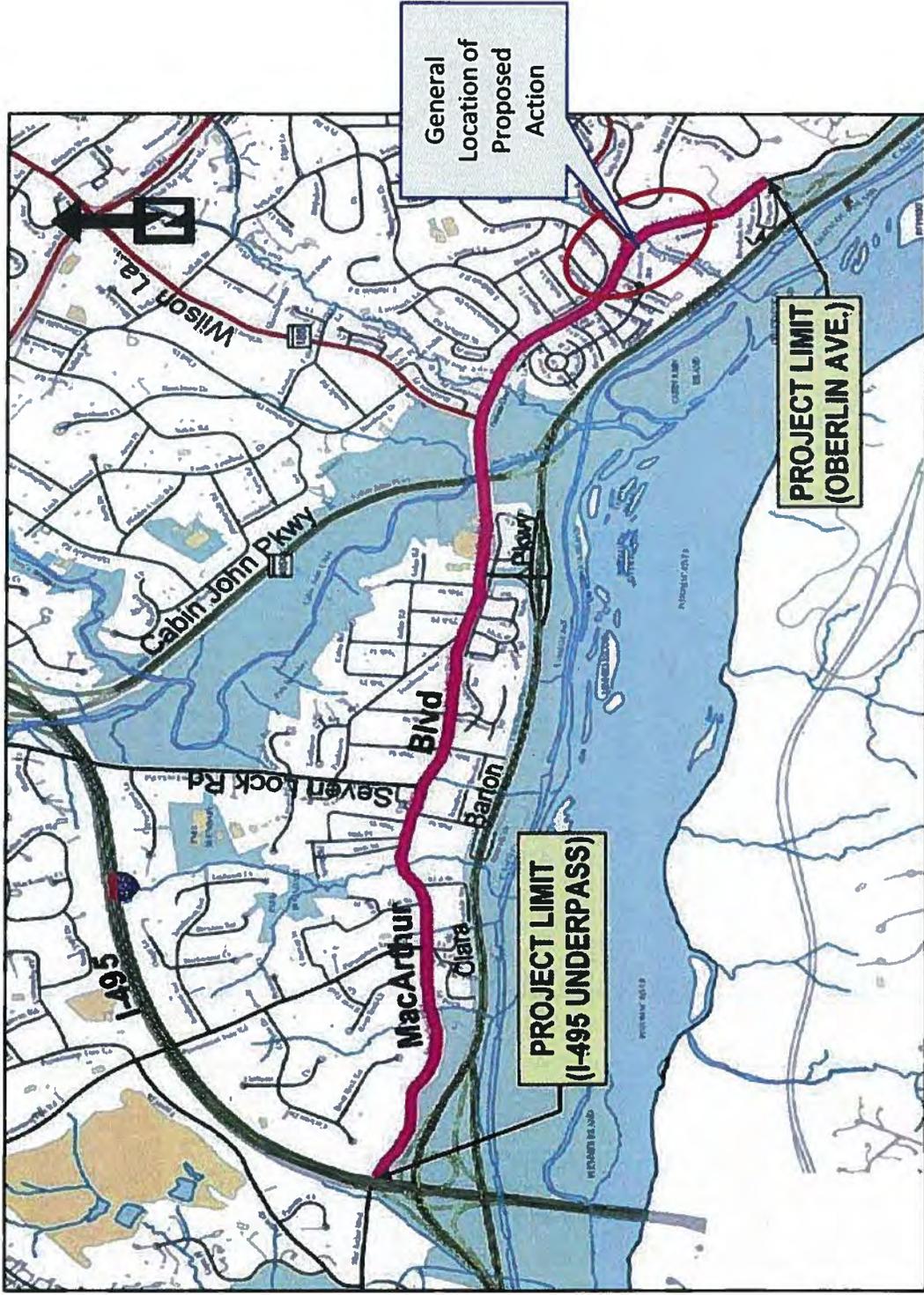
Thank you for your continued assistance.

Sincerely,

A handwritten signature in blue ink that reads "Dottie P. Marshall". The signature is stylized and cursive.

Dottie P. Marshall
Superintendent, George Washington Memorial Parkway

Attachment A
MacArthur Boulevard Bikeway Improvement – Segment 2
Overall Project Limits





Post-It™ brand fax transmittal memo 7671		# of pages ▾
To	Joanna Hieber	From
Co.	URS Corp.	Co.
Dept.		Phone #
Fax #	410 229 0556	Fax #
		410 260 8573

Robert L. Ehrlich, Jr.
Governor

Michael S. Steele
Lt. Governor

Maryland Department of Natural Resources

Taves State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401

C. Ronald Franks
Secretary

W. P. Jensen
Deputy Secretary

March 19, 2003

Ms. Yasamin Esmaili
Montgomery County Department of
Public Works and Transportation
101 Monroe Street, Ninth Floor
Rockville, MD 20850-2540

RE: Environmental Review for MacArthur Boulevard Bikeway Improvement Study, from DC/Montgomery County Line to the Old Anglers Inn at 10801 MacArthur Boulevard, Montgomery County, Maryland.

Dear Ms. Esmaili:

The Wildlife and Heritage Service's Natural Heritage database indicates that there are numerous records for species of concern known to occur in the area of the C&O Canal within the vicinity of the project site. If the trail improvements are confined to the existing bikepath on the road side of the C&O Canal, then only minimal impacts to the rare, threatened and endangered species (RTEs) are anticipated. However, if any work is proposed for the river side of the C&O Canal bed, then more detailed project plans should be submitted to this office for further evaluation of potential impacts to the RTEs in the area.

If you should have any further questions regarding this information, please contact me at (410) 260-8573 or at the above address.

Sincerely,

Lori A. Byrne,
Environmental Review Specialist,
Wildlife and Heritage Service

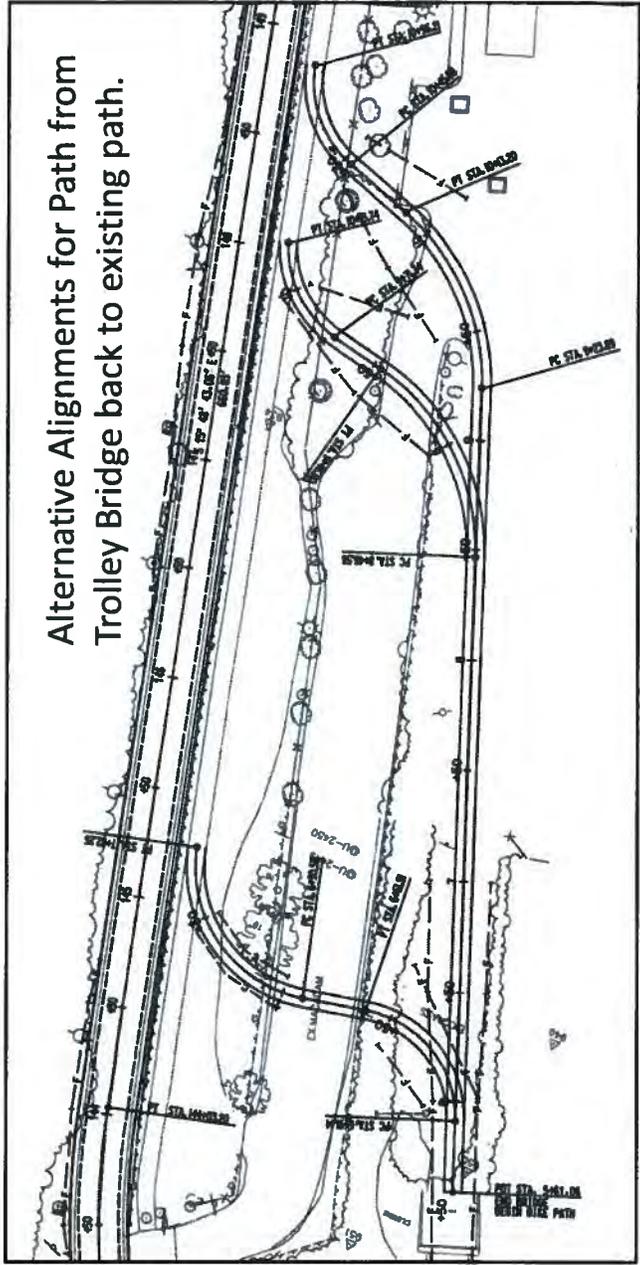
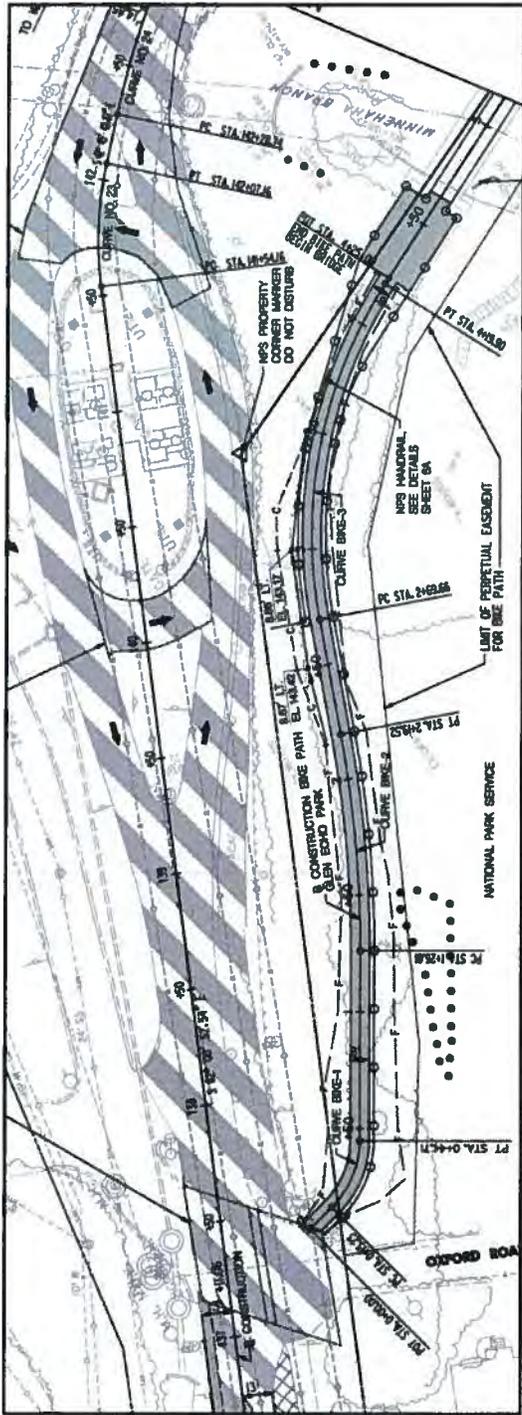
ER# 2002.2545.mo
Cc: R. Wiegand, DNR

Table V-2. Fish Species Collected in the Washington Metropolitan Area (1974-1984). (New species collected in 1980 to 1984 study designated by *.)

Salmonidae	
Brook trout	<u>Salvelinus fontinalis</u> (Mitchill)
Brown trout	<u>Salmo trutta</u> Linnaeus
Rainbow trout	<u>Salmo gairdneri</u> Richardson
Cyprinidae	
Stoneroller	<u>Campostoma anomalum</u> (Rafinesque)
Blacknose dace	<u>Rhinichthys atratulus</u> (Herman)
Longnose dace	<u>Rhinichthys cataractae</u> (Valenciennes)
Cutlips minnow	<u>Exoglossum maxillingua</u> (Lesueur)
Creek chub	<u>Semotilus atromaculatus</u> (Mitchill)
River chub	<u>Nocomis micropogon</u> (Cope)
Fallfish	<u>Semotilus corporalis</u> (Mitchill)
Rosyside dace	<u>Clinostomus funduloides</u> Girard
Common shiner	<u>Notropis cornutus</u> (Mitchill)
Bluntnose minnow	<u>Pimephales notatus</u> (Rafinesque)
Golden shiner	<u>Notemigonus crysoleucas</u> (Mitchill)
Spotfin shiner	<u>Notropis spilopterus</u> (Cope)
Spottail shiner	<u>Notropis hudsonius</u> (Clinton)
Silverjaw minnow	<u>Ericymba buccata</u> Cope
Swallowtail shiner	<u>Notropis procne</u> (Cope)
Satinfin shiner	<u>Notropis analostanus</u> (Mitchill) *
Catostomidae	
Northern hogsucker	<u>Hypentelium nigricans</u> (Lesueur)
White sucker	<u>Catostomus commersoni</u> (Lacépède)
Creek chubsucker	<u>Erimyzon oblongus</u> (Mitchill) *
Ictaluridae	
Margined madtom	<u>Noturus insularis</u> (Richardson)
Brown bullhead	<u>Ictalurus nebulosus</u> (Lesueur)
Yellow bullhead	<u>Ictalurus natalis</u> (Lesueur) *
Cottidae	
Mottled sculpin	<u>Cottus bairdi</u> Girard
Percidae	
Tessellated darter	<u>Etheostoma olmstedti</u> Storer
Greenside darter	<u>Etheostoma blennioides</u> Rafinesque
Fantail darter	<u>Etheostoma flabellare</u> Rafinesque
Centrarchidae	
Bluegill sunfish	<u>Lepomis macrochirus</u> (Rafinesque)
Smallmouth bass	<u>Micropterus dolomieu</u> Lacépède
Largemouth bass	<u>Micropterus salmoides</u> (Lacépède)
Greenside sunfish	<u>Lepomis cyanellus</u> Rafinesque
Pumpkinseed sunfish	<u>Lepomis gibbosus</u> (Linnaeus)
Red breasted sunfish	<u>Lepomis auritis</u> (Linnaeus)
Rock bass	<u>Ambloplites rupestris</u> (Rafinesque)
Anguillidae	
American eel	<u>Anguilla rostrata</u> (Lesueur)

Attachment C – Proposed Alignments

Common Alignment for Path from Oxford Road to Trolley Bridge



Alternative Alignments for Path from Trolley Bridge back to existing path.



Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Joseph P. Gill, Deputy Secretary

October 25, 2010

Ms. Dottie P. Marshall
George Washington Memorial Parkway
c/o Turkey Run Park
McLean, VA 22101

RE: Environmental Review for Provision of Easement to Montgomery County Department of Transportation for Relocation/Construction of MacArthur Boulevard Shared-Use Path, Montgomery County, Maryland.

Dear Ms. Marshall:

Thank you for providing us with the information regarding an occurrence of Narrow Melicgrass (*Melica mutica*) on this project site. Other than this population, the Wildlife and Heritage Service is not aware of any State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. We are glad to see that the population of state-listed threatened plant will be conserved by protective fencing. The Wildlife and Heritage Service of DNR respectfully requests a copy of the site plan showing the precise location of the Melicgrass in relation to the proposed work. We would also recommend that activities that would introduce or further spread non-native invasive plants be avoided.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER # 2010.1440.mo
Cc: D. Brinker, DNR



O'Connell, Michael <michael_o'connell@nps.gov>

Re: copy of 2010 response letter for MacArthur Blvd. shared-use bike path, MO Co.

1 message

O'Connell, Michael <michael_o'connell@nps.gov>

Wed, Jan 2, 2013 at 2:03 PM

To: "Byrne, Lori" <LBYRNE@dnr.state.md.us>

Cc: Brent Steury <Brent_Steury@nps.gov>

Hello Lori,

Thank you for the letter. Wildlife and Heritage Service's comments are now part of the record and will be attached to the EA.

Your office's recommendations are appreciated - the NPS will work to prevent the spread or introduction of non-native invasive plants.

I have attached a map per your information request. The red outline is the planned limit of disturbance for the project. The pink area is a projected potential location for the *Melica mutica* population (your comments were based on this graphic). The green polygon is the approximate existing location of the known population provided by the GWMP Natural Resource Manager, Brent Steury.

Please contact me if you have any other concerns.

Best regards,

Mike O'Connell

On Wed, Dec 12, 2012 at 3:07 PM, Byrne, Lori <LBYRNE@dnr.state.md.us> wrote:

Hi – Please see attached for comments on this project site. Thanks.

Lori A. Byrne

Environmental Review Coordinator

MD DNR Wildlife and Heritage Service

phone 410-260-8573

fax 410-260-8596

—

Mike O'Connell
Environmental Protection Specialist
National Park Service



United States Department of the Interior

NATIONAL PARK SERVICE
George Washington Memorial Parkway
c/o Turkey Run Park
McLean, Virginia 22101

IN REPLY REFER TO:

K3400 (GWMP)

August 31, 2010

Paul A. Peditto, Director
Maryland Department of Natural Resources
Environmental Review Unit
Tawes State Office Building, B-3
580 Taylor Avenue
Annapolis, MD 21401

RE: Provision of easement to Montgomery County Department of Transportation for relocation/construction of MacArthur Boulevard Shared-Use Path - Request for Information

Dear Mr. Peditto:

The National Park Service (NPS) is proposing to provide a permanent easement to Montgomery County Department of Transportation (MCDOT) for the relocation of an 800 foot section of the MacArthur Boulevard Shared-Use Path (shared-use path) onto NPS administered property in the vicinity of Glen Echo Park in Montgomery County, MD. NPS has initiated the preparation of an Environmental Assessment (EA) for the proposed action as required to comply with the National Environmental Protection Act and is requesting information regarding the presence of anadromous finfish or other fish that may occur within the construction areas of the proposed easement, as well as any additional concerns DNR's Environmental Review Unit may have regarding the project.

The relocated section of the shared-use path is part of MCDOT's MacArthur Boulevard Bikeway Improvements project, which extends from I-495 to Oberlin Avenue on MacArthur Boulevard in Montgomery County (Attachment A). Initial consultation with your agency for the project was conducted in 2002 by the county (Attachment B). At that time the proposed alignment for the shared-use path was to follow the roadway for the entire length of the project. However, due to the topography between Oxford Road and the entrance to Glen Echo Park, it is not possible to maintain the original typical section in this area. The proposed action involves providing the permanent easement needed for MCDOT to use the old Cabin John Trolley Right-of-Way (ROW) for the construction of the eight-foot wide, paved, shared-use path. Construction is tentatively scheduled for July 2011.

The alternative alignments for the relocated path are illustrated in Attachment C. As shown, each alternative would share a common alignment that would utilize an existing trolley bridge to cross Minnehaha Branch, which is a tributary of the Potomac River and classified as a Use P-1 stream. Once past the bridge there are three potential connections back to the existing path. The shared-use path would be constructed on fill and would be designed to meet ADA requirements.

Some clearing will be needed to complete construction; however, as per NPS requirements all native trees removed in excess of 6" diameter at breast height (dbh) will be replaced one for one.

Currently the trolley bridge is in a state of disrepair and will require rehabilitation to carry pedestrians and bicyclists. Construction activities would consist of installing wing wall tie-backs, removing the existing timber deck, repairing truss members, jacking and replacing truss bearings and reconstructing beam seats, reconstructing the top of abutment backwalls, and installing a new timber deck and railings. Cleaning and painting of metal surfaces and the substructure would also be required. In order to jack and replace the truss bearings and reconstruct the beam seats, a temporary stream diversion would be needed to maintain the stream flow. This would involve the installation of a sandbag/stone channel diversion and would be constructed in accordance with Maryland's Waterways Construction Guidelines, as well as MDOT Standard Specifications for Construction and Materials, Section 308.

Initial assessments indicate that there would be no permanent impacts to Minnehaha Branch; however, there would be temporary impacts as a result of the stream diversion. Impacts would be minimized through the use of accepted best practices and adherence to MDE and MDOT regulations regarding the protection of wetlands and waterways. Additional requirements would include prohibiting vehicular access to the creek and all areas below the bridge, as well as incorporating strict erosion and sediment controls to protect the stream.

Should you know of or come across any other resource constraint that may be a possible planning issue, please do not hesitate to contact us. We anticipate no significant environmental impacts associated with the project and look forward to receiving any guidance or comments you may have regarding the process or the project itself.

An EA is underway, and a copy of the draft document will be sent to your office for comment in the near future during the public review period.

Should you have any questions at all regarding this project, please do not hesitate to contact site manager Polly Angelakis at 301-320-1403 or via email at Polly_Angelakis@nps.gov

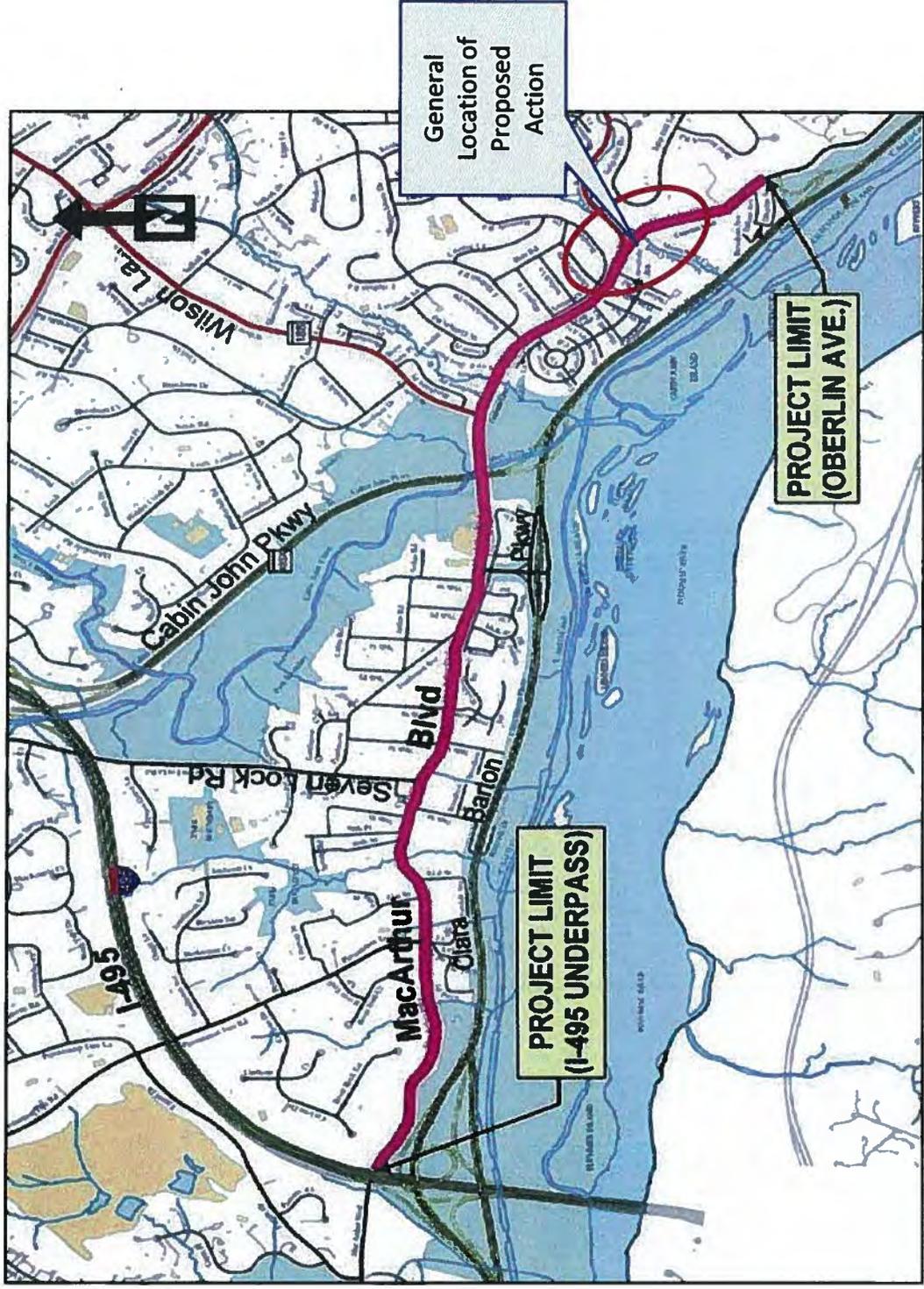
Thank you for your continued assistance.

Sincerely,



Dottie P. Marshall
Superintendent, George Washington Memorial Parkway

Attachment A
MacArthur Boulevard Bikeway Improvement – Segment 2
Overall Project Limits





Farris N. Glendening
Governor

Maryland Department of Natural Resources
ENVIRONMENTAL REVIEW

J. Charles Fox
Secretary

Kathleen Kennedy-Townsend
Lt. Governor

Tawes State Office Building
Annapolis, Maryland 21401

Karen M. White
Deputy Secretary

December 11, 2002

M' Yasamin Esmaili
Montgomery County
Department of Public Works and Transportation
101 Morroa Street, Ninth Floor
Rockville MD 20850-2540

RECEIVED
C: YKE w/enclosure
DEC 17 2002
JSM/SS
O: FILE VIA
DPWT & TRANSPORTATION SERVICES DESIGN SECTION

Dear M' Esmaili:

This letter is in response to your letter of request, dated December 6, 2002, for information on the presence of finfish species in the vicinity of Montgomery County Department of Public Works and Transportation's proposed improvements to the existing bikeway along MacArthur Boulevard.

The proposed improvements to the bikeway could impact tributaries to the Potomac River, including Rock Run and Cabin John Creek (Washington Metropolitan Area). All tributaries to the Potomac River that could be impacted by the proposed work are classified as Use I waters (Water Contact Recreation and Protection of Aquatic Life). Generally, no instream work is permitted in Use I streams during the period of March 1 through June 15, inclusive, during any year.

Our Freshwater Fisheries Division has not documented any spawning activities of anadromous fish species in any of the tributaries within the project area. However, these streams supports many resident fish species. Table V-2 (attached) lists fish species documented by our Fisheries Service in the Washington Metropolitan Area Basin. Many of these species could potentially be found near your project site. These species should be protected by the Use I instream work prohibition period, sediment and erosion control methods, and other Best Management Practices typically used for protection of stream resources.

If you have any questions concerning these comments, you may contact me at 410-260-8331.

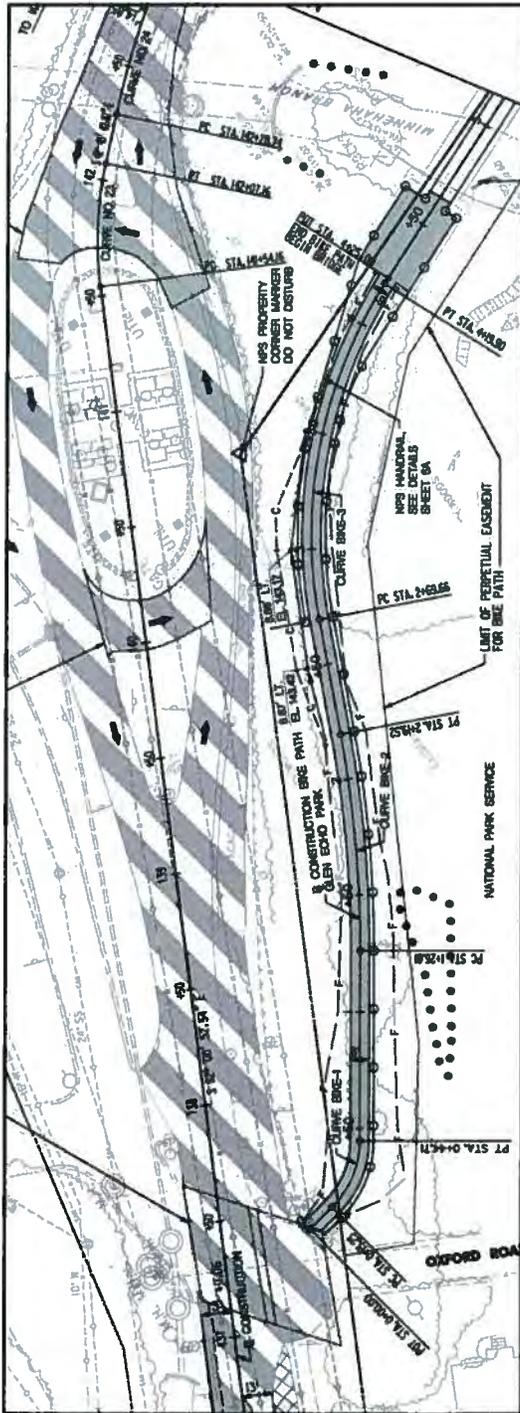
Sincerely,

Ray C. Dintaman, Jr., Director
Environmental Review Unit

RGD
Attachment

Attachment C – Proposed Alignments

Common Alignment for Path from Oxford Road to Trolley Bridge





Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Joseph P. Gill, Deputy Secretary

December 27, 2012

Mike O'Connell
Environmental Protection Specialist
National Park Service
700 George Washington Memorial Parkway
McLean, VA 22101-1717

Subject: Response to fisheries information request for the proposed easement provision by the National Park Service (NPS) to Montgomery County Department of Transportation for relocation/construction of MacArthur Boulevard Shared-Use Path; Minnehaha Branch, vicinity of Cabin John Creek, and unnamed tributaries to the Potomac River; Montgomery County; Washington Metropolitan Area

Dear Mr. O'Connell:

The above referenced project site has been reviewed to determine fisheries species and resources in the vicinity of the proposed project. The proposed activities include the relocation of an 800-foot section of MacArthur Boulevard Shared-Use Path onto NPS administered property in the vicinity of Glen Echo Park in Montgomery County.

As we discussed earlier this month, the initial information request was made in August 2010, but the request may not have reached all appropriate Units in the Department at that time. We could not find record of a previous response from our office (Environmental Review Unit), so we are providing below the up to date information on fisheries resources in the vicinity, for your use. Please note that information on rare, threatened, and endangered species for this area is very important and site-specific, and that information can be found in the response letter that you received from Ms. Lori Byrne of the MD Department of Natural Resources (MD DNR) Wildlife and Heritage Service. This fisheries resource response letter will also not include information regarding the Forest Conservation Act and the Roadside Tree Law, but any Environmental Assessment for a project of this type should also include information and consideration of forest resources protection and conservation. This information can be obtained from the local County, and the MD DNR Forest Service.

The Potomac River tributaries in the immediate vicinity of the project are classified as Use I-P streams (Water Contact Recreation, Protection of Aquatic Life, and Public Water Supply). Generally, no instream work is permitted in Use I-P streams during the period of March 1 through June 15, inclusive, during any year. When yellow perch may be present at the site or a nearby downstream location, no instream work should be conducted from February 15 through June 15, inclusive, during any year.

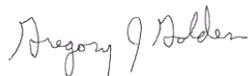
Anadromous fish species including white perch and river herring have been documented in the Potomac River mainstem and in or near tributary confluences in the vicinity of the project. Yellow perch may also be present in

the River mainstem in this vicinity, as well as post-spawn striped bass. Efforts have been ongoing to restore American shad spawning runs in this area (River mainstem), and their presence should also be expected. American eels, a catadromous fish species that lives and grows in freshwater streams before migrating to the ocean to spawn, are also found in this area, including tributaries. The Potomac River mainstem in this area supports smallmouth bass, largemouth bass, walleyes, various panfish, and potentially several other gamefish species. Other resident fish species are also found in the Potomac River and its tributaries in this area. Fish passage from the River mainstem into tributaries is a case by case situation in this area, based on the presence or absence of barriers created by natural rock falls and steep rapids, as well as man made culverts and other barriers, especially those associated with the C&O Canal.

All of the referenced fish are spring spawning species, and the instream restriction period referenced above is an important Best Management Practice (BMP), as well as State instream work permitting requirement, for protection of these species and their spawning activities. Other important BMPs would include stringent sediment and erosion control, use of temporary instream diversions to conduct all unavoidable instream construction in an isolated, de-watered setting, and isolation of any concrete or grout use to avoid pH spikes within natural streamflow. Projects conducted within tributaries in this vicinity should consider aquatic habitat impact minimization at the project site and also downstream. Based on the project description included in the information request letter, we understand that planning efforts have been made to avoid and minimize instream impacts, and to apply BMPs for the protection of aquatic habitat. We advocate and support these BMP efforts, and provided that the instream restriction period referenced above (expanded to the February 15 date for the potential presence of yellow perch downstream) is adhered to and other referenced BMPs are applied, impacts to fisheries resources in the area should be reasonably limited.

If you have further questions on the fisheries resources within the subject project area or any of the information above, please contact me at your convenience at 410-260-8331, or ggolden@dnr.state.md.us

Sincerely,



Greg Golden, Director
Environmental Review Unit



United States Department of the Interior

NATIONAL PARK SERVICE
George Washington Memorial Parkway
c/o Turkey Run Park
McLean, Virginia 22101

IN REPLY REFER TO:

K3400 (GWMP)

August 31, 2010

Mr. Devin Ray
U.S. Fish and Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

Dear Mr. Ray:

The National Park Service (NPS) is proposing to provide a permanent easement to Montgomery County Department of Transportation (MCDOT) for the relocation of an 800 foot section of the MacArthur Boulevard Shared-Use Path (shared-use path) onto NPS administered property in the vicinity of Glen Echo Park in Montgomery County, MD. NPS has initiated the preparation of an Environmental Assessment (EA) for the proposed action as required to comply with the National Environmental Protection Act and is requesting information regarding the presence of federal and state rare, threatened or endangered species that may occur within the construction areas, as well as any additional concerns the U.S. Fish and Wildlife Service may have regarding the project.

The relocated section of the shared-use path is part of MCDOT's MacArthur Boulevard Bikeway Improvements project, which extends from I-495 to Oberlin Avenue on MacArthur Boulevard in Montgomery County (Attachment A). Initial consultation with your agency for the project was completed by the county in 2003 (Attachment B). At that time the proposed alignment was to follow the roadway for the entire length of the project. However, due to the topography between Oxford Road and the entrance to Glen Echo Park, it is not possible to maintain the original typical section in this area. The proposed action involves providing the permanent easement needed for MCDOT to use the old Cabin John Trolley Right-of-Way (ROW) for the construction of the eight-foot wide, paved shared-use path. Construction is tentatively scheduled to begin in July 2011.

The alternative alignments for the relocated path are illustrated in Attachment C. As shown, each alternative would share a common alignment that would utilize an existing trolley bridge to cross Minnehaha Branch, which is a tributary of the Potomac River. Once past the bridge there are three potential connections back to the existing path. The shared-use path would be constructed on fill and would be designed to meet ADA requirements. Some clearing will be needed to complete construction; however, as per NPS requirements all native trees removed in excess of 6" diameter at breast height (DBH) will be replaced one for one.

Currently the trolley bridge is in a state of disrepair and will require rehabilitation to carry pedestrians and bicyclists. Construction activities would consist of installing wing wall tie-backs, removing the existing timber deck, repairing truss members, jacking and replacing truss bearings and reconstructing beam seats, reconstructing the top of abutment backwalls, and installing a new timber deck and railings. Cleaning and painting of metal surfaces and the substructure would also be required. In order to jack and replace the truss bearings and reconstruct the beam seats, a temporary stream diversion would be needed to maintain the stream flow. This would involve the installation of a sandbag/stone channel diversion and would be constructed in accordance with Maryland's Waterways Construction Guidelines, as well as MDOT Standard Specifications for Construction and Materials, Section 308.

NPS staff recently identified a small population of *Melica mutica* (Narrow Melicgrass); a Maryland state listed threatened species, just outside of the proposed limits of disturbance near the southwest corner of the bridge. It is approximately 65 feet from the stream and halfway up the slope. Even though no direct impacts to the plants are anticipated, the contractor would be required to provide fencing around the plants to ensure they are not disturbed.

Should you know of or come across any other resource constraint that may be a possible planning issue, please do not hesitate to contact us. We anticipate no significant environmental impacts associated with the project and look forward to receiving any guidance or comments you may have regarding the process or the project itself. We are also coordinating with the Maryland Department of Natural Resources Wildlife and Heritage Division to obtain and review their file information.

An EA is underway, and a copy of the draft document will be sent to your office for comment in the near future during the public review period.

Should you have any questions at all regarding this project, please do not hesitate to contact site manager Polly Angelakis at 301-320-1403 or via email at Polly_Angelakis@nps.gov

Thank you for your continued assistance.

Sincerely,



Dottie P. Marshall
Superintendent, George Washington Memorial Parkway



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

January 2, 2003

Montgomery County Dept of Public Works and Transportation
Division of Engineering Services, Design Section
Attn: Ms. Yasamin Esmaili
101 Monroe Street, Ninth Floor
Rockville, MD 20850-2540

RE: *MacArthur Boulevard Bikeway Improvement Study, Montgomery County, MD*

Dear Ms. Esmaili:

This responds to your letter, received December 12, 2002, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the vicinity of the above reference project area. We have reviewed the information you enclosed and are providing comments in accordance with Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*):

Except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project impact area. Therefore, no Biological Assessment or further Section 7 Consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For information on the presence of other rare species, you should contact Lori Byrne of the Maryland Wildlife and Heritage Division at (410) 260-8573.

An additional concern of the Service is wetlands protection. Federal and state partners of the Chesapeake Bay Program have adopted an interim goal of no overall net loss of the Basin's remaining wetlands, and the long term goal of increasing the quality and quantity of the Basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project area should be identified, and if construction in wetlands is proposed, the U.S. Army Corps of Engineers, Baltimore District, should be contacted for permit requirements. They can be reached at (410) 962-3670.

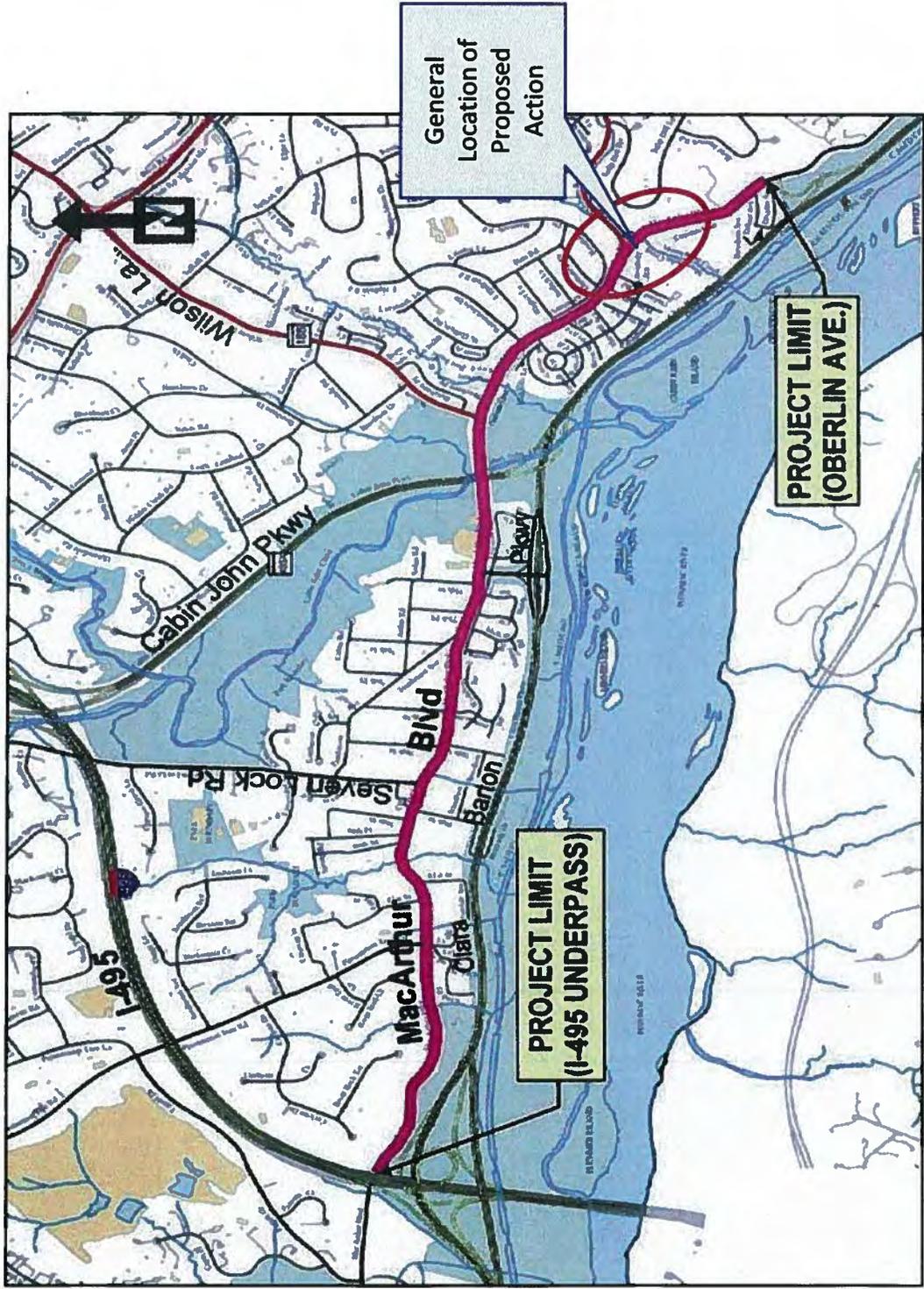
We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interests in these resources. If you have any questions or need further assistance, please contact Charisa Morris at 410-573-4550.

Sincerely,

Mary Rathaswamy

Mary J. Rathaswamy, Ph.D.
Program Supervisor, Threatened and Endangered Species

Attachment A
MacArthur Boulevard Bikeway Improvement – Segment 2
Overall Project Limits





United States Department of the Interior



FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, Maryland 21401
<http://www.fws.gov/chesapeakebay>

December 26, 2012

Mr. Mike O'Connell
Environmental Protection Specialist
National Park Service
700 George Washington Memorial Parkway
McLean, VA 22101-1717

RE: Montgomery County Multi-Use Path on NPS land at Glen Echo park (part of George Washington Memorial Parkway)

Dear Mr. O'Connell:

This responds to your letter, received December 17, 2012, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the vicinity of the above referenced project area. We have reviewed the information you enclosed and are providing comments in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project impact area. Therefore, no Biological Assessment or further section 7 Consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For information on the presence of other rare species, you should contact Lori Byrne of the Maryland Wildlife and Heritage Division at (410) 260-8573.

Effective August 8, 2007, under the authority of the Endangered Species Act of 1973, as amended, the U.S. Fish and Wildlife Service (Service) removed (delist) the bald eagle in the lower 48 States of the United States from the Federal List of Endangered and Threatened Wildlife. However, the bald eagle will still be protected by the Bald and Golden Eagle Protection Act, Lacey Act and the Migratory Bird Treaty Act. As a result, starting on August 8, 2007, if your project may cause "disturbance" to the bald eagle, please consult the "National Bald Eagle Management Guidelines" dated May 2007.



If any planned or ongoing activities cannot be conducted in compliance with the National Bald Eagle Management Guidelines (Eagle Management Guidelines), please contact the Chesapeake Bay Ecological Services Field Office at 410-573-4573 for technical assistance. The Eagle Management Guidelines can be found at:

<http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>.

In the future, if your project can not avoid disturbance to the bald eagle by complying with the Eagle Management Guidelines, you will be able to apply for a permit that authorizes the take of bald and golden eagles under the Bald and Golden Eagle Protection Act, generally where the take to be authorized is associated with otherwise lawful activities.

An additional concern of the Service is wetlands protection. Federal and state partners of the Chesapeake Bay Program have adopted an interim goal of no overall net loss of the Basin's remaining wetlands, and the long term goal of increasing the quality and quantity of the Basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project area should be identified, and if construction in wetlands is proposed, the U.S. Army Corps of Engineers, Baltimore District, should be contacted for permit requirements. They can be reached at (410) 962-3670.

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interests in these resources. If you have any questions or need further assistance, please contact Trevor Clark at (410) 573-4527.

Sincerely,



Genevieve LaRouche
Supervisor