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ENVIRONMENTAL CONSEQUENCES

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4.1

INTRODUCTION

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4.1 General Methodology for Establishing Impact Thresholds and Measuring Effects by Resource

This Environmental Consequences chapter analyzes both beneficial and adverse impacts that would result from implementing the alternatives considered in this EIS. This chapter also includes definitions of impact thresholds (e.g., negligible, minor, moderate, and major), methods used to analyze impacts, and the analysis used for determining cumulative impacts. As required by CEQ regulations implementing NEPA, a summary of the environmental consequences for each alternative is provided in Table 4.1.1 below. The resource topics presented in this chapter, and the organization of the topics, correspond to the resource discussions contained in Chapter 3: Affected Environment.

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
- Methods and thresholds used to determine if impairment of specific resources would occur under any alternative.

These elements are described in the following sections.

4.1.4 General Analysis Methods

The analysis of impacts follows CEQ guidelines and Director's Order 12 procedures (NPS, 2001) and is based on the underlying goal of providing long-term protections, conservation, and restoration of native species and cultural landscapes. 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 Chapter 1, NPS created an interdisciplinary science 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. Impacts described in this section are direct unless otherwise indicated.

4.1.5 Impact Thresholds

Determining the 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/appropriate regulations or guidance, scientific literature and research, or best

professional judgment. Because definitions of intensity vary by impact topic, intensity definitions are provided separately for each impact topic analyzed in this document. Intensity definitions are provided throughout the analysis for negligible, minor, moderate, and major impacts. In all cases, the impact thresholds are defined for adverse impacts. Beneficial impacts are addressed qualitatively.

Potential impacts of the action 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: The affected environment within which an impact would occur, such as local, park-wide, regional, global, affected interest, society as a 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. Duration is variable with each impact topic; therefore, definitions related to each impact topic are provided in the specific impact analysis narrative.

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.

4.1.6 Summary of Impacts

The following table summarizes the findings for the potential long-term impacts on resources as a result of the alternatives. The short-term impacts from the alternatives range from negligible to moderate.

Table 4.1.1 Summary of Impacts to Resources by Alternative

Impact Topic	No Action Alternative	Alternative 1: Central Open Space Plan	Alternative 2: Transit-Oriented Plan	Alternative 3: Active Waterfront Plan
<i>Socio-Economic Resources</i>				
Land Use	Negligible Impact	Moderate Long-Term Adverse Impact; Moderate Long-Term Positive Impact	Moderate Long-Term Adverse Impact; Moderate Long-Term Positive Impact	Moderate Long-Term Adverse Impact; Moderate Long-Term Positive Impact
Planning Policies	Moderate Long-Term Adverse Impact	Moderate Long-Term Positive Impact	Moderate Long-Term Positive Impact	Moderate Long-Term Positive Impact
Zoning	Negligible Impact	Minor Long-Term Adverse Impact	Minor Long-Term Adverse Impact	Minor Long-Term Adverse Impact
Community Facilities	Negligible Impact	Minor Short-Term Adverse Impact; Minor Adverse to Moderate Long-Term Positive Impact	Minor Short-Term Adverse Impact; Minor Adverse to Moderate Long-Term Positive Impact	Short-Term Minor Adverse Impact; Minor Adverse to Moderate Long-Term Positive Impact
Demographics and Housing	Negligible Impact	Minor Short-Term Adverse and Positive Impact; Moderate Long-Term Adverse and Positive Impact	Minor Short-Term Adverse and Positive Impact; Moderate Long-Term Adverse and Positive Impact	Minor Short-Term Adverse and Positive Impact; Moderate Long-Term Adverse and Positive Impact
Environmental Justice	Negligible Impact	Minor to Moderate Long-Term Positive Impact	Minor to Moderate Long-Term Positive Impact	Minor to Moderate Long-Term Positive Impact
Economic/Fiscal Resources	Negligible Impact	Minor to Moderate Positive Impact	Minor to Moderate Positive Impact	Minor to Moderate Positive Impact
<i>Cultural Resources</i>				
Archaeological Resources	Negligible Impact	Minor Positive to Major Adverse Long-Term Positive Impact	Minor Positive to Major Adverse Long-Term Impact	Minor Positive to Major Adverse Long-Term Impact
Historic Structures and Districts	Negligible Impact	Moderate Adverse to Minor Positive Long-Term Impact	Moderate Adverse to Minor Positive Long-Term Impact	Moderate Adverse to Minor Positive Long-Term Impact
Historic Landscapes	Negligible Impact	Moderate Adverse to Moderate Positive Long-Term Impact	Moderate Adverse to Moderate Positive Long-Term Impact	Moderate Adverse to Moderate Positive Long-Term Impact

Visual Resources	Negligible Impact	Major Adverse to Moderate Positive Long-Term Impact	Major Adverse to Moderate Positive Long-Term Impact	Major Adverse to Moderate Positive Long-Term Impact
Natural Resources				
Geophysical Resources	Negligible Impact	Minor Long-Term Adverse Impact	Minor Long-Term Adverse Impact	Minor Long-Term Adverse Impact
Water Resources	Negligible Impact	Minor Short-Term Adverse Impact; Minor to Moderate Long-Term Adverse to Positive Impact	Minor Short-Term Adverse Impact; Minor to Moderate Long-Term Adverse to Positive Impact	Minor Short-Term Adverse Impact; Minor Long-Term Adverse to Positive Impact
Vegetation and Wildlife Resources	Negligible Impact	Moderate Short-Term Adverse Impact; Minor Long-Term Adverse Impact	Moderate Short-Term Adverse Impact; Minor Long-Term Adverse Impact	Moderate Short-Term Adverse Impact; Minor Long-Term Adverse Impact
Urban Systems				
Water Supply	Negligible Impact	Minor Short-Term Adverse Impact; Moderate Long-Term Adverse Impact	Minor Short-Term Adverse Impact; Moderate Long-Term Adverse Impact	Minor Short-Term Adverse Impact; Moderate Long-Term Adverse Impact
Sanitary Sewer and Stormwater Infrastructure	Negligible Impact	Minor Short-Term Adverse Impact; Moderate Long-Term Adverse Impact	Minor Short-Term Adverse Impact; Moderate Long-Term Adverse Impact	Minor Short-Term Adverse Impact; Moderate Long-Term Adverse Impact
Solid Waste Disposal	Negligible Impact	Minor Short-Term Adverse Impact; Moderate Long-Term Adverse Impact	Minor Short-Term Adverse Impact; Moderate Long-Term Adverse Impact	Minor Short-Term Adverse Impact; Moderate Long-Term Adverse Impact
Energy Systems	Negligible Impact	Moderate Long-Term Adverse Impact	Moderate Long-Term Adverse Impact	Moderate Long-Term Adverse Impact
Transportation				
Roadway Capacity and Volume	Negligible Impact	Moderate Long-Term Adverse Impact	Moderate Long-Term Adverse Impact	Moderate Long-Term Adverse Impact
Pedestrian Circulation	Minor Short-Term and Long-Term Adverse Impact	Moderate Long-Term Positive Impact	Moderate Long-Term Positive Impact	Moderate Long-Term Positive Impact
Bicycle Circulation	Minor Long-Term Positive Impact	Minor Long-Term Positive Impact	Minor Long-Term Positive Impact	Minor Long-Term Positive Impact
Transit Systems	Negligible Impact	Moderate Long-Term	Moderate Long-Term	Moderate Long-Term

		Adverse Impact	Adverse Impact	Adverse Impact
Environmental Health				
Noise	Negligible Impact	Moderate Short-Term Adverse Impact; Negligible to Minor Long-Term Adverse Impact	Moderate Short-Term Adverse Impact; Negligible to Minor Long-Term Adverse Impact	Moderate Short-Term Adverse Impact; Negligible to Minor Long-Term Adverse Impact
Air Quality	Negligible Impact	Minor Short-Term and Long-Term Adverse Impact	Minor Short-Term and Long-Term Adverse Impact	Minor Short-Term and Long-Term Adverse Impact
Hazard Materials	Negligible Short-Term Adverse Impact; Minor Long-Term Positive Impact	Negligible Short-Term Adverse Impact; Minor Long-Term Adverse Impact	Negligible Short-Term Adverse Impact; Minor Long-Term Adverse Impact	Negligible Short-Term Adverse Impact; Minor Long-Term Adverse Impact



4.1.4 Cumulative Impacts Analysis Method

The CEQ regulations to implement NEPA require the assessment of cumulative impacts in the decision-making process for federal actions. 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” (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 area truly meaningful. Cumulative impacts are considered for all alternatives, including the No Action Alternative.

Cumulative impacts were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects and plans at NACE and, if applicable, the surrounding area. Table 4.1.2 summarizes these actions that could affect the various resources at the site, along with the plans and policies of both the park and surrounding jurisdictions, which were discussed in Chapter 2. Additional explanation for most of these actions is provided in the narrative following the table.

The analysis for 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 in Chapters 3 and 4 of this document.

Step 2: Set Boundaries. Identify an appropriate spatial and temporal boundary for each resource. The temporal boundaries are noted at the top of Table 4.1.2 and the spatial boundary for each resource topic is listed under each topic.

Step 3: Identify Cumulative Action Scenario. Determine which past, present, and reasonably foreseeable future actions to include with each resource. These are listed in Table 4.1.2 and described below.

Step 4: Cumulative Impact Analysis. Summarize the impacts of other actions, plus impacts of the proposed action to arrive at the total cumulative impact. This analysis is included for each resource in Chapter 4.

Table 4.1.2 Summary of Cumulative Projects

Impact Topic	Study Area	Past Actions	Present Actions	Future Actions
Socio-Economic Resources	Approximate two-mile radius around Project Area	Capital Riverfront	St. Elizabeths West Campus Development; The Yards; Capital Riverfront; Anacostia Waterfront Initiative; Anacostia Transit Area Strategic Investment Plan	Barry Farm Redevelopment; Joint Base Master Plan; Martin Luther King Jr. Avenue Great Streets Project
Cultural Resources	APE	Capital Riverfront	11 th Street Bridges Improvement Project; The Yards;	South Capitol Street Improvement Project; Martin Luther King, Jr. Avenue Great Streets Project; Joint Base Master Plan
Natural Resources	Project Area	None	None	None
Urban Systems	DC Metropolitan Area	Capital Riverfront	St. Elizabeths West Campus Development	Barry Farm Redevelopment; Joint Base Master Plan
Transportation	Approximately two-mile radius around Project Area	Capital Riverfront	11 th Street Bridges Improvement Project; St. Elizabeths West Campus Development; The Yards; Anacostia Transit Area Strategic Investment Plan	Barry Farm Redevelopment; Joint Base Master Plan; Martin Luther King Jr. Avenue Great Streets Project; South Capitol Street Improvement Project
Environmental Health	Approximately two-mile radius around Project Area	Capital Riverfront	11 th Street Bridges Improvement Project; St. Elizabeths West Campus Development; The Yards	Barry Farm Redevelopment; Joint Base Master Plan; Martin Luther King Jr. Avenue Great Streets Project

Descriptions of Cumulative Projects

South Capitol Street Improvement Project

The purpose of the South Capitol Street Improvement Project is to improve safety, mobility, and accessibility and to support economic development in the vicinity of the project. The project will: (1) correct the design and deteriorating condition of the transportation infrastructure which creates safety concerns for vehicular, pedestrian, and bicycle traffic and transit riders; (2) construct missing critical regional roadway connections for vehicles, pedestrians, and bicycles; (3) correct mobility barriers that limit access to activity centers in the study area; and (4) support economic growth in order to improve the density of employment and residential development.

The project involves the reconstruction of South Capitol Street between Independence Avenue and Martin Luther King, Jr. Avenue SE as a grand, urban boulevard, which will provide a scenic gateway to the U.S. Capitol and monumental core. The project also includes the replacement of the Frederick Douglass Memorial Bridge across the Anacostia River. In addition to vehicular improvements, streetscape design features will be added to project area streets, including South Capitol Street, New Jersey Avenue, and Suitland Parkway. The reconstruction of South Capitol Street will also include pedestrian and bicycle facilities, which will consist of widened sidewalks, widened curbside lanes on some streets for bicycle travel, and increased pedestrian- and bicycle-oriented elements such as street trees, benches, and decorative streetlights.

11th Street Bridges Improvement Project

The purpose of the 11th Street Bridges project is to reduce congestion and improve mobility across the Anacostia River on the 11th Street Bridges (11th Street Bridge and Officer Welsh Bridge) and on the local streets in the vicinity of the project. Additionally, the project will increase the safety of vehicular, pedestrian, and bicycle traffic in the Anacostia area; correct design deficiencies in the existing infrastructure; and upgrade evacuation routes for security movements into and out of the nation's capital and military installations. The Phase I Alternative Design includes complete construction of three new river crossings and two new Anacostia Freeway interchanges on the east and west sides of the Anacostia River. The proposed improvements will no longer require traffic to use the neighborhood streets (Martin Luther King, Jr. Avenue, Good Hope Road, and Minnesota Avenue) to access the 11th Street Bridges because there will be a direct connection for trips between the Southeast/Southwest Freeway (I-395) and the Anacostia Freeway (I-295) from the north and a seamless connection to I-295 northbound at the southern end of the 11th Street Bridges complex where none exists today.

In addition to the vehicular improvements, a 14-foot shared-use path will be provided on the downstream side (southwest) of the 11th Street Bridge from O Street to Good Hope Road. No sidewalk will be provided on the upstream side of the bridge due to safety concerns for pedestrians. Direct pedestrian access will be maintained between the bridges and the waterfront on both sides of the River, and bicycle facilities will be connected to the Anacostia Riverwalk Trail along both banks of the river. The DC Bicycle Master Plan will also be implemented in the study area

The 11th Street Bridges project will also improve transit connectivity in the project vicinity by providing movements that are currently missing from the 11th Street Bridge complex to the Anacostia Freeway (I-295). The project will remove some traffic from the local street system, particularly in the historic Anacostia area, allowing for transit to operate under more favorable traffic conditions. In addition to proposed improvements, the low-speed local bridge will be designed and constructed so as not to preclude the implementation of a possible future streetcar system on 11th Street between M Street and Martin Luther King, Jr. Avenue.

DHS Headquarters Consolidation at St. Elizabeth's Development

The purpose of the DHS Headquarters Consolidation at St. Elizabeth's is to develop 4.5 million square feet of secure office space and parking in the District to accommodate the consolidated headquarters of the Department of Homeland Security (DHS) and its components. The DHS Headquarters is being consolidated from approximately 70 buildings in over 40 locations in order to improve critical communication, coordination, and cooperation across components, particularly in responding to natural disasters and terrorist threats. The proposed redevelopment also includes transportation improvements to Martin Luther King, Jr. Avenue, Firth Sterling Avenue, and the I-295/Malcolm X Interchange, as well as the construction of a new road from Firth Sterling Avenue to Malcolm X Avenue that will provide site access.

Barry Farm Redevelopment

A redevelopment plan for Barry Farm was completed in 2006 and proposes strategies to increase residential capacity, and to physically improve the neighborhood, in conjunction with a financial strategy to accomplish the vision. The goal of the plan is to create a community that provides affordable housing options, civic and cultural engagement, economic opportunity, and increased safety. The plan attempts to reestablish a connection with the greater Anacostia community and integrate itself with concurrent redevelopment efforts.

Anacostia Waterfront Initiative

The primary goal of the Anacostia Waterfront Initiative is to reintroduce a clean and vibrant waterfront area to the District of Columbia, with parks, recreational uses, and urban waterfront settings. The focus of the Anacostia Waterfront Initiative is the development of an integrated open space system of 1,800 acres of connected park land, 20 miles of continuous Anacostia Riverwalk and Trail along both banks of the river, improvement of the water quality of the river, and economic development in the form of mixed-use neighborhoods. Some segments of the Anacostia Riverwalk and Trail are currently under construction, including the segment within the Poplar Point Project Area.

Joint Base Master Plan

The overlapping functions of the Naval Support Facility Anacostia and Bolling Air Force Base will be combined into a single operational entity for the purposes of reducing redundancy in facility operations. The two bases share a common boundary and are located to the southwest of the Project Area. The facility improvements required to implement the Joint Base Master Plan are still in the planning stages.

DC Great Streets Framework Plan for Martin Luther King, Jr. Avenue/South Capitol Street

The purpose of the DC Great Streets Framework Plan is to improve the quality of life in neighborhoods along the improved corridors, including public safety, physical appearance, and personal opportunity; support local demand for goods and services through economic development; expand mobility choices and improve the safety and efficiency of all modes of travel; and attract private investment through a public commitment to the community. The Great Streets program is a multi-agency project that uses public investment to satisfy the goals listed previously by improving corridors that are vital to community development of local neighborhoods and are key to enhancing the District's diversity and prosperity. The Martin Luther King, Jr. Avenue/South Capitol Street corridor will be a prominent street that connects several neighborhoods east of the Anacostia River and has a role as a major thoroughfare, as well as a neighborhood amenity.

The project runs between the Anacostia Freeway (I-295) and Southern Avenue SE, which provides the District's east boundary with Maryland. With the implementation of the DC Great Streets Framework Plan for Martin Luther King, Jr. Avenue/South Capitol Street, the corridor will be a walkable, main-street environment that is well-lighted by new streetlights, has enhanced sidewalks and other pedestrian facilities including benches and bike racks, improved transit facilities, and provides a display for public art.

Anacostia Transit Area Strategic Investment Plan

The Anacostia Transit Area Framework Plan envisions the revitalization of Anacostia and vicinity as a vibrant urban village offering a diversity of goods, services, employment and residential opportunities. Once a streetcar suburb, the Anacostia Transit Area is restored and anchored by its transit assets which, in turn, reconnect it to the resources of the region. It is a place where walking and transit are the first choice for transportation as convenient and enjoyable modes.

The implementation of the plan involves construction of an Anacostia Demonstration Line and hiker/biker trail concurrent with the construction of the streetcar line, streetscape improvements including new landscaping and restored street trees, pedestrian amenities at Firth Sterling and Suitland Parkway and crosswalk improvements, and improvements to existing parks and creation of new public spaces.

The Yards

The Southeast Federal Center (SEFC) is located also across the Anacostia River from the project site and is directly west of the Washington Navy Yard. It is being redeveloped as "The Yards," a mixed-use waterfront development along the waterfront with residential, retail, and commercial space. The 42-acre development will ultimately include 3.2 million square feet of residential and office space and more than five acres of open space, including a new waterfront park, currently under construction. The development is planned as a multi-phased project, anticipated to take between 10 and 20 years to fully complete.

Capital Riverfront

The Capitol Riverfront Area includes the Ballpark Area and Buzzard Point. The most prominent building in the area is Washington National's Ballpark. Included in the stadium are the facilities necessary for the park to

operate such as parking areas and maintenance buildings. A mix of retail, restaurant, conference, and other uses are planned for the perimeter of the Ballpark, itself, but have not yet been implemented. The Florida Rock batch cement plant is currently slated for redevelopment as a mixed-use project. A power plant owned and operated by PEPCO is also found on Buzzard Point; however, this facility will be retired by 2012. At that time, additional redevelopment of the Capital Riverfront is anticipated.

4.1.5 Impairment Analysis Method

Chapter 1 describes the related federal acts and policies regarding the prohibition against impairing park resources and values in units of NPS. According to *NPS Management Policies 2006*, an action constitutes an impairment when an impact “would harm the integrity of park resources or values, including the opportunities that would otherwise be present for the enjoyment of those resources or values” (NPS, 2006 sec. 1.4.5). To determine impairment, NPS must evaluate “the particular resources and values that would be affected; the severity, duration, and timing of the impact, the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts” (NPS, 2006 sec. 1.4.5).

NPS units vary based on their enabling legislation, natural and cultural resources present, and park missions; likewise, the activities appropriate for each unit and for areas in each unit also vary. For example, an action appropriate in one unit could impair resources in another unit. Thus, this document analyzes the context, duration, and intensity of impacts of the alternatives, as well as the potential for resources impairment, as required by Director’s Order 12 (NPS, 2001). As stated in the *Management Policies 2006* (sec 1.4.5), an impact on any park resource or value may constitute an impairment, but an impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- Key to the natural or cultural integrity of the park; or
- Identified as a goal in the park’s general management plan or other relevant NPS planning documents.

The following process was used to determine whether the proposed alternatives had the potential to impair park resources and values:

Step 1: The enabling legislation [planning document] was reviewed to ascertain its purpose and significance, resource values, and resource management goals or desired conditions.

Step 2: Resource management goals were identified.

Step 3: Thresholds were established for each resource of concern to determine the context, intensity, and duration of impacts, as defined earlier in this chapter under “Impact Thresholds.”

Step 4: An analysis was conducted to determine if the magnitude of impact would constitute “impairment,” as defined by *NPS Management Policies 2006* (NPS, 2006).

The impact analysis includes findings of impairment of park resources for each of the management alternatives. Visitor use, park operations and management, and socioeconomic environment are not considered resources per se, although they are dependent upon the conservation of park resources. Impairment findings are not included as part of the impact analysis for these topics.

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SOCIOECONOMIC RESOURCES

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4.2.1 Land Use

4.2.1.1 Methodology and Assumptions

Analysis Methods

This section examines the potential land use impacts of the No Action and Action Alternatives on existing and proposed land uses within the surrounding community. Land use impacts are determined by planned physical changes to the Poplar Point Project Area, adjacent properties, and the surrounding area. Impact determinations are typically a function of proximity to the Project Area, existing zoning requirements, the availability of vacant or underutilized land, building conditions, and the presence of outside development forces. Impacts may be direct, indirect, or cumulative. Direct land use impacts are determined by physical changes to the existing land within the Project Area and adjacent properties. Indirect land use impacts are determined by physical changes the surrounding community outside of the Project Area. Cumulative land use impacts result from the combination of physical changes in the Project Area and the contiguous properties in conjunction with other planned, proposed, or underway development projects in the vicinity.

Assumptions

In evaluating potential impacts to land use, it is essential to examine the physical context of the Poplar Point Project Area – a highly visible waterfront location east of the Anacostia River. As described in Section 3.1, the area of analysis includes the Project Site (Poplar Point and southern Anacostia Park, including North Field), the adjacent WMATA garage and Howard Road parcels, the surrounding community, and other areas where the alternatives could directly and/or indirectly affect land use or development patterns.

Impact Thresholds

Thresholds were developed to identify the magnitude of potential land use impacts resulting from the proposed alternatives. Positive impacts are those that would improve and solidify land use patterns and connectivity within the study area. Adverse impacts are those that would degrade land uses or connectivity within the study area. The following thresholds were used to determine the magnitude of impacts on land use:

Negligible: Impacts to land uses would be nonexistent or barely detectable.

Minor: Impacts to land uses would be minimal, though detectable. Mitigation measures, if needed to offset adverse impacts, would be simple and likely to be successful.

Moderate: Impacts would result in changes to land uses that would be readily detectable, measurable, and consequential. Mitigation measures, if needed to offset adverse impacts, may be extensive, though likely successful.

Major: Impacts result in changes to land uses that would have substantial consequences. Extensive mitigation measures would be needed to off-set any adverse impacts and their success is not guaranteed.

Duration

Changes in land use would result in long-term impacts; there are no short-term impacts. Therefore, this analysis assumes that impacts would be long-term, unless identified otherwise.

4.2.1.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, development would not occur and the Poplar Point Project Area would continue to operate as passive open space managed by NPS. The land transfer would not take effect and the site itself would remain undeveloped. The Project Area would continue to operate primarily as open space and parkland.

The No Action Alternative would not influence land use patterns adjacent to the site or in the surrounding community. The Howard Road parcels immediately adjacent to the site would continue to remain under private ownership and would likely be developed. Development of these parcels under the No Action Alternative, however, would occur less quickly, and may contain less complementary uses. Further, the regional growth and development that would be accommodated at Poplar Point would most likely occur in another part of the Washington Metropolitan region, contributing to the region's sprawl. The neighborhoods surrounding the Project Area and across the River would not change as a result of the No Action Alternative.

Cumulative Impacts

Under the No Action Alternative, short- and long-term cumulative impacts to the Project Area and study area would be negative. While development within the study area would likely occur, it is less likely to be cohesive with its surroundings without a major investment east of the River, such as redevelopment of Poplar Point. Thus, the cumulative impacts to land use as a result of the No Action Alternative would be minor and negative.

Conclusion

The No Action Alternative would have a negligible impact on land uses on the Project Area as no change in land use would occur. The indirect and cumulative impact on land uses within the study area would be minor and negative.

4.2.1.3 Alternative 1

Direct Impacts

Project Area

Poplar Point currently consists of approximately 40 acres of accessible parkland and open space, 30 acres of fenced-off open space, and 40 acres devoted to NPS facilities and infrastructure. Alternative 1 would convert Poplar Point to 40 acres of development and 70 acres of fully accessible active and passive recreational uses. Alternative 1 would add units to the area's housing stock that currently do not exist and provide retail uses for the community.

In addition, Alternative 1 would improve visual and physical access to the Anacostia River through such features as a canoe landing, meadow shoreline, and an observation tower. The use of pedestrian bridges or other similar features would improve connectivity with the existing Anacostia community and areas across the River. Thus, although there would be a loss of 70 acres of open space from the redevelopment of Poplar Point (40 acres) and the relocation of the USPP headquarters and aviation facility to the North Field (30 acres), the remaining 140 acres of open space within southern Anacostia Park and Poplar Point (as well as the developed area within Poplar Point) would be enhanced with public amenities and would provide better connectivity to adjacent neighborhoods.

Overall, there would be a moderate long-term adverse impact to land use associated to the loss of open space and a moderate long-term positive impact due to improved access and bringing new housing, jobs and services to an underserved area.

WMATA Garage and Howard Road Parcels

Implementation of the land transfer and redevelopment of Poplar Point under Alternative 1 has the potential to transform the study area. Based on the new investment, uses and activities proposed within Poplar Point, along with population growth anticipated at full build-out, Alternative 1 could spur additional commercial development immediately adjacent to Poplar Point at the WMATA garage and Howard Road parcels. Although the 11 acres of land on Howard Road is under private ownership, Alternative 1 could influence redevelopment patterns that complement and benefit both the Project Area and adjacent parcels. Based on the office and residential approach of Alternative 1 and resulting market forces, the WMATA garage parcel would be redeveloped with a mix of uses and the parcels on Howard Road may be redeveloped with "big box" retail uses. The residential neighborhood and ground-floor retail aspects of Alternative 1 would complement a nearby large-scale retail establishment and could help to create a more cohesive waterfront shopping district.

Indirect Impacts

Anacostia Heights: Anacostia Heights has suffered from disinvestment and inadequate public services. Alternative 1 could expedite the current and proposed revitalization efforts for this area by adding new residents to the area, increasing infrastructure capacity, and providing new opportunities for businesses. It

would also increase the connectivity between Anacostia Heights and the waterfront through the construction of a pedestrian bridge at Chicago Street and the vehicular bridge at W Street. Long-term positive impacts resulting from the increased connectivity and potential for revitalization would be moderate. Most impacts would likely occur in the northern part of the Anacostia Heights neighborhood, in closest proximity to Poplar Point.

Fairlawn Neighborhood: Development under Alternative 1 would not likely influence future residential uses in the area due to the neighborhood's strong housing stock. However, Alternative 1 may indirectly spur infill development of retail uses because uses closest to this neighborhood are residential. Thus, there could be minor long-term positive impacts to land uses within the Fairlawn Neighborhood due to the continued revitalization.

Cumulative Impacts

When considered with other ongoing and planned redevelopment projects in the area, this alternative would have moderate long-term positive cumulative impacts on land uses in the surrounding community. Over the last decade, several redevelopment efforts west of the Anacostia River have been initiated and many more are being undertaken. Redevelopment under Alternative 1 could benefit the surrounding East of the River community by furthering revitalization efforts and reinforcing neighborhood character. Cumulative impacts to specific areas are described below.

Martin Luther King, Jr. Avenue Business Corridor: Development under Alternative 1 would be compatible with the low- and medium-density business uses along the Martin Luther King, Jr. Avenue business corridor. The 3,500 new households at Poplar Point under Alternative 1 would have a moderate positive impact on the local commercial enterprises by creating additional retail demand. Additional demand would also result from people visiting the Project Area for the 210,000 gsf of retail space who may not have come to the area before. Buildings proposed under Alternative 1 would be larger in height and scale than the smaller-scale specialty shops that currently exist along Martin Luther King, Jr. Avenue. To connect with historic Anacostia, ground floor retail would be employed along major pedestrian corridors within Poplar Point under Alternative 1 to mimic the pedestrian-scale experience of Martin Luther King, Jr. Avenue. Development under Alternative 1 could also benefit the existing housing in this corridor, as it may induce residential infill development and provide additional opportunities to strengthen the neighborhood.

Barry Farm: Development on the Point under Alternative 1 would generally support the redevelopment planned for the Barry Farm neighborhood and represent a major investment in a traditionally underserved area. These improvements could make the larger area a more attractive location for residents, encouraging further investment at locations such as Barry Farm. Thus, there could be minor long-term positive impacts to Barry Farm.

St. Elizabeths: Construction under Alternative 1 would not likely result in land use impacts to the St. Elizabeths campus. Alternative 1 could provide housing for the new employees introduced by the campus redevelopment.

Capitol Riverfront Area: Under Alternative 1, a pedestrian bridge would connect Poplar Point to the west side of the Anacostia River. The pedestrian bridge would improve connectivity, potentially enhancing the commercial and recreational uses around the Ballpark, including the Florida Rock property. In addition, by pulling development to Southeast DC, the Poplar Point development could help contribute to the redevelopment efforts of surrounding areas such as Buzzard Point.

The Yards: The Yards, combined with Alternative 1, would help revitalize the waterfront and provide residents and tourists with greater access to the river. Although Alternative 1 would not directly impact this area, the redevelopment of Poplar Point would contribute to the redevelopment efforts due to increased investment, public amenities, resident population, new retail and cultural uses in the Southeast portion of the District. In addition, a pedestrian bridge across the Anacostia River would increase connectivity between the east and west sides of the River. Long-term impacts would be positive and minor.

NSF Anacostia/Bolling Air Force Base: Construction under Alternative 1 would not likely generate land use impacts to the nearby installation.

Conclusion

Implementation of Alternative 1 is expected to have moderate positive impacts on local land use. Although there would be a loss of open space acreage on site, Alternative 1 would create an active mixed-use neighborhood that would increase access, provide new housing stock, and spur complementary development and investment in East of the River neighborhoods.

When conducting an impairment analysis as part of the environmental review of proposed alternatives, the concept of “impairment” and unacceptable impacts relates to park resources that must be left undisturbed. By definition, socio-economic resource topics are not included in this analysis.

Mitigation

- Maximize vehicular and pedestrian connections to adjacent commercial corridors and neighborhoods; utilize W and Chicago streets to enhance connections with Anacostia Heights;
- Ensure that buildings on Poplar Point do not turn their back on existing neighborhoods;
- Provide a mix of retail uses that complement existing and future uses along Martin Luther King, Jr. Avenue – through a variety of floor plates, national chains and “mom and pop” locations; and
- Provide residential and retail uses first to bring new customers and services.

4.2.1.4 Alternative 2

Direct Impacts

Project Area

Alternative 2 would convert Poplar Point to 40 acres of development and 70 acres of active and passive recreational uses. Alternative 2 would provide larger-format (“big-box”) retail options for the community that are not currently available. It would also add housing units to the community’s housing stock that would attract new residents and provide new options for current residents.

In addition, Alternative 2 would improve visual and physical access to the Anacostia River through such features as a canoe landing, meadow shoreline, riverfront observation deck, and a waterfront overlook. The use of pedestrian bridges or other similar features would improve connectivity with the existing Anacostia community and areas across the River. Thus, although there would be a loss of 70 acres of open space from the redevelopment of Poplar Point (40 acres) and the relocation of the USPP headquarters and aviation facility to the North Field (30 acres), the remaining 140 acres of open space within southern Anacostia Park and Poplar Point (as well as the developed area within Poplar Point) would be enhanced with public amenities and would provide better connectivity to adjacent neighborhoods.

Overall, there would be a moderate long-term adverse impact to land use associated to the loss of open space and a moderate long-term positive impact due to improved access and bringing new housing, jobs and services to an underserved area.

WMATA Garage and Howard Road Parcels

Based on the new investment, uses and activities at Poplar Point, along with the population growth anticipated at full build-out, Alternative 2 could spur additional commercial development immediately adjacent to Poplar Point at the WMATA garage and Howard Road parcels. Although the 11 acres of land on Howard Road is under private ownership, Alternative 2 could influence redevelopment patterns that complement and benefit both the Project Area and adjacent parcels. Based on the retail and residential approach of Alternative 2 and resulting market forces, it is assumed that the WMATA garage and Howard Road parcels would be redeveloped with mixed-use retail. The large, regional retail format in Alternative 2 would provide an attractive variation of retail uses, when combined with the mixed-use retail on Howard Road. Long-term positive impacts would be minor to moderate.

Indirect Impacts

Anacostia Heights: Anacostia Heights has suffered from disinvestment and inadequate public services. Alternative 2 would help the current and proposed revitalization efforts for this area by adding new residents to the area and providing new attractive retail uses. It would also increase the connectivity between Anacostia Heights and the waterfront through the construction of a pedestrian bridge at W Street and new vehicular connections from the 11th Street Bridges, the South Capitol Street Bridge, and Chicago Street. Long-term positive impacts resulting from the increased connectivity and potential for revitalization would be

minor. Most impacts would likely to occur in the northern part of the Anacostia Heights neighborhood, in closest proximity to Poplar Point.

Fairlawn Neighborhood: Development under Alternative 2 would not likely change the residential uses in Fairlawn due to its strong existing residential base. Additionally, because the development in Poplar Point under Alternative 2 would be clustered around the Metro, Poplar Point would be less likely to be used by Fairlawn residents. The major investment associated with Alternative 2 could bring a renewed sense of interest in the area. This interest could, in turn, spur infill development between Poplar Point and Fairlawn. Thus, there could be minor long-term positive impacts to land uses within the Fairlawn Neighborhood due to the potential for revitalization.

Cumulative Impacts

When considered with other ongoing and planned redevelopment projects in the area, this alternative would have moderate long-term positive cumulative impacts on land uses in the surrounding community. Over the last decade, several redevelopment efforts west of the Anacostia River have been initiated and many more are being undertaken. Redevelopment under Alternative 2 could benefit the surrounding East of the River community by furthering revitalization efforts and reinforcing neighborhood character. Cumulative impacts to specific areas are described below.

Martin Luther King, Jr. Avenue Business Corridor: Development under Alternative 2 would be compatible with the low- and medium-density business uses along the Martin Luther King, Jr. business corridor. The 4,200 new households at Poplar Point under Alternative 2 would have a moderate positive impact on the local commercial uses by creating additional retail demand. Additional demand would also result from people visiting Poplar Point for the 354,000 gsf of retail space, who many not have come to the area before. Development under this alternative could also benefit the existing housing stock in this corridor, as it may induce residential infill development and provide additional opportunities to strengthen the neighborhood. The height and scale of some of the buildings proposed under Alternative 2 would be larger and taller than those currently along Martin Luther King, Jr. Avenue. Buildings along the main street within Poplar Point would contain ground floor retail uses to create a pedestrian-scale experience to connect with Martin Luther King, Jr. Avenue.

Barry Farm: Alternative 2 would generally support the redevelopment proposed for the Barry Farm neighborhood and could make the larger area a more attractive location for residents through major reinvestment. In addition, the “main street” space off of Howard Road would serve to reconnect the Barry Farm neighborhood to the waterfront. Minor long-term positive impacts due to increased connectivity and the potential for revitalization could result from the implementation of Alternative 2.

St Elizabeths Campus: Alternative 2 would not likely result in land use impacts to the St. Elizabeths Campus. Alternative 2 could provide housing to accommodate the additional employees generated by that development.

Capitol Riverfront Area: In contrast to Alternative 1, Alternative 2 does not propose a pedestrian bridge that would span the Anacostia River. However, new vehicular access points at the 11th Street Bridges and South Capitol Street would provide greater connectivity between areas east and west of the River. Alternative 2 also proposes a water taxi service that would have a minor benefit to the Ballpark and to new development at Buzzard Point and the Florida Rock property by providing an alternate form of transportation that would strengthen the connection between the east and west neighborhoods. This could result in minor long-term positive impacts to land use.

The Yards: The implementation of Alternative 2 could have indirect impacts on The Yards by contributing to the revitalization of the area due to increased investment, public amenities, resident population, and the introduction of new cultural and retail uses. In addition, the water taxi proposed under Alternative 2 would increase connectivity between the east and west sides of the River. Overall, there would be minor long-term positive impacts on The Yards resulting from the implementation of Alternative 2.

NSF Anacostia/Bolling Air Force Base: Construction under Alternative 2 would not likely generate land use impacts to the nearby installation.

Conclusion

Implementation of Alternative 2 is expected to have moderate positive impacts on local land use. Although there would be a loss of open space acreage on site, Alternative 2 would create an active mixed-use neighborhood that would increase access, provide new housing stock, and spur complementary development and investment in East of the River neighborhoods. When conducting an impairment analysis as part of the environmental review of proposed alternatives, the concept of “impairment” and unacceptable impacts relates to park resources that must be left undisturbed. By definition, socio-economic resource topics are not included in this analysis.

Mitigation

Same as for Alternative 1.

4.2.1.5 Alternative 3

Direct Impacts

Project Area

Alternative 3 would convert Poplar Point to 40 acres of development and 70 acres of active and passive recreational uses. It would create an active and accessible waterfront with a mix of neighborhood and cultural uses that are not found in the area. It would provide high quality housing to attract new residents and increase the quality of the existing housing stock. The proposed larger-format (“big-box”) retail uses would complement those found on Martin Luther King, Jr. Avenue.

In addition, Alternative 3 would improve visual and physical access to the Anacostia River through the construction of features such as a two-level promenade, a pier, a marina, and a water taxi. The use of pedestrian bridges or other similar features would improve connectivity with the existing Anacostia community and areas across the River. Thus, although there would be a loss of 70 acres of open space from the redevelopment of Poplar Point (40 acres) and the relocation of the USPP headquarters and aviation facility to the North Field (30 acres), the remaining 140 acres of open space within southern Anacostia Park and Poplar Point (as well as the developed area within Poplar Point) would be enhanced with public amenities and would provide better connectivity to adjacent neighborhoods.

Overall, there would be a moderate long-term adverse impact to land use associated to the loss of open space and a moderate long-term positive impact due to improved access and bringing new housing, jobs and services to an underserved area.

WMATA Garage and Howard Road Parcels

Based on the new investment, uses and activities proposed at Poplar Point, along with population growth anticipated at full build-out, Alternative 3 could spur additional commercial development immediately adjacent to Poplar Point. Although the 11 acres of land on Howard Road is under private ownership, Alternative 3 could influence redevelopment patterns that complement and benefit both the project site and adjacent parcels. Based on the eastern focus of the development, the residential and retail approach of Alternative 3, and the resulting market forces, it is assumed that the Howard Road parcels would be redeveloped for government office use and the WMATA garage would be preserved. Long-term positive impacts would be minor to moderate.

Indirect Impacts

Anacostia Heights: Alternative 3 would help revitalization efforts within this area by supporting increased retail activity and tourism-related expenditures. Alternative 3 would also have a positive impact by increasing connectivity to the waterfront through the construction of pedestrian bridges at Chicago and W Streets and new vehicular connections from the 11th Street Bridges, South Capitol Street, and Chicago Street. Long-term positive impacts resulting from the increased connectivity and potential for revitalization would be minor.

Most land use impacts would likely to occur in the northern end of the neighborhood in closest proximity to Poplar Point.

Fairlawn Neighborhood: Development under Alternative 3 would not likely change the residential uses in Fairlawn due to its strong existing residential base. However, because the development is clustered in the eastern portion of Poplar Point that is closest to Fairlawn, there is a greater potential for connecting the two communities. Also, the major investment associated with Alternative 3 could bring a renewed sense of interest in the area. This interest could spur infill development between Poplar Point and Fairlawn. Thus, there could be minor long-term positive impacts to land uses within the Fairlawn Neighborhood due to the potential for revitalization.

Cumulative Impacts

When considered with other ongoing and planned redevelopment projects in the area, this alternative would have moderate long-term positive cumulative impacts on land uses in the surrounding community. Over the last decade, several redevelopment efforts west of the Anacostia River have been initiated and many more are being undertaken. Redevelopment under Alternative 3 could benefit the surrounding East of the River community by furthering revitalization efforts and reinforcing neighborhood character. Cumulative impacts to specific areas are described below.

Martin Luther King, Jr. Avenue Business Corridor: Development under Alternative 3 would be compatible with the low and medium density business uses along the Martin Luther King, Jr. business corridor. The 350,000 gsf of proposed larger-format retail space at Poplar Point under Alternative 3 would complement the specialty shops on the Martin Luther King, Jr. Avenue business corridor and could have a moderate positive impact on commercial uses by increasing demand. The increased demand would come from the new residents living at Poplar Point and from people visiting Poplar Point who may not have visited the area before. Because Alternative 3 could also add approximately 9,460 residents to the area and over 2,110 employees, commercial uses could be sustained by the area's large and stable customer base. Building heights and scale in Alternative 3 would be oriented so shorter, smaller scale buildings would be located closest to the existing community. The buildings would get taller and larger in scale closer to the waterfront to extend the existing community toward the river.

Barry Farm: Alternative 3 would generally support the redevelopment currently taking place in the Barry Farm neighborhood, by providing a major investment and renewed interest in the area. The development of Poplar Point could complement the transformations in this area and make it a more attractive location for residents. The proposed pedestrian bridges at Chicago and W Street would reconnect existing neighborhoods to the waterfront. Long-term positive impacts from the enhanced connectivity and potential for revitalization would be minor.

St. Elizabeths Campus: Construction under Alternative 3 would not likely result in land use impacts to the St Elizabeths. However, Alternative 3 could provide housing to accommodate the additional employees generated by that development.

Capitol Riverfront Area: New vehicular access points from the 11th Street Bridges and South Capitol Street would provide greater connectivity between areas east and west of the River. Alternative 3 proposes a water taxi service that would have a minor positive impact on the Ballpark and new development at Buzzard Point and the Florida Rock property by providing an alternate form of transportation, which would strengthen the connection between the east and west neighborhoods. This could result in minor long-term positive impacts to land use.

The Yards: Although Alternative 3 would not directly impact this area, it could help contribute to redevelopment efforts in the area due to increased investment, increased population, and new cultural and retail uses. The water taxi proposed under Alternative 3 would increase connectivity between the east and west sides of the River. Overall, there would be minor long-term positive impacts on The Yards resulting from the implementation of Alternative 3.

NSF Anacostia/Bolling Air Force Base: Construction under Alternative 3 would not likely result in land use impacts to the nearby installation.

Conclusion

Implementation of Alternative 3 is expected to have moderate positive impacts on local land use. Although there would be a loss of open space acreage on site, Alternative 3 would create an active mixed-use neighborhood that would increase access, provide new housing stock, and spur complementary development and investment in East of the River neighborhoods. When conducting an impairment analysis as part of the environmental review of proposed alternatives, the concept of “impairment” and unacceptable impacts relates to park resources that must be left undisturbed. By definition, socio-economic resource topics are not included in this analysis.

Mitigation

Same as for Alternative 1.

4.2.2 Planning Policies

4.2.2.1 Methodology and Assumptions

Analysis Methods

This section examines the compatibility and consistency of each of the proposed alternatives to the plans, policies, and regulations relevant to the Project Area and study area.

Assumptions

In general, the area of analysis for planning impacts is the Project Area and the surrounding community. The surrounding community includes the neighborhoods of Ward 8, as well as the areas directly across the River (i.e. the Washington Navy Yard, Nationals Ballpark, etc.) that could be directly or indirectly impacted by the land transfer and redevelopment of Poplar Point.

Impact Thresholds

The following thresholds were used to determine the magnitude of impacts on planning policies:

Positive: A positive impact occurs when an alternative is consistent with or fulfills applicable land use plans and policies.

Minor: A minor adverse impact occurs when an alternative is generally compatible with applicable plans and policies; however, there may be limited inconsistencies with specific goals, objectives, and priorities of these plans.

Moderate: A moderate adverse impact occurs when an alternative is compatible with several applicable plans and policies yet also inconsistent with several plans and policies. A moderate adverse impact is sufficient enough to cause a noticeable change and may alter or inhibit the goals, objectives, and priorities of these plans.

Major: A major adverse impact occurs when an alternative is largely inconsistent and incompatible with applicable plans and policies. The conflicts with the goals, objectives, and priorities of these plans would be substantial, widespread, and long-term.

Duration

No short-term impacts would occur. Long-term impacts would represent more permanent changes.

4.2.2.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, the Project Area would remain under the jurisdiction of NPS and would continue to operate as open space and recreation consistent with Anacostia Park. The vast majority of the applicable planning policies call for the redevelopment of Poplar Point and the revitalization of the surrounding neighborhoods. Because the No Action Alternative does not support these goals and is largely inconsistent with the applicable plans and policies, it would have a long-term moderate adverse impact on plans and policies.

Cumulative Impacts

The implementation of the No Action Alternative would result in long-term moderate adverse impacts to plans and policies. When considered with the impacts of other past, present, and reasonably foreseeable future actions, including redevelopment of Barry Farm, revitalization of Martin Luther King Jr. Avenue, and full build-out of St. Elizabeths, there would be a major adverse cumulative impact because the majority of Poplar Point would continue to be inaccessible despite the increased demand for usable open space and amenities.

Conclusion

Under the No Action Alternative, the project site would not be redeveloped. This would be inconsistent with several federal and District plans, because of the fenced-off and inaccessible open space and unrealized potential of the waterfront at Poplar Point, there would be long-term moderate adverse impact.

4.2.2.3 Alternative 1

Direct and Indirect Impacts

Comprehensive Plan for the National Capital: Federal Element

Alternative 1 supports the Federal Environment goals and policies of the Federal Element of the *Comprehensive Plan*. Alternative 1 would improve stormwater management by creating a buffer between the Development Area within Poplar Point and the Anacostia River. This buffer would be used to cleanse runoff from pervious surfaces and slowly filter into the ground in order to minimize adverse water quality impacts to the Anacostia River. Alternative 1 would retain and remediate the existing wetlands within Poplar Point for this purpose. Terraces would be constructed as part of Alternative 1 to maintain the floodplain. New native vegetation would be installed within Poplar Point, and no development would occur on steep slopes. While development within Poplar Point would increase the amount of impervious surface, using wetlands as a vegetated buffer between the Development Area and the River, as proposed in Alternative 1, could reduce non-point source pollutants and help restore the Anacostia River's natural functions. Alternative 1 would be consistent with the environmental policies in this plan because it would provide enhancements to Stickfoot

Creek, which add many ecological benefits and an aesthetic amenity to both the Project Area and surrounding community.

Alternative 1 supports the Parks and Open Space goals and policies of the Federal Element of the *Comprehensive Plan*. Alternative 1 would set aside a minimum of 70 acres of land within Poplar Point for a mix of passive and active recreation uses and open space. It would enhance the existing facilities within southern Anacostia Park. Additional access points would be provided to increase the overall benefit to the surrounding community of living in close proximity to the park, as well as providing more regional access to the park. Alternative 1 would also maintain a continuous recreation area along the waterfront.

Alternative 1 would support the goals and policies Preservation of Historic Features Element of the *Comprehensive Plan*. Alternative 1 would preserve the horizontal character of the city through adherence to the 1910 Heights of Buildings Act. By doing so, it would also protect the skyline around central Washington.

Extending the Legacy

Legacy Plan suggests that Poplar Point be redeveloped to include museums, restaurants, housing, parks, and shopping venues, as is proposed as part of Alternative 1. The *Legacy Plan* further suggests that the Anacostia waterfront remain primarily undeveloped and informal in character to complement the surrounding neighborhood setting. While Alternative 1 would introduce many uses to Poplar Point, it would also preserve 70 acres for passive recreational spaces, interpretive trails, and athletic fields that both encourage activity and protect the open space character of the waterfront. In addition, Alternative 1 would preserve the continuous green space along the east side of the Anacostia River from Poplar Point through the North Field.

Memorials and Museums Master Plan

Within the *2M Plan*, Poplar Point is mentioned as one of the primary areas for the location of new memorials, museums, and commemorative sites. Alternative 1 is consistent with the goals in the Memorials and Museums Master Plan because two key locations at the project site would be reserved as commemorative sites. One of these sites would be located on the point with a prominent waterfront view, as recommended in the *2M Plan*. Alternative 1 would also include a museum or prominent cultural destination that would be accessible from the Anacostia Metro station, as recommended in the *2M Plan*.

1910 Height of Buildings Act

Under this Act, the maximum allowable building height would be limited to 130 feet. Under Alternative 1, building heights in Poplar Point would range from 50 to 130 feet, which would comply with the 1910 Height of Buildings Act. No tall structures are proposed in the North Field or southern Anacostia Park.

Comprehensive Plan for the National Capital: District Elements

The revitalization efforts under Alternative 1 would fulfill stated land use, economic, and open space goals and policies of the District Elements of the *Comprehensive Plan* by providing a mixed-use development that

would be compatible with the surrounding residential community and would encourage continued reinvestment in the community. Consistency with applicable policies is described below.

In accordance with the Land Use and Economic Development policies of the District Elements of *Comprehensive Plan*, Alternative 1 would provide a mix of uses intended to ensure the economic stability of Poplar Point, as well as encourage growth and reinvestment within Anacostia. Alternative 1 would reuse a large government owned site for local and housing employment opportunities while enhancing waterfront access. Alternative 1 would provide a mix of retail, office, residential and cultural/civic uses within Poplar Point, as well as retain 70 acres of open space for parkland. Alternative 1 would also implement improvements in southern Anacostia Park and relocate the USPP headquarters and aviation facility to the top of the park. The mix of uses proposed would not only be compatible with the surrounding neighborhood, it could help economically and socially rejuvenate the area by increasing job opportunities, improving the stability of existing businesses, attracting additional residents and visitors to the area, and enhancing park facilities. Although implementation of Alternative 1 would require the transfer of land currently within Anacostia Park, it would set aside a minimum of 70 acres for a mix of active and passive recreation uses within Poplar Point and implement facilities improvements within southern Anacostia Park. Alternative 1 would also provide two memorial sites and includes civic/cultural space at the point, all of which would provide public benefit uses on a large site. Alternative 1 proposes to increase the height and scale of new development from the Anacostia Metro station out to the point. This was done to extend the existing size and scale and uses in Historic Anacostia in those areas closest to existing development to transition from existing uses to new uses and extend the existing urban fabric. Alternative 1 would extend development out from the Anacostia Metro station to provide a regionally accessible community. Alternative 1 would implement new pedestrian, bicycle, and public transportation connections between the Project Area, as well as for the surrounding community.

In accordance with the Parks, Recreation, and Open Space goals and policies of the District Elements of the *Comprehensive Plan*, Alternative 1 would set aside a minimum of 70 acres of open space within Poplar Point for active and passive recreation uses. Alternative 1 would maintain a continuous corridor of recreation uses along the waterfront, preserving access to the Anacostia River for all. Improvements would be implemented within southern Anacostia Park to enhance the recreational amenities provided and maximize the regional and community benefit of the park. In addition, new access points, pedestrian trails, and bicycle trails would be implemented as part of Alternative 1 to overcome the existing access deficiencies that limit attendance and use of the park.

In accordance with the Urban Design goals and policies of the District Elements of the *Comprehensive Plan*, Alternative 1 would strengthen and enhance the image of Anacostia by developing a prominent site along the Anacostia River. Development would be focused on the point under Alternative 1, making the development visible from the west side of the River. Alternative 1 would comply with the 1910 Height of Buildings Act. No building would be taller than 130 feet. Further, the scale and height of buildings would increase closer to the point to provide a transition from the surrounding neighborhood with its low-scale buildings up to the taller structures within Poplar Point that would provide prominence at the point. Alternative 1 would provide

cultural/civic uses at the point to encourage public access to the waterfront and make the River views more prominent.

Alternative 1 supports the *Lower Anacostia Element* goals and policies of the District Elements of the *Comprehensive Plan*, which call for mixed-use development that enhances the waterfront experience, encourages the siting of new museums and cultural attractions, provides park land with a variety of active and passive uses, promotes environmental preservation, and contributes to the overall economic revitalization of the surrounding community.

AWI Framework Plan

Under Alternative 1, the proposed mixed-use development would establish a new image of the Anacostia waterfront and remove existing barriers to public waterfront access. Alternative 1 includes plans for enhancing connectivity by adding a pedestrian bridge across I-295 at Chicago Street and across the Anacostia River. Furthermore, development of Poplar Point would transform the area into a vibrant mixed-use neighborhood and accelerate the AWI efforts to improve the Anacostia waterfront. Because Alternative 1 would provide more than 70 acres of park land and preserve 6.25 acres of existing wetlands in place, it would exceed the open space provisions of the AWI. Alternative 1 would also meet other AWI goals by daylighting Stickfoot Creek, adding boat landings to the waterfront, and providing a wealth of new residential units, recreational spaces, and cultural amenities.

Center City Action Agenda

Alternative 1 would satisfy several of the goals outlined for Poplar Point as a major development site in the *Action Agenda*. Alternative 1 would bring economic development and retail services east of the River and connect to existing communities through a pedestrian bridge across the Anacostia River and pedestrian connections at Chicago Street and Howard Road.

SNAPs

The implementation of Alternative 1 would introduce substantial new investment and physical improvements to Poplar Point and likely induce further development and revitalization of nearby southeast neighborhoods. Alternative 1 would provide new and diversified community services. This alternative would also meet the plan's environmental goals by enhancing the ecological function of the site and adjacent River.

Cumulative Impacts

Alternative 1 would meet the goals and objectives put forth in numerous federal and District plans and policies. Through the economic development of Poplar Point, implementation of Alternative 1, when considered with other ongoing or planned projects in the surrounding area, could contribute to the revitalization of Anacostia and result in a moderate positive cumulative impact to applicable land use and planning policies. In addition, proposed improvements in southern Anacostia Park and within Poplar Point would contribute a public benefit that could be enjoyed by all.

Conclusion

Development under Alternative 1 would transform an underutilized parcel into a mix of uses and thus would fulfill many of the goals and objectives of the relevant plans and policies, resulting in a long-term moderate positive impact. However, Alternative 1 would reduce the total amount of open space and result in the loss of a portion of Anacostia Park. This would be offset by a substantial investment in park amenities within southern Anacostia Park, as well as improved access to the park that could increase its prominence within the District and in the national park system. When conducting an impairment analysis as part of the environmental review of proposed alternatives, the concept of “impairment” and unacceptable impacts relates to park resources that must be left undisturbed. By definition, socio-economic resource topics are not included in this analysis.

Mitigation

- Develop a vibrant mix of uses that complement Historic Anacostia
- Ensure connections to Anacostia
- Protect and enhance natural areas

4.2.2.4 Alternative 2

Direct and Indirect Impacts

Comprehensive Plan for the National Capital: Federal Element

Alternative 2 supports the Federal Environment goals and policies of the Federal Element of the *Comprehensive Plan*. Alternative 2 would improve stormwater management by creating a buffer between the Development Area within Poplar Point and the Anacostia River. This buffer would be used to cleanse runoff from pervious surfaces and slowly filter into the ground in order to minimize adverse water quality impacts to the Anacostia River. Alternative 2 differs from Alternative 1 in that it would not retain and remediate the existing wetlands within Poplar Point. New and larger wetlands would be created along the waterfront to create a natural buffer between Poplar Point and the River, while still being used to treat and filter stormwater runoff from developed area. Terraces would be constructed as part of Alternative 2 to maintain the floodplain. New native vegetation would be installed within Poplar Point, and no development would occur on steep slopes. While development within Poplar Point would increase the amount of impervious surface, using wetlands as a vegetated buffer between the Development Area and the River, as proposed in Alternative 2, could reduce non-point source pollutants and help restore the Anacostia River’s natural functions. Alternative 2 would be consistent with the environmental policies in this plan because it would provide enhancements to Stickfoot Creek, which add many ecological benefits and an aesthetic amenity to both the Project Area and surrounding community.

Alternative 2 supports the Parks and Open Space goals and policies of the Federal Element of the *Comprehensive Plan*. Alternative 2 would set aside a minimum of 70 acres of land within Poplar Point for a mix of passive and active recreation uses and open space. It would enhance the existing facilities within

southern Anacostia Park. Additional access points would be provided to increase the overall benefit to the surrounding community of living in close proximity to the park, as well as providing more regional access to the park. Alternative 2 would also maintain a continuous recreation area along the waterfront.

Alternative 2 would support the goals and policies Preservation of Historic Features Element of the *Comprehensive Plan*. Alternative 2 would preserve the horizontal character of the city through adherence to the 1910 Heights of Buildings Act. By doing so, it would also protect the skyline around central Washington.

Extending the Legacy

Legacy Plan suggests that Poplar Point be redeveloped to include museums, restaurants, housing, parks, and shopping venues, as is proposed as part of Alternative 2. The *Legacy Plan* further suggests that the Anacostia waterfront remain primarily undeveloped and informal in character to complement the surrounding neighborhood setting. Alternative 2 would accomplish this goal. In addition, Alternative 2 would preserve the continuous green space along the east side of the Anacostia River from Poplar Point through the North Field.

Memorials and Museums Master Plan

Within the *2M Plan*, Poplar Point is mentioned as one of the primary areas for the location of new memorials, museums, and commemorative sites. Alternative 2 is consistent with the goals in the Memorials and Museums Master Plan because two key locations at the project site would be reserved as commemorative sites. One of these sites would be located on the point with a prominent waterfront view, as recommended in the *2M Plan*. Alternative 2 would also include a museum or prominent cultural destination that would be accessible from the Anacostia Metro station, as recommended in the *2M Plan*.

1910 Height of Buildings Act

Under this Act, the maximum allowable building height would be limited to 130 feet. Under Alternative 2, building heights in Poplar Point would range from 50 to 130 feet, which would comply with the 1910 Height of Buildings Act. No tall structures are proposed in the North Field or southern Anacostia Park.

Comprehensive Plan for the National Capital: District Elements

The revitalization efforts under Alternative 2 would fulfill stated land use, economic, and open space goals and policies of the District Elements of the *Comprehensive Plan* by providing a mixed-use development that would be compatible with the surrounding residential community and would encourage continued reinvestment in the community. Consistency with applicable policies is described below.

In accordance with the Land Use and Economic Development policies of the District Elements of *Comprehensive Plan*, Alternative 1 would provide a mix of uses intended to ensure the economic stability of Poplar Point, as well as encourage growth and reinvestment within Anacostia. Alternative 2 would reuse a large government owned site for local and housing employment opportunities while enhancing waterfront access. Alternative 2 would provide a mix of retail, office, residential and cultural/civic uses within Poplar Point, as well as retain 70 acres of open space for parkland. Alternative 1 would also implement

improvements in southern Anacostia Park and relocate the USPP headquarters and aviation facility to the top of the park. The mix of uses proposed would not only be compatible with the surrounding neighborhood, it could help economically and socially rejuvenate the area by increasing job opportunities, improving the stability of existing businesses, attracting additional residents and visitors to the area, and enhancing park facilities. Although implementation of Alternative 2 would require the transfer of land currently within Anacostia Park, it would set aside a minimum of 70 acres for a mix of active and passive recreation uses within Poplar Point and implement facilities improvements within southern Anacostia Park. Alternative 2 would also provide two memorial sites and includes civic/cultural space at the point, all of which would provide public benefit uses on a large site. Alternative 2 proposes to increase the height and scale of new development from the Anacostia Metro station towards the interior of Poplar Point. This was done to extend the existing size and scale and uses in Historic Anacostia in those areas closest to existing development to transition from existing uses to new uses and extend the existing urban fabric. Alternative 2 would concentrate development near the Anacostia Metro station to provide a regionally accessible community. Alternative 2 would implement new pedestrian, bicycle, and public transportation connections between the Project Area, as well as for the surrounding community.

In accordance with the Parks, Recreation, and Open Space goals and policies of the District Elements of the *Comprehensive Plan*, Alternative 2 would set aside a minimum of 70 acres of open space within Poplar Point for active and passive recreation uses. Alternative 2 would maintain a continuous corridor of recreation uses along the waterfront, preserving access to the Anacostia River for all. Improvements would be implemented within southern Anacostia Park to enhance the recreational amenities provided and maximize the regional and community benefit of the park. In addition, new access points, pedestrian trails, and bicycle trails would be implemented as part of Alternative 2 to overcome the existing access deficiencies that limit attendance and use of the park.

In accordance with the Urban Design goals and policies of the District Elements of the *Comprehensive Plan*, Alternative 2 would strengthen and enhance the image of Anacostia by developing a prominent site around the Anacostia Metro station and retaining the riverfront access for the benefit of all. Alternative 2 would comply with the 1910 Height of Buildings Act. No building would be taller than 130 feet. Further, the scale and height of buildings would increase towards the interior of Poplar Point to provide a transition from the surrounding neighborhood with its low-scale buildings up to the taller structures within Poplar Point that would be prominent from the west side of the River. Alternative 2 would provide cultural/civic uses at the point to encourage public access to the waterfront and make the River views more prominent.

Alternative 2 supports the *Lower Anacostia Element* goals and policies of the District Elements of the *Comprehensive Plan*, which call for mixed-use development that enhances the waterfront experience, encourages the siting of new museums and cultural attractions, provides park land with a variety of active and passive uses, promotes environmental preservation, and contributes to the overall economic revitalization of the surrounding community.

AWI Framework Plan

Under Alternative 2, the proposed mixed-use development would establish a new image of the Anacostia waterfront and remove existing barriers to public waterfront access. Alternative 2 includes plans for enhancing connectivity by connecting to planned pedestrian bridges across the River and implementing a water taxi system. Furthermore, development of Poplar Point would transform the area into a vibrant mixed-use neighborhood and accelerate the AWI efforts to improve the Anacostia waterfront. Because Alternative 2 would provide more than 70 acres of parkland and preserve 6.25 acres of existing wetlands in place, it would exceed the open space provisions of the AWI. Alternative 2 would also meet other AWI goals by daylighting Stickfoot Creek, adding boat landings to the waterfront, and providing new residential units, recreational spaces, and cultural amenities.

Center City Action Agenda

Alternative 2 would satisfy several of the goals outlined for Poplar Point as a major development site in the *Action Agenda*. Alternative 2 would bring economic development and retail services east of the River and connect to existing communities through concentrated development around the Anacostia Metro Station and new pedestrian, vehicle, and bicycle connections to the Project Area.

SNAPs

The implementation of Alternative 2 would introduce substantial new investment and physical improvements to Poplar Point and likely induce further development and revitalization of nearby southeast neighborhoods. Alternative 2 would provide new and diversified community services. This alternative would also meet the plan's environmental goals by enhancing the ecological function of the site and adjacent River.

Cumulative Impacts

Alternative 2 would meet the goals and objectives put forth in numerous federal and District plans and policies. Through the economic development of Poplar Point, implementation of Alternative 2, when considered with other ongoing or planned projects in the surrounding area, could contribute to the revitalization of Anacostia and result in a moderate positive cumulative impact to applicable land use and planning policies. In addition, proposed improvements in southern Anacostia Park and within Poplar Point would contribute a public benefit that could be enjoyed by all.

Conclusion

Development under Alternative 2 would transform an underutilized parcel into a mix of uses and thus would fulfill many of the goals and objectives of the relevant plans and policies, resulting in a long-term moderate positive impact. However, Alternative 2 would reduce the total amount of open space and result in the loss of a portion of Anacostia Park. This would be offset by a substantial investment in park amenities within southern Anacostia Park, as well as improved access to the park that could increase its prominence within the District and in the national park system. When conducting an impairment analysis as part of the environmental review of proposed alternatives, the concept of "impairment" and unacceptable impacts

relates to park resources that must be left undisturbed. By definition, socio-economic resource topics are not included in this analysis.

Mitigation

Same as for Alternative 1.

4.2.2.5 Action Alternative 3

Direct and Indirect Impacts

Comprehensive Plan for the National Capital: Federal Element

Alternative 3 supports the Federal Environment goals and polices of the Federal Element of the *Comprehensive Plan*. Alternative 3 would improve stormwater management by creating a buffer between the Development Area within Poplar Point and the Anacostia River. This buffer would be used to cleanse runoff from pervious surfaces and slowly filter into the ground in order to minimize adverse water quality impacts to the Anacostia River. Alternative 3 differs from Alternatives 1 and 2 in that it would preserve, remediate, and expand the highest functioning wetlands within Poplar Point. More wetlands area would be added at Poplar Point than currently exists. The wetlands would be used to treat and filter stormwater runoff from the Development Area. Terraces would be constructed as part of Alternative 3 to maintain the floodplain. New native vegetation would be installed within Poplar Point, and no development would occur on steep slopes. While development within Poplar Point would increase the amount of impervious surface, using wetlands as a vegetated buffer between the Development Area and the River, as proposed in Alternative 3, could reduce non-point source pollutants and help restore the Anacostia River's natural functions. Alternative 3 would be consistent with the environmental policies in this plan because it would provide enhancements to Stickfoot Creek, which add many ecological benefits and an aesthetic amenity to both the Project Area and surrounding community.

Alternative 3 supports the Parks and Open Space goals and polices of the Federal Element of the *Comprehensive Plan*. Alternative 3 would set aside a minimum of 70 acres of land within Poplar Point for a mix of passive and active recreation uses and open space. It would enhance the existing facilities within southern Anacostia Park. Additional access points would be provided to increase the overall benefit to the surrounding community of living in close proximity to the park, as well as providing more regional access to the park. Alternative 3 would also maintain a continuous recreation area along the waterfront.

Alternative 3 would support the goals and policies Preservation of Historic Features Element of the *Comprehensive Plan*. Alternative 3 would preserve the horizontal character of the city through adherence to the 1910 Heights of Buildings Act. By doing so, it would also protect the skyline around central Washington.

Extending the Legacy

Legacy Plan suggests that Poplar Point be redeveloped to include museums, restaurants, housing, parks, and shopping venues, as is proposed as part of Alternative 3. The *Legacy Plan* further suggests that the Anacostia

waterfront remain primarily undeveloped and informal in character to complement the surrounding neighborhood setting. Alternative 3 would accomplish this goal. In addition, Alternative 3 would preserve the continuous green space along the east side of the Anacostia River from Poplar Point through the North Field.

Memorials and Museums Master Plan

Within the *2M Plan*, Poplar Point is mentioned as one of the primary areas for the location of new memorials, museums, and commemorative sites. Alternative 3 is consistent with the goals in the Memorials and Museums Master Plan because two key locations at the project site would be reserved as commemorative sites. One of these sites would be located on the point with a prominent waterfront view, as recommended in the *2M Plan*. Alternative 3 would also include a museum or prominent cultural destination that would be accessible from the Anacostia Metro station, as recommended in the *2M Plan*.

1910 Height of Buildings Act

Under this Act, the maximum allowable building height would be limited to 130 feet. Under Alternative 3, building heights in Poplar Point would range from 50 to 130 feet, which would comply with the 1910 Height of Buildings Act. No tall structures are proposed in the North Field or southern Anacostia Park.

Comprehensive Plan for the National Capital: District Elements

The revitalization efforts under Alternative 3 would fulfill stated land use, economic, and open space goals and policies of the District Elements of the Comprehensive Plan by providing a mixed-use development that would be compatible with the surrounding residential community and would encourage continued reinvestment in the community. Consistency with applicable policies is described below.

In accordance with the Land Use and Economic Development policies of the District Elements of *Comprehensive Plan*, Alternative 3 would provide a mix of uses intended to ensure the economic stability of Poplar Point, as well as encourage growth and reinvestment within Anacostia. Alternative 3 would reuse a large government owned site for local and housing employment opportunities while enhancing waterfront access. Alternative 3 would provide a mix of retail, office, residential and cultural/civic uses within Poplar Point, as well as retain 70 acres of open space for parkland. Alternative 3 would also implement improvements in southern Anacostia Park and relocate the USPP headquarters and aviation facility to the top of the park. The mix of uses proposed would not only be compatible with the surrounding neighborhood, it could help economically and socially rejuvenate the area by increasing job opportunities, improving the stability of existing businesses, attracting additional residents and visitors to the area, and enhancing park facilities. Further, development under Alternative 3 would be concentrated around the Anacostia Metro station to take advantage of the Project Area's accessibility by public transportation. Although implementation of Alternative 3 would require the transfer of land currently within Anacostia Park, it would set aside a minimum of 70 acres for a mix of active and passive recreation uses within Poplar Point and implement facilities improvements within southern Anacostia Park. Alternative 3 would also provide two memorial sites and includes civic/cultural space at the point, all of which would provide public benefit uses on a large site. Alternative 3 proposes to increase the height and scale of new development from the

Anacostia Metro station towards the interior of Poplar Point. This was done to extend the existing size and scale and uses in Historic Anacostia in those areas closest to existing development to transition from existing uses to new uses and extend the existing urban fabric. Alternative 3 would concentrate development near the Anacostia Metro station to provide a regionally accessible community. Alternative 3 would implement new pedestrian, bicycle, and public transportation connections between the Project Area, as well as for the surrounding community.

In accordance with the Parks, Recreation, and Open Space goals and policies of the District Elements of the *Comprehensive Plan*, Alternative 3 would set aside a minimum of 70 acres of open space within Poplar Point for active and passive recreation uses. Alternative 3 would maintain a continuous corridor of recreation uses along the waterfront, preserving access to the Anacostia River for all. Improvements would be implemented within southern Anacostia Park to enhance the recreational amenities provided and maximize the regional and community benefit of the park. In addition, new access points, pedestrian trails, and bicycle trails would be implemented as part of Alternative 3 to overcome the existing access deficiencies that limit attendance and use of the park.

In accordance with the Urban Design goals and policies of the District Elements of the *Comprehensive Plan*, Alternative 3 would strengthen and enhance the image of Anacostia by developing a prominent site around the Anacostia Metro station and retaining the riverfront access for the benefit of all. Alternative 3 would comply with the 1910 Height of Buildings Act. No building would be taller than 130 feet. Further, the scale and height of buildings would increase towards the interior of Poplar Point to provide a transition from the surrounding neighborhood with its low-scale buildings up to the taller structures within Poplar Point that would be prominent from the west side of the River. Alternative 3 would provide cultural/civic uses at the point to encourage public access to the waterfront and make the River views more prominent.

Alternative 3 supports the *Lower Anacostia Element* goals and policies of the District Elements of the *Comprehensive Plan*, which call for mixed-use development that enhances the waterfront experience, encourages the siting of new museums and cultural attractions, provides park land with a variety of active and passive uses, promotes environmental preservation, and contributes to the overall economic revitalization of the surrounding community.

AWI Framework Plan

Under Alternative 3, the proposed mixed-use development would establish a new image of the Anacostia waterfront and remove existing barriers to public waterfront access. Alternative 3 includes plans for enhancing connectivity by connecting to planned pedestrian bridges across the River and implementing a water taxi system. Furthermore, development of Poplar Point would transform the area into a vibrant mixed-use neighborhood and accelerate the AWI efforts to improve the Anacostia waterfront. Because Alternative 2 would provide more than 70 acres of parkland and preserve 6.25 acres of existing wetlands in place, it would exceed the open space provisions of the AWI. Alternative 3 would also meet other AWI goals by daylighting Stickfoot Creek, adding boat landings to the waterfront, and providing new residential units, recreational spaces, and cultural amenities.

Center City Action Agenda

Alternative 3 would satisfy several of the goals outlined for Poplar Point as a major development site in the *Action Agenda*. Alternative 3 would bring economic development and retail services east of the River and connect to existing communities through concentrated development around the Anacostia Metro Station and new pedestrian, vehicle, and bicycle connections to the Project Area.

SNAPs

The implementation of Alternative 3 would introduce substantial new investment and physical improvements to Poplar Point and likely induce further development and revitalization of nearby southeast neighborhoods. Alternative 3 would provide new and diversified community services. This alternative would also meet the plan's environmental goals by enhancing the ecological function of the site and adjacent River.

Cumulative Impacts

Alternative 3 would meet the goals and objectives put forth in numerous federal and District plans and policies. Through the economic development of Poplar Point, implementation of Alternative 3, when considered with other ongoing or planned projects in the surrounding area, could contribute to the revitalization of Anacostia and result in a moderate positive cumulative impact to applicable land use and planning policies. In addition, proposed improvements in southern Anacostia Park and within Poplar Point would contribute a public benefit that could be enjoyed by all.

Conclusion

Development under Alternative 3 would transform an underutilized parcel into a mix of uses and thus would fulfill many of the goals and objectives of the relevant plans and policies, resulting in a long-term moderate positive impact. However, Alternative 3 would reduce the total amount of open space and result in the loss of a portion of Anacostia Park. This would be offset by a substantial investment in park amenities within southern Anacostia Park, as well as improved access to the park that could increase its prominence within the District and in the national park system. When conducting an impairment analysis as part of the environmental review of proposed alternatives, the concept of "impairment" and unacceptable impacts relates to park resources that must be left undisturbed. By definition, socio-economic resource topics are not included in this analysis.

Mitigation

Same as for Alternative 1.

4.2.3 Zoning

4.2.3.1 Methodology and Assumptions

Analysis Methods

This section examines the potential impact on zoning as a result of the proposed alternatives. If zoning changes are required as a result the alternatives, they have the potential to effect or influence other zoning districts in the surrounding area. Zoning impacts were determined by reviewing the District's recent zoning ordinances and maps, as well as land use patterns and growth trends.

Assumptions

The study area generally includes the areas in which the proposed alternatives could have a potential influence on future zoning, land use, or public policy. The area of analysis includes the project site, adjacent properties, and the surrounding communities within approximately a one mile radius.

Impact Thresholds

Thresholds were developed to identify the magnitude of potential zoning impacts resulting from the alternatives being considered. The following thresholds were used to determine the magnitude of impacts on zoning.

Negligible: The action is in compliance with local zoning ordinances.

Minor: The action is nearly in compliance with local zoning ordinances, as uses are similar.

Moderate: The action is in partial compliance with local zoning ordinances. Uses may not be compatible.

Major: The action is not in compliance with local zoning ordinances. Uses are not compatible.

Duration

Short-term impacts persist for less than five years. Long-term impacts persist beyond five years.

4.2.3.2 No Action Alternative

Direct and Indirect Impacts

The Poplar Point site is currently zoned GOV, Government. Under the No Action Alternative, development would not occur and Poplar Point would continue under its current zoning designation. As a result, land use and zoning would remain unchanged and impacts would be negligible.

Cumulative Impacts

Because land uses and zoning would remain the same, the cumulative impact on zoning would be negligible.

Conclusion

The No Action Alternative would have a negligible impact on local zoning. While the No Action Alternative would not cause an adverse impact on zoning, it would conflict with the community's long range planning goals and several local planning policies.

4.2.3.3 Alternative 1

Direct and Indirect Impacts

Implementation of Alternative 1 would result in a substantial change in the physical character of Poplar Point and the North Field. Poplar Point would change from passive recreation parkland and government facilities, to a mix of residential, office, retail, and recreational uses. Currently, Poplar Point is zoned GOV. Under Alternative 1, the land would be transferred to the District of Columbia and local zoning regulations would apply. Thus, Poplar Point would be assigned a W-2, waterfront medium density zoning designation. The North Field would change from passive recreation parkland to government facilities with the relocation of the USPP headquarters and aviation facility under Alternative 1. However, the zoning for the North Field would remain GOV. Improvements would be implemented to southern Anacostia Park. However, these would be consistent with the operation of southern Anacostia Park as a mix of active and passive recreational uses. The zoning would remain GOV. The change in zoning at Poplar Point would be a long-term minor impact and the zoning map would be updated to reflect the change in use upon completion of the land transfer.

The land transfer and redevelopment of Poplar Point could serve as a catalyst for further development on the Howard Road parcels and WMATA garage. Development would likely be consistent with current land use and zoning proposed for Poplar Point and in nearby Historic Anacostia. Because indirect changes zoning could occur under Alternatives 1, the long-term impact would be minor.

Cumulative Impacts

The land transfer and redevelopment of Poplar Point could spur additional redevelopment and/or zoning changes in the surrounding community, resulting in a long-term minor impact.

Conclusion

Alternatives 1 would have a minor long-term impact on zoning at Poplar Point and in the surrounding community. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

No mitigation is required.

4.2.3.4 Alternative 2

Direct and Indirect Impacts

As with Alternative 1, implementation of Alternative 2 would result in substantial changes in the physical character of Poplar Point and the North Field. Further, the zoning for Poplar Point would be assigned a W-2, waterfront medium density zoning designation. As with Alternative 1, Alternative 2 would be a long-term minor impact and the zoning map would be updated to reflect the change in use upon completion of the land transfer.

As with Alternative 1, the land transfer and redevelopment of Poplar Point under Alternative 2 could serve as a catalyst for further development on the Howard Road parcels and WMATA garage. Development would likely be consistent with current land use and zoning proposed for Poplar Point and in nearby Historic Anacostia. Because indirect changes zoning could occur under Alternatives 2, the long-term impact would be minor.

Cumulative Impacts

The land transfer and redevelopment of Poplar Point could spur additional redevelopment and/or zoning changes in the surrounding community, resulting in a long-term minor impact.

Conclusion

Alternatives 2 would have a minor long-term impact on zoning at Poplar Point and in the surrounding community. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

No mitigation is required.

Direct and Indirect Impacts

As with Alternative 1, implementation of Alternative 2 would result in substantial changes in the physical character of Poplar Point and the North Field. Further, the zoning for Poplar Point would be assigned a W-2, waterfront medium density zoning designation. As with Alternative 1, Alternative 2 would be a long-term minor impact and the zoning map would be updated to reflect the change in use upon completion of the land transfer.

As with Alternative 1, the land transfer and redevelopment of Poplar Point under Alternative 2 could serve as a catalyst for further development on the Howard Road parcels and WMATA garage. Development would likely be consistent with current land use and zoning proposed for Poplar Point and in nearby Historic Anacostia. Because indirect changes zoning could occur under Alternatives 2, the long-term impact would be minor.

Cumulative Impacts

The land transfer and redevelopment of Poplar Point could spur additional redevelopment and/or zoning changes in the surrounding community, resulting in a long-term minor impact.

Conclusion

Alternative 2 would have a minor long-term impact on zoning at Poplar Point and in the surrounding community. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

No mitigation is required.

4.2.3.4 Alternative 3**Direct and Indirect Impacts**

As with Alternatives 1 and 2, implementation of Alternative 3 would result in substantial changes in the physical character of Poplar Point and the North Field. Further, the zoning for Poplar Point would be assigned a W-2, waterfront medium density zoning designation. As with Alternatives 1 and 2, Alternative 3 would be a long-term minor impact and the zoning map would be updated to reflect the change in use upon completion of the land transfer.

As with Alternatives 1 and 2, the land transfer and redevelopment of Poplar Point under Alternative 3 could serve as a catalyst for further development on the Howard Road parcels and WMATA garage. Development would likely be consistent with current land use and zoning proposed for Poplar Point and in nearby Historic Anacostia. Because indirect changes zoning could occur under Alternatives 3, the long-term impact would be minor.

Cumulative Impacts

The land transfer and redevelopment of Poplar Point could spur additional redevelopment and/or zoning changes in the surrounding community, resulting in a long-term minor impact.

Conclusion

Alternative 3 would have a minor long-term impact on zoning at Poplar Point and in the surrounding community. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

No mitigation is required.

4.2.4 Community Facilities

4.2.4.1 Methodology and Assumptions

Analysis Methods

This section evaluates the potential impact to community facilities from the land transfer and redevelopment of Poplar Point. Community facilities include schools, recreational resources, medical care facilities, and public safety services such as fire and police protection. Changes to size, household composition, and age distribution are factors that were assessed to determine the impact on community facilities and/or the delivery of public services.

Assumptions

In general, the study area includes the Project Area and the surrounding neighborhoods within one mile of the Project Area. The surrounding community includes areas and neighborhoods in which the proposed land transfer and redevelopment of Poplar Point could impact the community facilities or publicly funded services available to the community.

Impact Thresholds

The criteria used to identify community impacts are defined below:

Negligible: The demand and/or change in service levels for community facilities are nonexistent or barely detectable. The effect would not hinder operations or services offered at facilities. The effect would not require additional equipment or personnel to maintain acceptable service levels.

Minor: The demand and/or change in service levels for community facilities are small, but detectable. For minor adverse impacts, the effect may temporarily hinder operations or services offered at facilities. The effect may also require a small increase in equipment or personnel levels to maintain an acceptable service level. For minor positive impacts, the effect may temporarily improve operations or services offered at facilities.

Moderate: The demand and/or change in service levels for community facilities are readily apparent. A moderate adverse impact would hinder operations or services offered at facilities over a long period of time. The effect would require a modest increase in equipment or personnel levels to maintain an acceptable service level. A moderate positive impact would improve operations or services offered at a facility over a long period of time.

Major: The demand and/or change in service levels for community facilities are substantial. A major adverse impact would dramatically hinder operations or services offered, diminishing their use or function. Extensive mitigation measures would be needed to offset the adverse impacts, though their success may not be guaranteed. A major positive impact would dramatically improve operations or services offered.

Duration

Short-term impacts would occur during construction or sporadically throughout the course of a year. Long-term impacts would persist beyond construction or would be constant for more than one year.

4.2.4.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, the land transfer and redevelopment of Poplar Point would not occur. The Project Area would continue to operate as a passive recreational space managed by NPS. There would be no change to the surrounding community. The community and public facilities would continue to operate at demand levels similar to those in place today, and no displacement, loss, or change in service levels would occur. The No Action Alternative would thus have a negligible impact on community facilities within the study area.

Cumulative Impacts

Cumulative impacts were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. As no changes to the site or surrounding community would occur under the No Action Alternative, there would be no cumulative impacts to community facilities.

Conclusion

The implementation of the No Action Alternative would result in negligible impacts to community facilities and public services. By definition, socio-economic resource topics cannot result in an impairment of park resources.

4.2.4.3 Alternative 1

Direct and Indirect Impacts

Impacts to community facilities are examined in aggregate, and based on the changes to population, household composition, and age distribution at full build-out. Alternative 1 would be estimated to generate over 7,700 total residents and 3,630 employees upon completion. Impacts to schools, open space/recreational areas, medical resources, and public safety, are addressed below.

Schools

A total of 3,500 dwelling units are proposed under Alternative 1. These residential units would include a combination of low-income and market rate town houses, mid-rise, and high-rise structures. The number of students estimated to be added under Alternative 1 was calculated based on the *Housing in the Nation's Capital Report* (Fannie Mae Foundation, 2006). This reports states, "condominiums generate only 7 public school students per 100 housing units, compared with 24 for multifamily rental housing and 40 for single-

family housing, whether owner-occupied or rental,” or 0.04 students per single family dwelling, 0.24 students per multi family unit, and 0.007 students per condominium. The ratio of school age children per housing type in *Housing in the Nation’s Capital* also corresponds with the U.S. Census Public Use Microdata Sample (PUMS) analysis. This analysis implies that the denser the housing is, the lower the number of students per dwelling. Single family units have the highest yield of school age children, though yields gradually decline as the number of units in a structure increase. Based on the best available data, 759 school age children would be added by the implementation of Alternative 1, as shown in Table 4.2.1.

Table 4.2.1 Alternative 1: School Aged Children

Type	Average # of Units	# of School Aged Children Generated
Town house (condo)	350	3
Mid-rise (multi-family)	1,400	336
High-rise (multi-family)	1,750	420
Total school age children	--	759

*School aged children in town houses are generated at a ratio of 0.007, mid rise at 0.24, and high rise at 0.24

Source: U.S. Census Bureau, 2000

Using the most current enrollment data from the District of Columbia Public Schools (DCPS), the total population for the 2006-2007 school year was slightly under 50,000 students, of which 62% were in elementary school, 15% in middle school, and 24% in high school (ULI, DCPS School Enrollment Projections and Analysis, 2009). Assuming the distribution of school aged children remains equal for estimation purposes, Alternative 1 would result in the addition of 471 elementary students, 114 middle school students, and 183 high school students within the study area.

As documented in Section 3.1.3.1, each of the schools within the study area has excess capacity. There is adequate space for 543 more elementary school students, 1,074 middle school students, and 156 high school students within the study area. Together the study area schools could accommodate the influx of new elementary and middle school students. At its existing capacity, Anacostia Senior High School could not accommodate the new students resulting from Alternative 1; however, proposed improvements to the school will increase capacity to 1,100. This increase would be sufficient to accommodate the additional students from Alternative 1. Given the complex problem of predicting school enrollment and the impact on public facilities, these numbers should be used for estimation purposes only. This projection assumes that the increase in school age children on the site would be solely absorbed by DCPS traditional public schools. It does not take charter schools into effect. In contrast, public charter schools in the District of Columbia capture up to 30% of the student population and attendance has historically been highest among students living in neighborhoods east of the Anacostia River and in Northeast, where public school performance is much lower.

Based on the analysis provided above, Alternative 1 would have a negligible impact on the school facilities in the surrounding area.

Open Space & Recreational Facilities

During the construction of Alternative 1, portions of Poplar Point would be inaccessible. Although unlikely, construction activities associated with Alternative 1 could also hinder access to portions of southern Anacostia Park. However, adverse impacts would be short-term and minor.

The site consists of over 100 acres of park land, as well as the NPS NACE headquarters and USPP headquarters and aviation facility. Alternative 1 would reduce the amount of parkland within the Project Area. This would result in a minor long-term adverse impact to recreational facilities in the area. However, this impact would be offset by the inclusion of a wide range of new passive and active recreational uses, memorials, and trails within the development within Poplar Point and facilities improvements within southern Anacostia Park.

In addition to enhancing recreational uses within the Project Area, Alternative 1 would improve access to the Project Area and the waterfront. As a result of its location, the surrounding neighborhoods are essentially isolated from the Project Area by existing transportation infrastructure and limited public access points. The construction of a pedestrian bridge at Chicago Street would strengthen the connection between the neighborhoods and the waterfront, allowing residents better access to these important assets. This alternative includes a pedestrian bridge that spans the Anacostia River. This pedestrian bridge would provide the neighborhoods west of the Anacostia River with better access to the park resources on the east side of the River. This improved access would result in a long-term moderate positive impact to recreational facilities.

Additional recreational facilities in the vicinity of the project site include the Southeast Tennis and Learning Center, THEARC, the Smithsonian Institution's Anacostia Museum and Center for African American History, and several neighborhood recreation/community centers. Under Alternative 1, the land transfer and redevelopment of Poplar Point could introduce 7,700 total residents and 3,630 employees. Because of the amount of recreational resources proposed under Alternative 1, residents and workers would have many of their recreational needs served by the site directly. Residents and employees who are inclined to use the recreational facilities in the surrounding community would generate a minor long-term adverse impact on recreational resources.

Medical Resources

The nearest community medical facility to Project Area is the Greater Southeast Community Hospital, located at 1310 Southern Avenue SE, approximately three miles away. While the onsite population would increase as a result of Alternative 1, this population increase would not represent a substantial increase in demand for this facility. Thus, long-term adverse impacts are anticipated to be minor.

Police Service

The Project Area is located within the jurisdiction of the Seventh District Metropolitan PSA. Although the District of Columbia does not track response time by PSA, Alternative 1 is not anticipated to create significant adverse impacts to service levels, personnel, or response times. Once construction is complete, a regular

evaluation of staffing and other resources would need to be conducted to determine the impact on police services.

Typically, increases in population are associated with a greater demand for police services. However, it should also be noted that the opposite effect could occur. As a result of adding full-time residents and employees within Poplar Point, Alternative 1 could enhance opportunities for natural surveillance and visibility, which subsequently discourages criminal activity. Further, the land transfer and redevelopment of Poplar Point has the potential to induce additional renovation and reinvestment efforts within the surrounding community. In some of the more neglected areas of the surrounding community, this would be likely to have a positive impact, as it increases safety and the long-term well being of the neighborhood.

Fire Protection

The new residential and employee population generated on site is likely to increase the demand for both EMS and fire protection services. To determine the impact on service, equipment, and staff resources, the Fire Department would need to evaluate area operations over time and allocate resources on an as-needed basis. All of the structures within Poplar Point are expected to comply with the latest fire standards and would be constructed with modern fire suppression materials. Therefore, the impact on fire protection is anticipated to be negligible.

Cumulative Impacts

There could be short-term minor adverse impacts and long-term minor adverse to moderate positive impacts to community facilities as a result of the implementation of Alternative 1. These impacts, when considered together with the planned improvements along the Anacostia Waterfront, could contribute to a moderate long-term positive impact to community facilities.

Conclusion

There could be minor short-term adverse impacts and minor long-term adverse to moderate positive impacts to community facilities as a result of the implementation of Alternative 1. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

- During construction, ensure access is maintained to Anacostia Park northeast of the project site;
- Once construction is complete, monitor demand for fire and emergency services to ensure that additional staffing is not required; and
- If necessary, supplement the city's provision of police services with a private security force.
- Consider a developer contribution if new school construction is necessary to accommodate additional high school students resulting from the redevelopment of Poplar Point.

4.2.4.4 Alternative 2

Direct and Indirect Impacts

Impacts to community facilities are examined in aggregate, and based on the changes to population, household composition, and age distribution at the full completion. Alternative 2 would provide 4,250 housing units and is estimated to generate over 9,350 total residents and 2,100 employees upon completion. Impacts to schools, open space/recreational areas, medical resources, and public safety, are addressed below.

Schools

Under Alternative 2, a total of 4,250 dwelling units are expected to be developed. These residential units would include a combination of low-income and market rate town houses, mid-rise, and high-rise structures. The number of students estimated to be added in Alternative 2 was calculated based on the *Housing in the Nation's Capital Report* (Fannie Mae Foundation, 2006). This reports states, "condominiums generate only 7 public school students per 100 housing units, compared with 24 for multifamily rental housing and 40 for single-family housing, whether owner-occupied or rental," or 0.04 students per single family dwelling, 0.24 students per multi family unit, and .007 students per condominium. The ratio of school age children per housing type in *Housing in the Nation's Capital* also corresponds with the U.S. Census PUMS analysis. This analysis implies that the denser the housing, the lower the number of students per dwelling. Single family units have the highest yield of school age children, though yields gradually decline as the number of units in a structure increases. Based on the best available data, 1,020 school age children would be generated by Alternative 2, as shown in Table 4.2.2.

Table 4.2.2 Alternative 2: School Aged Children

Type	Average # of Units	# of School Aged Children Generated
Town houses (condo)	0	0
Mid-rise (multifamily)	2,400	576
High-rise (multifamily)	1,850	444
Total school age children	--	1,020

*School aged children in townhomes are generated at a ratio of 0.007, mid rise at 0.24, and high rise at 0.24

Source: U.S. Census Bureau, 2000

Using the most current enrollment data from DCPS, the total population for the 2006-2007 school year was a little under 50,000 students, of which 62% were in elementary school, 15% in middle school, and 24% in high school (ULI, DCPS School Enrollment Projections and Analysis, 2009). Assuming the distribution of student-aged children remains equal for estimation purposes, Alternative 2 would result in the addition of 633 elementary students, 153 middle school students, and 245 high school students within the study area.

As documented in Section 3.1.3.1, each of the schools within the study area has excess capacity. There is adequate space for 543 more elementary school students, 1,074 middle school students, and 156 high school

students within the study area. Thus, while there is adequate capacity within the study area schools to accommodate the elementary and middle school students, there is not sufficient space to accommodate the increase in the number of high school students (there is a deficiency of 89 spaces). This projection assumes that the increase in school age children on the site would be solely absorbed by DCPS traditional public schools. It does not take charter schools into consideration. Public charter schools in the District of Columbia capture up to 30% of the student population and attendance has historically been highest among students living in neighborhoods east of the Anacostia River and in Northeast, where public school performance is much lower. Long-term impacts to schools are anticipated to be minor and adverse.

Open Space & Recreational Facilities

During the construction of Alternative 2, portions of Poplar Point would be inaccessible. Construction activities associated with Alternative 2 could also hinder access to portions of southern Anacostia Park. However, adverse impacts would be short-term and minor.

Alternative 2 would reduce the amount of parkland within the Project Area. This would result in a minor long-term adverse impact to recreational facilities in the area. However, this impact would be minimized by the inclusion of a wide range of new passive and active recreational uses, memorials, and trails within the Poplar Point and facilities improvements within southern Anacostia Park.

In addition to enhancing recreational uses in the Project Area, Alternative 2 would improve access to the Project Area and to the waterfront. As a result of its location, the surrounding neighborhoods are isolated from the Project Area by existing transportation infrastructure and limited access points. The construction of a pedestrian bridge at W Street would strengthen the connection between the neighborhoods and the waterfront, allowing residents better access to this important asset. This improved access would result in a long-term moderate positive impact to recreational facilities.

Additional recreational facilities in the vicinity of the Project Area include the Southeast Tennis and Learning Center, THEARC, the Smithsonian Institution's Anacostia Museum and Center for African American History, and several neighborhood recreation/community centers. The land transfer and redevelopment of Poplar Point is expected to introduce 9,350 total residents and 2,100 employees. Because of the number of recreational resources within the Project Area, residents and workers are anticipated to have many of their recreational needs served by the new development directly. Residents and employees who are inclined to use the recreational facilities in the surrounding community would generate a minor long-term adverse impact on recreational facilities.

Medical Resources

The nearest community medical facility to Project Area is the Greater Southeast Community Hospital, located at 1310 Southern Avenue SE, approximately three miles away. While the population within Poplar Point would increase as a result of this alternative, there should not be a substantial increase in demand that would impact service at the facility.

Police Service

The Project Area is located within the jurisdiction of the Seventh District Metropolitan PSA. Although the District of Columbia does not track response time by PSA, Alternative 2 is not anticipated to create significant adverse impacts to service levels, personnel, response times, or other police resources. Typically, the demand for additional police services cannot be determined until the need arises. If the development under Alternative 2 is constructed, a regular evaluation of staffing and other resources would need to be conducted to determine the impact on police services.

Typically, increases in population are associated with a greater demand for police services. However, the opposite effect could occur. As a result of adding full-time residents and employees within Poplar Point, Alternative 2 would enhance opportunities for natural surveillance and visibility, which could discourage criminal activity. In addition, the land transfer and redevelopment of Poplar Point has the potential to induce additional renovation and reinvestment efforts within the surrounding community. In some of the more neglected areas of the surrounding community, this is likely to have a positive influence as it would increase safety and the long-term well being of the neighborhood.

Fire Protection

The new residential and employee population generated within Poplar Point is likely to increase the demand for both EMS and fire protection services. To determine the impact on service, equipment, and staff resources, the Fire Department would need to evaluate area operations over time and allocate resources on an as-needed basis. All of the structures within Poplar Point would comply with the latest fire standards and would be constructed with modern fire suppression materials. Therefore, the impact on fire protection is anticipated to be negligible.

Cumulative Impacts

There could be short-term minor adverse impacts and long-term minor adverse to moderate positive impacts to community facilities as a result of the implementation of Alternative 2. These impacts, when considered together with the planned improvements along the Anacostia Waterfront, could contribute to a moderate long-term positive impact to community facilities.

Conclusion

There could be short-term minor adverse impacts and long-term minor adverse to moderate positive impacts to community facilities as a result of the implementation of Alternative 2. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

Same as for Alternative 1.

4.2.4.5 Alternative 3

Short and Long-Term Impacts

Impacts to community facilities are examined in aggregate, and based on the changes to population, household composition, and age distribution at the full completion. Alternative 3 provides 4,300 housing units and is estimated to generate over 9,460 total residents and 2,110 employees upon completion. Impacts to schools, open space/recreational areas, medical resources, and public safety, are addressed below.

Schools

In Alternative 3, a total of 4,300 dwelling units are expected to be developed. These residential units would include a combination of low-income and market rate town houses, mid-rise, and high-rise structures. The number of students estimated to be generated in Alternative 3 is calculated based on the *Housing in the Nation’s Capital Report* (Fannie Mae Foundation, 2006). This reports states, “condominiums generate only 7public school students per 100 housing units, compared with 24 for multifamily rental housing and 40 for single-family housing, whether owner-occupied or rental,” or 0.04 students per single family dwelling, 0.24 students per multi family unit, and 0.007 students per condominium. The ratio of school age children per housing type in *Housing in the Nation’s Capital* also corresponds with the U.S. Census PUMS analysis. This analysis implies that the denser the housing, the lower the number of students per dwelling. Single family units have the highest yield of school age children, though yields gradually decline as the number of units in a structure increase. Based on the best available data, 1,070 school age children would be added under Alternative 3, as shown in Table 4.2.3.

Table 4.2.3 Alternative 3: School Aged Children

Type	Average # of Units	# of School Aged Children Generated
Town house (condo)	150	2
Mid-rise (multifamily)	2,100	576
High-rise (multifamily)	2,050	492
Total school age children	--	1,070

*School aged children in townhomes are generated at a ratio of .007, mid rise at .24, and high rise at .24

Source: U.S. Census Bureau, 2000

Using the most current enrollment data from DCPS, the total population for the 2006-2007 school year was slightly under 50,000 students, of which 62% were in elementary school, 15% in middle school, and 24% in high school (ULI, DCPS School Enrollment Projections and Analysis, 2009). Assuming the distribution of student aged children remains equal for estimation purposes, Alternative 3 would result in the addition of 664 elementary students, 161 middle school students and 257 high school students within the study area.

As documented in Section 3.1.3.1, each of the schools within the study area has excess capacity. There is adequate space for 543 more elementary school students, 1,074 middle school students, and 156 high school

students within the study area. While there is adequate capacity within the study area schools to accommodate the increase in the number of middle school students, there is not sufficient space to accommodate the increase in the number of elementary and high school students (there is a deficiency of 121 elementary school spaces and 101 high school spaces). It should be noted that this projection assumes that the increase in school age children on the site would be solely absorbed by DCPS traditional public schools. It does not take charter schools into consideration. Public charter schools in the District of Columbia capture up to 30% of the student population and attendance has historically been highest among students living in neighborhoods east of the Anacostia River and in Northeast, where public school performance is much lower. Long-term impacts to schools are anticipated to be minor and adverse.

Open Space & Recreational Facilities

During the construction of Alternative 3, portions of Poplar Point would be inaccessible. Construction activities associated with Alternative 3 could also hinder access to portions of southern Anacostia Park. However, adverse impacts would be short-term and minor.

Alternative 3 would reduce the amount of parkland within Poplar Point and the North Field. This reduction would result in a minor long-term adverse impact to recreational facilities in the area. However, this impact would be minimized by the inclusion of a wide range of new passive and active recreational uses, memorials, and walkways within Poplar Point and additional facilities improvements within southern Anacostia Park.

In addition to enhancing recreational uses in the Project Area, Alternative 3 would improve access to the parkland and to the waterfront. As a result of the Interstate location, the surrounding neighborhoods are isolated from the Project Area. The construction of pedestrian bridges at W and Chicago Streets would strengthen the connection between the neighborhoods and the waterfront, allowing residents to have better access to this important asset. This improved access would result in a long-term moderate positive impact to recreational facilities.

Additional recreational facilities in the vicinity of the project site include the Southeast Tennis and Learning Center, THEARC, the Smithsonian Institution's Anacostia Museum and Center for African American History, and several neighborhood recreation/community centers. The land transfer and redevelopment of Poplar Point is expected to add 9,350 total residents and 2,110 employees to the area. Because of the large number of resources in the Project Area, residents and workers are anticipated to have many of their recreational needs served by the development directly. Residents and employees who are inclined to use the recreational facilities in the surrounding community would generate a minor long-term adverse impact on recreational resources.

Medical Resources

The nearest community medical facility to the Project Area is the Greater Southeast Community Hospital, located at 1310 Southern Avenue SE, approximately three miles away. While the population within Poplar Point would increase as a result of this alternative, this is not anticipated to affect levels of service at this facility.

Police Service

The Project Area is located within the jurisdiction of the Seventh District Metropolitan PSA. Although the District of Columbia does not track response time by PSA, Alternative 3 is not anticipated to create significant adverse impacts to service levels, personnel, response times, or other police resources. Typically, the demand for additional police services cannot be determined until the need arises. If the development is constructed, a regular evaluation of staffing and other resources would need to be conducted to evaluate the impact on police services.

Typically, increases in population are associated with a greater demand for police services. However, the opposite effect could occur. As a result of adding full-time residents and employees within Poplar Point, Alternative 3 would enhance opportunities for natural surveillance and visibility, which subsequently discourages criminal activity. The land transfer and redevelopment of Poplar Point has the potential to induce additional renovation and reinvestment efforts within the surrounding community. In some of the more neglected areas of the surrounding community, this is likely to have a positive influence, as it increases safety and the long term well being of the neighborhood.

Fire Protection

The new residential and employee population on site is likely to increase the demand for both EMS and fire protection services. To determine the impact on service, equipment, and staff resources, the Fire Department would need to evaluate area operations over time and allocate resources on an as-needed basis. All of the buildings would comply with the latest fire standards and would be constructed with modern fire suppression materials. Therefore, the impact on fire protection is anticipated to minor adverse.

Cumulative Impacts

There could be short-term minor adverse impacts and long-term minor adverse to moderate positive impacts to community facilities as a result of the implementation of Alternative 3. These impacts, when considered together with the planned improvements along the Anacostia Waterfront, could contribute to a moderate long-term positive impact to community facilities.

Conclusion

As documented above, there could be short-term minor adverse impacts and long-term minor adverse to moderate positive impacts to community facilities as a result of the implementation of Alternative 3. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

Same as for Alternative 1.

4.2.5 Demographics and Housing

Demographic and housing impacts are determined by changes to the residential population and employment patterns near the Project Area and in the larger study area. Changes that result from construction would be short-term in nature. Changes that ensue after build-out and continued operation could either directly or indirectly create a new set of conditions in the area, such as residential migration, changes in housing quality or value, and induced redevelopment of the surrounding areas. These changes would be considered long-term impacts.

4.2.5.1 Methodology and Assumptions

Analysis Methods

This analysis is primarily based on estimates of the size of each component of development within the three alternatives, as presented in Table 4.2.4. The size range of the development components was determined by the project planners, and the average number of units or square feet was calculated based on this range; this number (the average value) is used for the remainder of the calculations in this analysis.

Table 4.2.4 Estimated Development Program of the 3 Alternatives

Development Program	Alternative 1			Alternative 2			Alternative 3		
	Range			Range			Range		
	Min	Max	Average	Min	Max	Average	Min	Max	Average
Town house (units)	300	400	350	0	0	0	130	170	150
Mid-rise (units)	1,200	1,600	1,400	2,300	2,500	2,400	1,800	2,400	2,100
High-rise (units)	1,500	2,000	1,750	1,700	2,000	1,850	1,800	2,300	2,050
Total Residential (units)	3,000	4,000	3,500	4,050	4,500	4,250	3,670	4,870	4,300
Liner (sq ft)	160,000	170,000	165,000	175,000	209,000	192,000	125,000	175,000	150,000
Medium Format (sq ft)	44,000	46,000	45,000	150,000	170,000	160,000	0	0	0
Large Format (sq ft)	0	0	0	280,000	316,000	298,000	95,000	125,000	110,000
Office (sq ft)	1,250,000	1,550,000	1,400,000	550,000	590,000	570,000	700,000	760,000	730,000
Other (sq ft)	475,000	525,000	500,000	525,000	575,000	550,000	430,000	490,000	460,000
Total Commercial (sq ft)	1,929,000	2,291,000	2,110,000	1,680,000	1,860,000	1,770,000	1,350,000	1,550,000	1,450,000

In order to estimate the number of full-time residents present on the project site at build-out, an estimate of the average household size (number of persons per units) in Washington, DC was gathered from the 2005-2007 American Community Survey (ACS). This value (2.2 persons per unit) was then multiplied by the average number of units to estimate the number of residents living in Poplar Point for each alternative (see Table 4.2.5). Though it is unlikely each residential product type would have the same average household size (high-rise condominiums tend to have smaller households than town houses), data on the typical household size by product type was not available for this study.

Table 4.2.5 Estimated Number of Residents in Each Alternative at Build-Out

Product Type	Alternative 1	Alternative 2	Alternative 3
Townhome	770	0	330
Mid-rise	3,080	5,280	4,620
High-rise	3,850	4,070	4,510
<i>Total Residents</i>	<i>7,700</i>	<i>9,350</i>	<i>9,460</i>

Source: U.S. Census Bureau, 2000

Employment density estimates from the Energy Information Administration of the U.S. Department of Energy (2003), along with the average square foot estimates, were used to determine the number of full-time employees that would work within Poplar Point at build-out. The employment density estimates vary by principal building activity, as shown in Table 4.2.6.

Table 4.2.6 Estimated Number of Employees in Each Alternative at Full Build-Out

Principal Activity	Employment Density	Alternative 1	Alternative 2	Alternative 3
Retail	1250 sq ft/emp	170	520	210
Office	435 sq ft / emp	3,220	1,310	1,680
Other (cultural center, hotel)	2,075 sq ft/emp	240	270	220
<i>Total Employees</i>		<i>3,630</i>	<i>2,100</i>	<i>2,110</i>

Source: U.S. Department of Energy, 2003

Assumptions

For this impact topic, the area of analysis, or study area, includes Ward 8 and the neighborhoods to the west directly across the River from Poplar Point.

Impact Thresholds

Thresholds were established to adequately define the magnitude of the impact on demographics and housing. These thresholds will describe the impacts of the proposed action relative to the site's existing conditions. Note that positive demographic and housing impacts result in improvements to the environment while adverse impacts would diminish the condition of the environment.

Negligible: Effects would be below detectable levels or detectable only through indirect means and with no discernible changes to the population or the housing conditions of the environment.

Minor: Effects would be detectable but localized in geographic extent and not expected to change the population or housing conditions of the environment.

Moderate: Effects would be readily detectable across a broad geographic area and could appreciably change the population and housing conditions of the environment.

Major: Effects would be readily apparent, extend across the entire community or region, and are likely to noticeably change the population and housing conditions of the environment.

Duration

Short-term impacts would occur during the construction period. Long-term impacts would occur during operation of the project.

4.2.5.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, the Project Area would continue to be the home of the USPP Aviation Section Facility, the USPP Anacostia Operations Facility, the NPS NACE Headquarters, and the southern extent of Anacostia Park. The Project Area's predominant land use would also continue to be parkland. Therefore, there would be no change in demographics and housing in the Project Area or the surrounding community. No one currently lives within the Project Area.

Cumulative Impacts

Under the No Action Alternative, there would be negligible impacts to demographics and housing and thus no cumulative impacts to population and housing.

Conclusion

As no changes to demographics or housing would occur due to the No Action Alternative, this alternative would have a negligible impact on population and housing. By definition, socio-economic resource topics cannot result in an impairment of park resources.

4.2.5.3 Alternative 1

Direct and Indirect Impacts

At build-out, approximately 7,700 people would reside in 3,500 housing units within Poplar Point, and the retail and office components of Poplar Point would result in the addition of over 3,600 permanent jobs. The retail shops, cultural center, and recreation spaces would also attract additional visitors to the area, particularly during the weekends.

As no one currently resides within the Project Area, no direct impacts to housing are anticipated as part of Alternative 1 associated with the land transfer and redevelopment of Poplar Point. However, the daytime employee population of the Project Area would be affected by this alternative. The employees of the USPP Aviation Section Facility, USPP Anacostia Operations Facility, and NPS-NACE Headquarters would be relocated to the North Field; this relocation could cause a minor, short-term disruption of the facility operations. Also in the short-term, construction activities on-site would have a minor, indirect impact on the day-time population of the communities surrounding the Project Area; this impact would be both positive and

adverse, as a larger daytime population would affect street congestion but also could improve safety and would provide a larger customer base for local businesses.

The addition of 3,500 housing units (7,800 residents) and over 3,600 employees to Poplar Point would have an indirect impact on the demographics and housing of the neighborhoods of Ward 8 surrounding the project site. A portion of the new employees may choose to move to the area in order to be closer to work. There may also be changes to the existing shops in the neighborhood, as well as an influx of more retail and businesses, to serve the new employees and residents. Both activities could result in an increase in the demand for housing in the area and an increase in the property value of existing housing.

New market rate residential construction usually demands a higher price than older housing comparable in size and amenities. Therefore, though the specific sale or rental prices of the units are unknown at this time, the low incomes (under \$23,500 in 1999 according to the 2000 U.S. Census) of the households in the study area indicate that the permanent residents of Poplar Point would have higher incomes than the majority of the study area's existing residents. The higher incomes, and therefore greater purchasing power, of the new residents would likely induce more retail businesses into the area. This trend could increase demand for existing housing, thus escalating property values. However, as the Southeast DC market is currently underserved by retail and services, the increase in businesses driven by the new population should also improve the quality of life of existing residents.

The additional residents and employees within Poplar Point would also have an indirect impact on the western neighborhoods directly across the River. However, due to the presence of the River, the impact should be similar yet less significant than the impact on Ward 8, particularly in the short-term. In the long-term, Alternative 1 would create direct access to the waterfront, with the aim of drawing residents, employees, and visitors across the river in both directions.

Cumulative Impacts

There are several planned redevelopment and developments projects currently in the pipeline or under construction in the study area. These new investments, such as the redevelopment of Barry Farm/Park Chester/Wade Road and the proposed development at St. Elizabeths, in conjunction with the development of Alternative 1, would have a moderate cumulative impact on population and housing in the long-term. These impacts would be both adverse and positive, further improving the quality of life for nearby residents while placing increasing pressure on housing demand and likely escalating property values.

Conclusion

Alternative 1 would have a minor, short-term impact and a moderate, long-term impact on demographics and housing in Ward 8 and a minor, long-term impact on the neighborhoods across the River. These impacts would be both adverse and positive. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

- An emphasis should be placed on increasing the supply of affordable housing in the area, as has already begun through the development of Henson Ridge HOPE VI in 2005 and is proposed for St. Elizabeths East.
- The City should consider creating a property tax endowment to assist low income homeowners with increases in property taxes or capping property tax increases for current residents; the inability to pay increasing property taxes is one of the primary drivers for economic displacement among homeowners.
- The City should consider a commercial stabilization planning process involving current Ward 8 residents and businesses. Through this process, participants create a shared vision of the commercial district, determine the public and private resources available to realize this vision, and develop a plan of active community-oriented management to ensure new investment benefits the current community. This would also help achieve the project's goal to complement, and not compete with, the existing amenities in the Anacostia community.

4.2.5.4 Alternative 2

Direct and Indirect Impacts

At build-out, almost 9,400 people would reside in 4,300 housing units within Poplar Point, and the retail and office components of Poplar Point would result in the addition of approximately 2,100 permanent jobs. As Alternative 2 includes a large, regional format retail component in close proximity to a Metro station, as well as a cultural center and recreation opportunities, it is anticipated that visitors from across the region would be drawn to the Project Area, significantly increasing the daytime population on-site, particularly during the weekends.

No direct impacts to housing are anticipated under Alternative 2 as there are currently no residents within the Project Area. However, the daytime, employee population the Project Area would be affected by Alternative 2. The employees of USPP Aviation Section Facility, USPP Anacostia Operations Facility, and NPS-NACE Headquarters would be relocated to the North Field. This relocation could cause a minor, short-term disruption of the operations of the facilities. Also in the short-term, construction activities within the Project Area would have a minor, indirect impact on the day-time population of the communities surrounding the Project Area. This impact would be both positive and adverse, as a larger daytime population would affect street congestion, but also could improve safety and would provide a larger customer base for local businesses.

The addition of approximately 4,300 housing units (9,400 residents) and over 2,100 employees to Poplar Point would have an indirect impact on the demographics and housing of the neighborhoods of Ward 8 surrounding the Project Area. A very small portion of the new employees may choose to move to the area in order to be closer to work. As a large portion of the jobs produced through this alternative are low wage retail jobs, it is more likely the new employees would come from the existing nearby neighborhoods. There may also be changes to the existing shops in the surrounding neighborhoods, as well as an influx of more

retail and businesses, to serve the new employees and residents. Both activities could result in an increase in the demand for housing in the area and an increase in property values of existing housing.

Though the specific sale or rental prices of the housing units has yet to be determined, the low incomes (under \$23,500 in 1999 according to the 2000 U.S. Census) of the households in the study area indicate that the permanent residents of Poplar Point would have higher incomes than the majority of existing residents in order to afford to rent or buy a new, market rate unit. The greater purchasing power of the new residents could induce more retail businesses in the area. In addition, as this alternative's significant retail component is intended to be a regional draw, if successful, the greater purchasing power of the larger region could further attract businesses to the Ward 8 neighborhoods near the Metro station and Poplar Point. This could increase demand for existing housing, escalating property values. However, as the Southeast Washington, DC market is currently under-served by retail and services, the increase in businesses driven by the new population should also improve the quality of life for existing residents.

The additional residents and employees of Poplar Point would also have an indirect impact on the western neighborhoods directly across the River. However, due to the division created by the river and lack of strong connection across the River, the impact would be significantly less than the impact on Ward 8.

Cumulative Impacts

New investments in the study area, such as the redevelopment of Barry Farm/Park Chester/Wade Road and the proposed development at St. Elizabeths, combined with the development of Alternative 2, would have a moderate cumulative impact on population and housing in the long-term. These impacts would be both adverse and positive, furthering improving quality of life of study area residents while placing increasing pressure on housing demand and likely escalating property values.

Conclusion

Alternative 2 would have a minor, short-term impact and a moderate, long-term impact on demographics and housing in Ward 8, as well as a minor, long-term impact on the neighborhoods across the River. These impacts would be both positive and adverse. The new retail and office development would provide additional services and employment opportunities for existing residents. However, the large number of higher income residents (adding almost 40% more residents to the study area, including the communities west of the River) and the regional retail proposed for Alternative 2 could attract shops and businesses that do not serve the existing residents. It is also possible that the large amount of new retail proposed within Poplar Point could draw existing residents and visiting patrons away from existing shops. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

Same as for Alternative 1.

4.2.5.5 Alternative 3

Direct and Indirect Impacts

At buildout, over 9,400 people would reside in 4,300 housing units within Poplar Point, and the retail and office components of the project would result in the addition of approximately 2,100 permanent jobs within Poplar Point. The retail shops, cultural center, and recreational opportunities would also attract additional visitors to the area, particularly during the weekends.

As no one currently lives in Poplar Point, no direct impacts to housing are anticipated under Alternative 3. However, the daytime employee population of the Project Area would be affected. The employees of the USPP Aviation Section Facility, USPP Anacostia Operations Facility, and NPS-NACE Headquarters would be relocated to the North Field. This relocation could cause a minor, short-term disruption of the operations of the facilities. Also in the short-term, construction activities within the Project Area would have a minor, indirect impact on the day-time population of the communities surrounding the Project Area. This impact would be both positive and adverse, as a larger daytime population could affect street congestion but also could improve safety and would provide a larger customer base for local businesses.

The addition of 4,300 housing units (9,400 residents) and over 2,100 employees to Poplar Point would have an indirect impact on the demographics and housing of the neighborhoods of Ward 8 surrounding the Project Area. Though it is assumed that the majority of new employees already live in the Washington, DC metropolitan area, a small portion of employees may choose to move to the area in order to be closer to work. There may also be changes to the existing shops and an influx of new shops to the neighborhood to serve the new employees and residents. Both activities could result in an increase in the demand for housing in the area and an increase in property values of existing housing. In order to afford new market rate housing, the new residents of Poplar Point would likely have higher incomes than the current residents of Ward 8, who had incomes under \$23,500 in 1999 according to the 2000 U.S. Census. The higher incomes, and therefore greater purchasing power, of the new residents would likely induce more retail businesses into the area. This could increase demand for existing housing, escalating property values. However, as the Southeast DC market is currently under-served by retail and services, the increase in businesses driven by the new population should also improve the quality of life of the existing residents.

The additional residents and employees of Poplar Point would also have an indirect impact on the western neighborhoods directly across the River. However, due to the presence of the River, the impact would be less significant than the impact on Ward 8. While Alternative 3 extends the development to the waterfront, creating a visual connection, it does not physically extend a pedestrian bridge across the River to improve access.

Cumulative Impacts

The combined effect of new investments in the study area and the development of Alternative 3 would have a moderate, cumulative impact on population and housing in the long-term. These impacts would be both

adverse and positive, furthering improving quality of life for study area residents while placing increasing pressure on housing demand and further escalating property values.

Conclusion

Action Alternative 3 would have a minor, short-term impact and a moderate, long-term impact on demographics and housing in Ward 8 and a minor, long-term impact on the neighborhoods across the River. These impacts would be both adverse and positive. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

Same as for Alternative 1.

DRAFT

4.2.6 Environmental Justice

4.2.6.1 Methodology and Assumptions

Analysis Methods

The goal of an environmental justice impact analysis is to:

1. Identify potential disproportionately high and adverse human health or environmental effects on minority or low-income populations, and
2. Identify alternatives that may mitigate these impacts.

Environmental justice impacts are determined by changes to the health and environmental quality of the communities within the study area. The changes may be those that result from construction (short-term) or may be caused after build-out and full operation of the Project Area (long-term). These long-term changes might include patterns of land use, changes in population density or community cohesion, increased urbanization, effects to natural systems, changes in travel patterns, or accessibility and safety issues.

Certain cultural, social, occupational, historical, and economic characteristics of an affected community may amplify the environmental effects of an action, as populations vary in their sensitivity to and resiliency in adapting to the effects of a proposed action. An environmental justice analysis must measure the levels of intensity for identified impacts, including:

- The degree to which the proposed action may affect the safety and health of such communities, and whether the effects are disproportional with those on the rest of the population;
- The degree to which the action may affect unique environmental characteristics valued by the affected communities, such as recreation areas;
- The extent to which the action could affect historic properties or other cultural resources important to the affected communities;
- The potential for impacts to be controversial in the eyes of the affected community;
- The potential for uncertain or unknown risks to the community;
- The degree to which the action may set precedents for carrying out other similar actions in the potentially affected community, or in other similar communities;
- The contribution the proposed action could make to cumulative impacts on the affected community, including exposure to one or more chemical, biological, physical, or radiological agents across air, water, soil, or other environmental media over time; and
- Whether the proposed action could result in violation of a Federal, State, Indian Tribal, or local law designed to protect the potentially affected communities from disproportionate adverse environmental impacts.

In addition to measures of intensity, the distribution of environmental and health effects within the affected community is important. Any affected communities that would disproportionately bear the burden of an action are considered to experience high and adverse impacts related to the action.

Assumptions

For this impact topic, the area of analysis, or study area, includes Ward 8 and the neighborhoods to the west directly across the River from the Project Area.

Impact Thresholds

To adequately define the magnitude of the environmental justice impact, the following thresholds were established. These thresholds describe the impacts of the proposed action relative to the site's existing conditions. Positive impacts result in improvements to established health and safety conditions of the environment while adverse impacts would diminish the condition of the environment.

Negligible: Effects would be below detectable levels or detectable only through indirect means and with no discernible effect on the health and safety conditions of the environment.

Minor: Effects would be detectable but localized in geographic extent or size of population affected and not expected to alter the health and safety conditions of the environment.

Moderate: Effects would be readily detectable across a broad geographic area or segment of the community and could have an appreciable effect of the health and safety conditions of the environment.

Major: Effects would be readily apparent, affect a substantial segment of the population, extend across the entire community or region, and are likely to have a noticeable effect on the health and safety conditions of the environment.

Duration

Short-term impacts would occur during the construction period. Long-term impacts would occur during operation.

4.2.6.2 No Action Alternative

Direct and Indirect Impacts

As discussed in Chapter 3, all tracts within the study area were determined to qualify as potential Environmental Justice Communities of Concern using U.S. Census data. Under the No Action Alternative, the existing uses would remain on-site, and thus, there would be negligible impacts to Environmental Justice Communities.

Cumulative Impacts

There would be negligible direct and indirect impacts to Environmental Justice communities as a result of the No Action Alternative. There would be no cumulative impacts.

Conclusion

This alternative would not have disproportional ecological or health impacts on low-income and minority residents. However, the study area would not experience the positive impacts of increased investment at Poplar Point. Positive impacts might include increased employment opportunities and retail services. By definition, socio-economic resource topics cannot result in an impairment of park resources.

4.2.6.3 Alternative 1

Direct and Indirect Impacts

Alternative 1 would likely have a minor to moderate, positive impact on the potentially affected communities by increasing job opportunities in both the short- and long-term, and adding additional retail opportunities in the long-term. During construction, workers on-site might also patronize the existing businesses in the surrounding community, which would have a minor, positive, indirect impact on the area in the short-term. However, also in the short-term, construction activities could increase noise and air pollution and increase road congestion, potentially adversely affecting the neighboring residents and businesses. These impacts would not be disproportionately high or adverse. The surrounding communities would benefit from the remediation of contaminated portions of Poplar Point. Finally, Alternative 1 would provide a range of both passive and active recreational uses on approximately 70 acres of open space and implement facilities improvements within southern Anacostia Park; thus, the land transfer and redevelopment of Poplar Point could improve recreation opportunities for the surrounding community in the long-term.

Cumulative Impacts

Several planned redevelopment and development projects are currently in the pipeline or under construction in the vicinity of the Project Area, including the redevelopment of Barry Farm/Park Chester/Wade Road, and the proposed development at St. Elizabeths. The activity of these projects combined Alternative 1 would likely have a long-term, moderate positive impact on the economic conditions of the study area. In the short-term, the cumulative construction activities may increase noise and air pollution and increase road congestion. The timing of construction should be coordinated to minimize these impacts.

Conclusion

Alternative 1 would have a minor to moderate, positive impact on the potentially affected communities in both the short- and long-term. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

- Construction impacts should be mitigated through the coordination of construction routes and activities with the surrounding community.

4.2.6.4 Alternative 2

Direct and Indirect Impacts

Alternative 2 would likely have a minor to moderate, positive impact on the potentially affected communities by increasing job opportunities in both the short- and long-term, and adding additional retail opportunities in the long-term. During construction, workers on-site might also patronize the existing businesses in the surrounding community, which would have a minor, positive, indirect impact on the area in the short-term. However, also in the short-term, construction activities could increase noise and air pollution and increase road congestion, potentially adversely affecting the neighboring residents and businesses. These impacts would not be disproportionately high or adverse. The surrounding communities would benefit from the remediation of contaminated portions of Poplar Point. Finally, Alternative 2 would provide a range of both passive and active recreational uses on approximately 70 acres of open space and implement facilities improvements within southern Anacostia Park; thus, the land transfer and redevelopment of Poplar Point could improve recreation opportunities for the surrounding community in the long-term.

Cumulative Impacts

Several planned redevelopment and development projects are currently in the pipeline or under construction in the vicinity of the Project Area, including the redevelopment of Barry Farm/Park Chester/Wade Road, and the proposed development at St. Elizabeths. The activity of these projects combined with Alternative 2 would likely have a long-term, moderate positive impact on the economic conditions of the study area. In the short-term, the cumulative construction activities may increase noise and air pollution and increase road congestion. The timing of construction should be coordinated to minimize these impacts.

Conclusion

Alternative 2 would have a minor to moderate, positive impact on the potentially affected communities in both the short- and long-term. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

Same as for Alternative 1.

4.2.6.5 Alternative 3

Direct and Indirect Impacts

Alternative 3 would likely have a minor to moderate, positive impact on the potentially affected communities by increasing job opportunities in both the short- and long-term, and adding additional retail opportunities in the long-term. During construction, workers on-site might also patronize the existing businesses in the surrounding community, which would have a minor, positive, indirect impact on the area in the short-term. However, also in the short-term, construction activities could increase noise and air pollution and increase

road congestion, potentially adversely affecting the neighboring residents and businesses. These impacts would not be disproportionately high or adverse. The surrounding communities would benefit from the remediation of contaminated portions of Poplar Point. Finally, Alternative 3 would provide a range of both passive and active recreational uses on approximately 70 acres of open space and implement facilities improvements within southern Anacostia Park; thus, the land transfer and redevelopment of Poplar Point could improve recreation opportunities for the surrounding community in the long-term.

Cumulative Impacts

Several planned redevelopment and development projects are currently in the pipeline or under construction in the vicinity of the Project Area, including the redevelopment of Barry Farm/Park Chester/Wade Road, and the proposed development at St. Elizabeths. The activity of these projects combined with Alternative 3 would likely have a long-term, moderate positive impact on the economic conditions of the study area. In the short-term, the cumulative construction activities may increase noise and air pollution and increase road congestion. The timing of construction should be coordinated to minimize these impacts.

Conclusion

Alternative 3 would have a minor to moderate, positive impact on the potentially affected communities in both the short- and long-term. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

Same as for Alternative 1.

4.2.7 Economic/Fiscal Resources

4.2.7.1 Methodology and Assumptions

Analysis Methods

The impacts on economic and fiscal resources are determined primarily by additional spending in the economy as a result of construction and by money collected by various municipalities through taxes, including real property taxes, sales and use taxes, and individual income taxes. This analysis examines changes within the actual development site (direct impacts), changes that occur in response to the project in the areas neighboring the Project Area (indirect impacts), and changes caused by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions (cumulative impacts).

Construction Spending and Short-Term Job Impacts

The method of analysis for this section requires a specific analysis using the Bureau of Economic Analysis' Regional Input-Output Modeling System (RIMS II). RIMS II provides regional input-output (I-O) multipliers, which account for inter-industry relationships within regions, in order to estimate how much a one-time increase in economic activity (i.e. project construction) would be supplied by industries located in the Washington–Arlington–Alexandria, DC–VA–MD–WV Metropolitan Statistical Area (MSA) region. The RIMS II model is commonly used in both the public and private sectors in order to estimate the economic impact resulting from new development projections.

Table 4.2.7 displays the estimated cost to build the residential and commercial components of each development alternative. Total project costs are significantly higher than these estimates, as these estimates do not include infrastructure, landscape construction (recreation space and constructed wetlands), environmental remediation, or soft costs (architecture, engineering, financing costs).

Table 4.2.7 Summary of Development Costs

	Alternative 1	Alternative 2	Alternative 3
Residential	\$881,019,300	\$959,475,000	\$963,711,500
Commercial	\$456,400,000	\$394,050,000	\$315,950,000
<i>Total</i>	<i>\$1,337,419,300</i>	<i>\$1,353,525,000</i>	<i>\$1,279,661,500</i>

The results in Table 4.2.8 were derived by applying the development costs to the RIMS II model. The estimate of construction jobs are those in the construction industry, while the estimate of total jobs includes construction industry jobs, as well as the employment resulting from purchases made by construction employees and construction companies. The indirect regional impact is the total amount spent across all industries as a result of the dollars spent for project development.

Table 4.2.8 Job Impact of Development

	Alternative 1	Alternative 2	Alternative 3
Construction Jobs	10,800	11,000	10,400
Total Jobs	19,900	20,100	19,000
<i>Indirect Regional Impact</i>	<i>\$2,473,824,500</i>	<i>\$2,503,615,200</i>	<i>\$2,366,989,900</i>

Long-Term Employment Impacts

At build-out and operation, the commercial components of the action alternatives would provide permanent employment opportunities. This information is also discussed and presented in the Demographics and Housing section above. Employment density estimates from the Energy Information Administration of the US Department of Energy (2003), along with the average square foot estimates, were used to determine the number of full-time employees that would work within Poplar Point at build-out; the employment density estimates vary by principal building activity, as shown in Table 4.2.9.

Table 4.2.9 Estimated Number of Employees in Each Alternative at Full Build-Out

Principal Activity	Employment Density	Alternative 1	Alternative 2	Alternative 3
Retail	1,250 sq ft/emp	170	520	210
Office	435 sq ft/emp	3,220	1,310	1,680
Other (cultural center, hotel)	2,075 sq ft/emp	240	270	220
<i>Total Employees</i>		<i>3,630</i>	<i>2,100</i>	<i>2,110</i>

Tax and Fiscal Impacts

Depending on where people employed within the Poplar Point office and retail components choose to live, the project would have tax and fiscal impacts across the District of Columbia-Maryland-Virginia region. Determining these impacts again requires a specific analysis, as discussed below.

Individual Income Taxes: According to the U.S. Census (2000) County to County Worker Flow Files, 28% of District of Columbia employees live in the District, 42% live in Maryland, and 28% live in Virginia. The remaining 2 percent live in a variety of locations throughout the country. Assuming the permanent employees within Poplar Point have the same distribution, Table 4.2.10 displays the place of residence for the permanent employees within Poplar Point for each alternative. The U.S. Department of Labor Statistics (2008) estimates the mean hourly wage for the Washington-Baltimore-Northern Virginia, DC-MD-VA-WV CSA to be \$24.80 or approximately \$52,000 per year for a full-time employee. Table 4.2.11 provides an estimate of the total individual income tax revenue (sum of all employees predicted to live in each location) for the District of Columbia, Maryland, and Virginia for each alternative.

Table 4.2.10 Permanent Employees by Place of Residence in Each Alternative

Place of Residence	Alternative 1	Alternative 2	Alternative 3
District of Columbia	1,016	588	591
Maryland	1,525	882	886
Virginia	1,016	588	591
Other Location	73	42	42
Total Employees	3,630	2,100	2,110

Table 4.2.11 Individual Income Tax Revenue Estimates by Place of Residence

Place of Residence	Alternative 1	Alternative 2	Alternative 3
District of Columbia	\$3,272,808	\$1,893,360	\$1,902,376
Maryland	\$3,685,721	\$2,132,235	\$2,142,389
Virginia	\$2,777,313	\$1,606,710	\$1,614,361

Real Property Tax: Table 4.2.12 estimates the annual real property tax revenue the District of Columbia would receive from the residential component of each Poplar Point alternative, assuming all residential units are sold at an average price of \$381,000.¹

Table 4.2.12 Residential Real Property Tax Estimates

	Alternative 1	Alternative 2	Alternative 3
Number of Residential Units	3,500	4,250	4,300
Real Property Tax per Unit	\$3,239	\$3,239	\$3,239
Total Real Property Tax	\$11,334,750	\$13,763,625	\$13,925,550

The District of Columbia could also earn real property tax revenue from the commercial component of each alternative, assuming the commercial components are sold to a non-tax exempt entity. Table 4.2.13 estimates the real property tax for each alternative based on the improved value of the property alone (not including land costs).

Table 4.2.13 Commercial Real Property Tax Estimates

	Alternative 1	Alternative 2	Alternative 3
Improvements	\$456,400,000	\$394,050,000	\$315,950,000
Real Property Tax	\$8,437,400	\$7,283,925	\$5,839,075

Retail Sales and Sales Taxes: In each alternative, new residents and employees within Poplar Point would increase retail spending in the study area and potentially in the region at large, depending on the previous

¹ This value is the median sales price of all residential units sold in the District in the 2nd quarter of 2009 according to DataQuick.

place of residence or employment. Table 4.2.14 estimates the annual retail spending of Poplar Point residents and employees in the study area.

Table 4.2.14 Annual Employee and Resident Retail Spending in Study Area

	Alternative 1	Alternative 2	Alternative 3
Poplar Point Resident Spending (a)	\$11,550,000	\$14,025,000	\$14,190,000
Poplar Point Employee Spending (b)	\$8,330,900	\$4,819,600	\$4,842,500
Total Spending	\$19,880,900	\$18,844,600	\$19,032,500

(a) Estimate based on BLS, Consumer Expenditure Survey, 2007. National average annual spending on food, alcoholic beverages, entertainment, apparel, household goods and furnishings, personal care is \$15,000 per person. This estimate assumes 10% of a resident's total annual spending would occur in the study area.

(b) Estimate Based on ICSC, 2004. "Office Worker Retail Spending Patterns."

Market Classification: Downtown Limited.

84% purchased lunch outside office; amount spent per week: \$32.00

61% shopped before/during/after work; 24% shopped closer to work; amount spent \$82.00

35% socialized after work; amount spent: \$15.00

The District of Columbia would also earn additional sales tax revenue on this increased spending, assuming this revenue is new and does not detract from existing spending in the city. Table 4.2.15 estimates the annual tax revenue the District of Columbia might earn from employee and resident spending. In addition to this spending, the additional retail space within the Poplar Point alternatives would increase sales tax revenue for the District of Columbia, again assuming this retail spending is new and does not shift existing spending from other locations in the city. While these estimates are not quantified, it can be assumed that retail tax revenue generated is proportional to the amount of retail space provided. The amount of retail space proposed in each alternative is listed in Table 4.2.16.

Table 4.2.15 Estimated Sales Tax Revenue from Employee and Resident Spending in Study Area

	Alternative 1	Alternative 2	Alternative 3
Annual Tax Revenue from Resident Spending (a)	\$693,000	\$841,500	\$851,400
Annual Tax Revenue from Employee Spending (b)	\$666,500	\$385,600	\$387,400
Total Annual Tax Revenue	\$1,359,500	\$1,227,100	\$1,238,800

(a) Estimate assumes that the District's 6% sales tax applies to all spending.

(b) Estimate assumes that the District's 6% sales tax applies to 50% of spending and the 10% restaurant meal sales tax applies to the remainder.

Table 4.2.16 Average Estimated Retail Space in Each Alternative

	Alternative 1	Alternative 2	Alternative 3
Total Retail Space (sq. ft.)	210,000	650,000	260,000

Assumptions

For this impact topic, the area of analysis, or study area, includes Ward 8 and the neighborhoods to the west directly across the River.

Impact Thresholds

To adequately define the magnitude of the economic impact, the following thresholds were established. These thresholds will describe the impacts of the proposed action relative to the site's existing conditions. Positive impacts result in improvements to established economic conditions of the environment while adverse impacts would diminish the economic condition of this environment.

Negligible: Effects would be below detectable levels or detectable only through indirect means and with no discernible effect on the character of the economic environment.

Minor: Effects would be detectable but localized in geographic extent or size of population affected and not expected to alter the character of the economic environment.

Moderate: Effects would be readily detectable across a broad geographic area or segment of the community and could have an appreciable effect of the character of the economic environment.

Major: Effects would be readily apparent, affect a substantial segment of the population, extend across the entire community or region and are likely to have a noticeable effect on the character of the economic environment.

Duration

Short-term impacts would occur during the construction period. Long-term impacts would occur during operation.

4.2.7.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, the USPP Aviation Section Facility, USPP Anacostia Operations Facility, NPS NACE Headquarters would continue to be the primary activities within the Project Area. Therefore, there would be no change to the economic or fiscal resources in the Project Area, the surrounding community, or the Washington, DC MSA.

Cumulative Impacts

Under the No Action Alternative, there would be negligible direct and indirect impacts to economic and fiscal resources. There would be no cumulative impacts to these resources.

Conclusion

As no changes would occur due to the No Action Alternative, this alternative would have a negligible impact on economic and fiscal resources in the short- and long-term. By definition, socio-economic resource topics cannot result in an impairment of park resources.

4.2.7.3 Alternative 1

Direct and Indirect Impacts

Transforming a site mostly used as parkland into over 6.5 million square feet of commercial and residential space requires a significant investment. It is estimated to cost approximately \$1.34 billion to build the residential and commercial components of Alternative 1; this estimate does not include environmental remediation, public infrastructure, planting, and other fringe development costs.

Alternative 1 would also have significant fiscal implications on the District of Columbia and the surrounding states. The 3,630 employees in Poplar Point would generate approximately \$3.27 million in income tax revenue for the District of Columbia, over \$3.68 million for Maryland, and almost \$2.78 million for Virginia. Granted these estimates do not necessarily indicate an increase in revenue, as some of these employees may already be employed and living in each jurisdiction.

Alternative 1 would also generate tax revenue for the District of Columbia through property and sales taxes. Property tax revenues would likely exceed \$11.3 million for the residential units and \$8.4 million for the commercial component. Sales tax revenues would likely reach \$1.36 million from resident and employee spending in the study area. Spending within Alternative 1's 210,000 square feet of retail space by other residents and employees in the study area and the larger region would also generate a minor amount of additional sales tax revenue for the District of Columbia.

In the short-term, Alternative 1 would create direct employment opportunities for approximately 10,800 people in the construction industry and a total of 19,900 jobs across numerous industries in Washington, DC MSA. It is also estimated to have an indirect regional impact of approximately \$2.5 billion across all industries in the Washington, DC MSA. If local residents are hired to work within Poplar Point and if construction workers spend income in the nearby businesses while on-site, the investment in Poplar Point would have a positive impact on the economic conditions of the surrounding community in the short-term.

Alternative 1 would provide permanent retail and office employment opportunities for over 3,600 individuals. Depending on the skill requirements of the available jobs and assuming the jobs created are new and not transferred from another area of Washington, DC, Alternative 1's employment opportunities would have a minor, positive impact on the study area and the region in the long-term.

Tax revenues from Alternative 1 would have a minor to moderate, positive impact on the District of Columbia and a minor, positive impact on the larger region. These impacts would occur primarily in the long-term.

Cumulative Impacts

Current and future development projects in the study area would further add to the positive impact of the Poplar Point development on the area's economy, increasing employment opportunities and tax revenue in the region.

Conclusion

Alternative 1 would have a minor to moderate, positive impact on the economy of the study area and the larger region in the short- and long-term. Despite this positive impact, mitigation measures are recommended to ensure Ward 8 residents experience the largest share of the benefits. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

- Employment opportunities should be offered to residents through the DC Department of Employment's First Source Program; this program ensures 51% of new hires are District residents.
- Employment opportunities should be visibly advertised in the local community and a public meeting should be held to inform residents of job openings.

4.2.7.4 Alternative 2

Direct and Indirect Impacts

Alternative 2 would require over \$1.35 billion in investment to build just less than 6.5 million square feet of commercial and residential space, not including the cost of environmental remediation, public infrastructure, planting, and soft costs. Alternative 2 would also have significant fiscal implications on the District of Columbia and the surrounding states. The 2,100 permanent employees within Poplar Point would generate approximately \$1.89 million in income tax revenue for the District of Columbia, over \$2.13 million for Maryland, and almost \$1.61 million for Virginia. As some employees may already be employed and living in each jurisdiction, the actual increase in revenue may be much less.

Property and sales tax revenue would also be generated for the District of Columbia through Alternative 2. Property tax revenues would likely exceed \$13.7 million for the residential units and \$7.2 million for the commercial component. Resident and employee spending in the study area would generate \$1.22 million in sales tax revenue. As Alternative 2 includes a significant retail component (650,000 sq. ft.), retail spending by other residents and employees in the study area and the larger region would also generate a moderate amount of additional sales tax revenue for the District of Columbia.

Approximately 11,000 people would be employed in the construction industry and 20,100 people would be employed across numerous industries in Washington, DC MSA in the short-term as a result of this development. The short-term, indirect regional impact of Alternative 2 is over \$2.5 billion across all industries in the Washington, DC MSA. In the long-term, Alternative 2 would create 2,100 permanent jobs in the shops, offices, and other commercial spaces within Poplar Point. The neighborhoods surrounding Poplar Point would

experience a substantial portion of this minor, positive impact, particularly if local residents are hired to work on-site and if workers spend income in the nearby businesses.

Tax revenues from Alternative 2 would have a minor to moderate, positive impact on the District of Columbia and a minor, positive impact on the larger region. These impacts would occur primarily in the long-term.

Cumulative Impacts

Current and future development projects in the study area would further add to the positive impact of the Poplar Point development on the area's economy, increasing employment opportunities and tax revenue in the region.

Conclusion

Alternative 2 would have a minor to moderate, positive impact on the economy of study area and the larger region in the short- and long-term. Despite this positive impact, mitigation measures are recommended to ensure Ward 8 residents experience the largest share of the benefits. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

Same as for Alternative 1.

4.2.7.5 Alternative 3

Direct and Indirect Impacts

Alternative 3 would result in the construction of over 6.1 million square feet of commercial and residential space. It is estimated to cost almost \$1.28 billion in hard costs for this project, not including environmental remediation, public infrastructure, planting, and other fringe development costs.

Alternative 3 would also have significant fiscal implications for the District of Columbia and the surrounding states. The over 2,100 permanent employees within Poplar Point would generate approximately \$1.90 million in income tax revenue for the District of Columbia, over \$2.14 million for Maryland, and more than \$1.61 million for Virginia. These estimates do not necessarily indicate a net increase in revenue, as some of these employees may already be employed and living in each jurisdiction.

Alternative 3 would also generate tax revenue for the District of Columbia through property and sales taxes. Property tax revenues would likely exceed \$13.9 million for the residential units and \$5.8 million for the commercial component. Sales tax revenues would likely exceed \$1.23 million from resident and employee spending in the study area. Spending within Alternative 3's 260,000 square feet of retail space by other residents and employees in the study area and the larger region would also generate a minor amount of additional sales tax revenue for the District of Columbia.

In the short-term, Alternative 3 would create direct employment opportunities for approximately 10,400 people in the construction industry and a total of 19,000 jobs across numerous industries in Washington, DC MSA. The indirect regional impact of Alternative 3 is approximately \$2.4 billion across all industries in the Washington, DC MSA. In the long-term, Alternative 3 would create 2,100 permanent jobs in the shops, offices, and other commercial spaces within Poplar Point. If local residents are hired to work on-site and if workers spend income in the nearby businesses, the neighborhoods surrounding Poplar Point would positively experience a substantial portion of this impact.

Tax revenues from Alternative 3 would have a minor to moderate, positive impact on the District of Columbia and a minor, positive impact on the larger region. These impacts would occur primarily in the long-term.

Cumulative Impacts

Current and future development projects in the study area would further add to the positive impact of the Poplar Point development on the area's economy, increasing employment opportunities and tax revenue in the region.

Conclusion

Alternative 3 would have a minor to moderate, positive impact on economy of study area and the larger region in the short- and long-term. Despite this positive impact, mitigation measures are recommended to ensure Ward 8 residents experience the largest share of the benefits. By definition, socio-economic resource topics cannot result in an impairment of park resources.

Mitigation

Same as for Alternative 1.

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CULTURAL RESOURCES

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4.3 Cultural Resources

4.3.1 Archaeological Resources

4.3.1.1 Analysis Methods and Assumptions

Analysis Methods

Many data sources were used to analyze impacts to archaeological resources. These sources are discussed in Chapter 3 and include reports on past archaeological investigations within the Project Area as well as records kept by the SHPO of investigations in the immediate vicinity. Historic maps and records were also used during the analysis. Although these records and investigations provide some information on the potential for archaeological materials to be present in the Project Area, they do not constitute a complete inventory of archaeological resources and can only be used as predictive tools.

The alternatives on this project have the potential to impact several categories of resources:

- Suspected Historic Sites (historical archaeological sites that are suspected to be present based on historical records);
- Suspected Prehistoric Sites (prehistoric archaeological sites that were previously recorded but whose exact location has not been confirmed);
- Potential Discovery Sites (as yet unidentified historic or prehistoric sites along the historic 1700s-1800s shoreline that could be buried beneath historic period fill; this area is considered highly sensitive for archaeological discoveries);
- Potential Early Period Discovery Sites (as yet unidentified Paleoindian or Archaic period prehistoric sites on land that became part of the Anacostia River during historic times, and which could be buried beneath historic period fill and prehistoric alluvium; this area is considered moderately sensitive for archaeological discoveries); and
- Previously Recorded Sites (sites that were previously recorded and whose locations are confirmed).

Impacts to each of these categories of sites will be discussed in the alternatives discussion that follows.

Assumptions

Any impacts to historical archaeological resources are assumed to be local to the Washington, DC area, unless identified as regional within the analysis. Any effects to prehistoric archaeological resources are assumed to have regional impacts, unless otherwise identified in the analysis in this document.

Impact Thresholds

Thresholds describing the severity of potential impacts to archaeological resources resulting from the proposed alternatives were developed for the impact analysis. Both adverse and positive impacts may occur due to the proposed alternatives. Adverse impacts result from the disruption or displacement of archaeological resources as a result of earthmoving activities, soil compaction, and related ground disturbing activities associated with construction and planting. Positive impacts are those that better protect an archaeological resource as a result of changes in patterns of visitor use or management action.

The impact thresholds developed for the discussion of archaeological impacts are as follows:

Negligible: The impact is barely measurable, with no perceptible adverse or positive consequences.

Minor: A minor adverse impact affects archaeological sites with the potential to yield important information in prehistory or history. Impacts are detectable and measurable, but do not diminish the overall integrity of the resource. The impact does not result in changes to defining features or aspects of integrity that contribute to eligibility to the National Register. For purposes of Section 106, the determination of effect is no adverse effect. A minor positive impact maintains and preserves an archaeological resource. Impacts are measurable and localized. For purposes of Section 106, the determination of effect is no adverse effect.

Moderate: A moderate adverse impact is sufficient to cause a noticeable change, substantially affecting archaeological sites with the potential to yield information, even if most of the resource can be avoided, and resulting in loss of overall integrity that consequently jeopardizes a site's National Register eligibility. Impacts include measurable change to character-defining elements. For purposes of Section 106, determination of effect is adverse effect. A moderate positive impact is measurable, and may include the stabilization of currently threatened sites. For purposes of Section 106, determination of effect is no adverse effect.

Major: A major adverse impact consists of highly noticeable disturbance, degradation, or destruction of an archaeological resource that results in the loss of most or all of the site and its potential to yield important information. These impacts result in the loss of overall integrity and substantial changes to character-defining elements to the extent that the resource is no longer eligible for National Register listing. For the purposes of Section 106, the determination of effect is adverse effect. A major positive impact consists of active intervention undertaken to preserve a site. Effects are measurable and contribute to the overall stability of the site. For purposes of Section 106, the determination of effect is no adverse effect.

Duration

Archaeological resources are non-renewable. Once a direct impact occurs, the effect is irreversible and permanent; therefore duration is not identified within this analysis.

4.3.1.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, ground disturbances may occur if regular maintenance or planting is undertaken. These actions would be minimal and most are likely to occur within previously disturbed contexts, resulting in a low likelihood of impacting intact archaeological resources. However, if archaeological resources are encountered during ground disturbance, they would be addressed by the NPS standard operating procedures, which encourage preservation through avoidance. Under the No Action Alternative, there could be negligible, local and regional, long-term adverse impacts and no adverse effects under Section 106.

Cumulative Impacts

Cumulative impacts would occur from the incremental impact of this alternative when added to other past, present, and foreseeable future actions. Under this alternative, however, the National Park Service would control all activities according to their standard operating procedures, which encourage preservation of archaeological sites. Therefore, there would be continued preservation and no cumulative impact to archaeological resources under this alternative.

Conclusion

The No Action Alternative would consist of minor to moderate ground disturbances resulting in negligible, local and regional, long-term adverse impacts to archaeological resources. There would be no cumulative impacts. Under Section 106, there would be no adverse effects to archaeological resources. In addition, there would be no unacceptable impacts to or impairment of archaeological resources as a result of the No Action Alternative.

4.3.1.3 Alternative 1

Direct and Indirect Impacts

Several components of this alternative include ground disturbance that may impact archaeological resources. These components constitute different levels of ground disturbance and are located in areas that have varying levels of archaeological sensitivity. The types of archaeological resources that could be within the Project Area are listed below with a discussion of the likelihood that they may be impacted by the activities of this alternative.

- Suspected Historic Sites – This alternative places buildings over the area that contained the historic shoreline. Historic maps show that there were parcels along this portion of the shoreline, and several buildings and outbuildings, including the Talbot property, located within them.
- Suspected Prehistoric Sites – This alternative places several buildings near the previously recorded location of prehistoric site 51SE24 and multi-component site 51SE012. In addition, the location of

buildings in the North Field portion of the Project Area is in the vicinity of where 51SE003, 51SE005, and 51SE022 are thought to be located.

- Discovery Sites – Development under this alternative would include placing buildings over the historic-period shoreline that has a high sensitivity for the presence of previously undiscovered archaeological sites. This alternative would place up to six multi-story buildings at the south end of the Project Area, and a multi-story building and hangar at the north end of the Project Area, greatly increasing the potential to disturb possible buried archaeological sites. This alternative has the greatest potential to disturb previously undiscovered archaeological sites.
- Early Period Discovery Sites – Several buildings and structures under this alternative would be placed over the area immediately adjacent to the historic shoreline. This area was most likely a shoreline during the Holocene and could contain early Archaic sites.
- Previously Recorded Sites – The only sites that have been confirmed to be within the Project Area are P09, 51SE058, and 51SE059. Under this alternative, P09 would be in the wetlands preserve area and would be undisturbed. Both 51SE058 and 51SE059 would still be located in southern Anacostia Park and could be impacted by the recreational improvements planned under this alternative.

Several of the ground-disturbing activities in this alternative, such as the preservation of wetlands or the construction of cultural/entertainment areas, would have at most a minor local or regional, long-term adverse impact (no adverse effect) on archaeological resources. A few of the activities in this alternative have the potential to cause major local or regional, long-term adverse impacts (adverse effect) on archaeological resources. These include construction of buildings more than 9 stories tall. Since much of the area is on fill, the foundations or pilings for these buildings have the potential to penetrate the fill and disturb intact, original ground surface where archaeological sites are most likely to be. These actions may precipitate major local or regional, long-term adverse impacts (adverse effect) on archaeological resources. If archaeological resources are encountered during any of the moderate to major ground disturbing activities but the activity is then modified to avoid the resource, this would comprise a positive local or regional, long-term impact (no adverse effect) because the location of the site would then be known and protected from future inadvertent impacts. Likewise, elements of this alternative that do not include ground-disturbing activities would have minor local or regional, long-term positive impacts (no adverse effect) on potential archaeological sites that may remain preserved.

Cumulative Impacts

If important archaeological resources are encountered as a result of this alternative, cumulative impacts would occur from the incremental impact of this alternative when added to other past, present, and foreseeable future actions. Multiple projects are planned or have recently been completed in the Anacostia area. Some of these past projects have been the location of archaeological sites near the Project Area and it is likely that planned projects may also impact archaeological sites in the future.

Archaeological sites are protected by both local and non-local laws and ordinances (as outlined in Chapter 1). Archaeological sites are non-renewable resources. In general, impacts on significant archaeological sites are mitigated by data collection, and that data collection, along with subsequent development of the site, causes the destruction of that archaeological site. Because of the likelihood that past, present, and foreseeable

actions in the study area would impact archaeological resources, any adverse impacts/effects on archaeological sites discovered as a result of this alternative would have a major local or regional, long-term cumulative impact.

Conclusion

Overall, Alternative 1 would have local or regional, long-term impacts ranging from minor positive to major adverse, depending on the level of ground disturbance. Thus, there could be an adverse effect under Section 106. The ground-disturbing activities in this alternative may disturb significant archaeological resources. Depending on the size of the disturbance, these activities would have a local or regional, long-term adverse impact ranging from minor (no adverse effect) to major (adverse effect). The range of potential impacts under this alternative is due, in part, to the lack of specific information regarding the location of archaeological sites. Elements of this alternative that would not disturb the ground or that could be adjusted to avoid archaeological sites would have no adverse impact (no adverse effect) on archaeological resources, and may have a minor local or regional, long-term positive impact if the resources remain preserved below the surface. Assuming mitigation measures described below are carried out, Alternative 1 would not result in unacceptable impacts to or impairment of archaeological resources within the park.

Mitigation

Since the exact location of archaeological sites within the Project Area is unknown with three exceptions, Phase I investigations (including examination of the Smithsonian records for the sites and geoarchaeological investigations) should be carried out prior to ground disturbance. If archaeological sites are encountered, treatment plans should be prepared in consultation with NPS and SHPO and mitigation measures should be undertaken.

4.3.1.4 Alternative 2

Direct and Indirect Impacts

As under Alternative 1, under Alternative 2 the majority of the ground disturbance would be from the construction of new buildings, most of which would be clustered at the southern end of the Project Area in a place that would have been just offshore during historic times. Additional buildings and structures would be located further east and a commemorative/cultural site would be located on the point, also within areas that would have historically been located along the shoreline. The types of archaeological resources that could be within the Project Area are listed below with a discussion of the likelihood that they would be impacted by the activities of this alternative.

- Suspected Historic Sites – This alternative places buildings over the area that contained the historic shoreline. Historic maps show that the Talbot property and at least one mapped building fall within an area slated for construction of 7-8 story buildings.
- Suspected Prehistoric Sites – This alternative places several buildings near a previously recorded location of prehistoric sites 51SE24 and 51SE011. In addition, the location of buildings in the North

Field portion of the Project Area is in the vicinity of where 51SE003, 51SE005, and 51SE022 are thought to be located.

- Discovery Sites – Development under this alternative would include placing one building on and two buildings near a small portion of the historic-period shoreline which has a high sensitivity for the presence of previously undiscovered archaeological sites. In addition, a multi-story building and a hangar at the north end of the Project Area would be located in an area where archaeological materials were collected historically.
- Early Period Discovery Sites – Most of the buildings under this alternative would be placed over the area immediately adjacent to the historic shoreline. This area was most likely a shoreline during the Holocene and could contain early archaeological sites, but overall archaeological sensitivity is considered lower than the historic period shoreline.
- Previously Recorded Sites – The only confirmed sites within the Project Area are P09, 51SE058, and 51SE059. Under this alternative, a 9-story or higher building would be constructed very close to P09. Both 51SE058 and 51SE059 would still be located in southern Anacostia Park and could be impacted by the recreational improvements planned under this alternative.

Several of the ground-disturbing activities in this alternative, such as the creation of wetlands or the cultural/entertainment areas, would have at most a minor local or regional, long-term adverse impact (no adverse effect) on archaeological resources. A few of the activities in this alternative have the potential to cause major local or regional, long-term adverse impacts (adverse effect) on archaeological resources. These activities include construction of buildings more than 9 stories tall. Since much of the area is on fill, the foundations or pilings for these buildings would most likely penetrate the fill and disturb intact, original ground surface where archaeological sites are most likely to be. These actions may precipitate major local or regional, long-term adverse impacts (adverse effect) on archaeological resources. If archaeological resources are encountered during any of the moderate to major ground disturbing activities but the activity is then modified to avoid the resource, this would comprise a positive local or regional, long-term impact (no adverse effect) because the location of the site would then be known and protected from future inadvertent impacts. Likewise, elements of this alternative that do not include ground-disturbing activities would have minor local or regional, long-term positive impacts (no adverse effect) on potential archaeological sites that may remain preserved as a result.

Cumulative Impacts

Cumulative impact to archaeological resources under Alternative 2 would be similar to those identified under Alternative 1, since multiple projects are planned or have been completed in the Anacostia area. Some of these past projects have been the location of archaeological sites around the Project Area, and it is likely that planned projects may also impact archaeological sites in the future. Because of the likelihood that past, present, and foreseeable actions in the study area would impact archaeological resources, any adverse impacts/effects on archaeological sites discovered as a result of this alternative would have a major local or regional, long-term cumulative impact.

Conclusion

Overall, Alternative 2 would have local or regional, long-term impacts ranging from minor positive to major adverse, depending on the level of ground disturbance. Thus, there could be an adverse effect under Section 106. The ground-disturbing activities in this alternative may disturb significant archaeological resources. Depending on the size of the disturbance, these activities would have a local or regional, long-term adverse impact ranging from minor (no adverse effect) to major (adverse effect). Elements of this alternative that would not disturb the ground or that could be adjusted to avoid archaeological sites would have no adverse impact (no adverse effect) on archaeological resources, and could have a minor local or regional, long-term positive impact if the resources remain preserved below the surface. Assuming mitigation measures identified below are carried out, Alternative 2 would not result in unacceptable impacts to or impairment of archaeological resources within the park.

Mitigation

Mitigation identified for Alternative 2 is identical to that specified for Alternative 1. Phase I investigations (including examination of the Smithsonian records for the sites and geoarchaeological investigations) should be carried out prior to ground disturbance. If archaeological sites are encountered, treatment plans should be prepared in consultation with NPS and SHPO and mitigation measures should be implemented.

4.3.1.5 Alternative 3

Direct and Indirect Impacts

As under Alternatives 1 and 2, the majority of the ground disturbance in this alternative would be from the construction of new buildings. The majority of these would be clustered within Poplar Point at the south end of the project area, but additional buildings and structures are proposed within southern Anacostia Park and North Field. Large portions of these areas would have been just offshore during historic times. The following types of archaeological resources that could be within the Project Area are listed below with a discussion of the likelihood that they would be impacted by the activities of this alternative.

- Suspected Historic Sites – This alternative places buildings over an area that constituted the historic shoreline. Historic maps show that the Talbot property and at least two mapped building fall within an area slated for 9+ story buildings.
- Suspected Prehistoric Sites – This alternative places several buildings near the previously recorded location of prehistoric site 51SE011. As with Alternatives 1 and 2, the location of buildings in the North Field portion of the Project Area is in the vicinity of where 51SE003, 51SE005, and 51SE022 are thought to be located.
- Discovery Sites – Development under this alternative would include placing buildings over a small portion of the historic-period shoreline that has a high sensitivity for the presence of previously undiscovered archaeological sites. However, compared with Alternatives 1 and 2, this alternative has the fewest number of buildings within this area.

- Early Period Discovery Sites – Most of the new buildings in this alternative would be placed over the area immediately adjacent to the historic shoreline. This area would most likely have been a shoreline during the Holocene and could contain early Archaic sites, but overall archaeological sensitivity is considered to be lower than at the historic period shorelines.
- Previously Recorded Sites – The only confirmed sites within the Project Area are P09, 51SE058, and 51SE059. Under this alternative, no development is proposed for the area encompassing P09. As with Alternatives 1 and 2, 51SE058 and 51SE059 would still be located in southern Anacostia Park and could be impacted by the proposed recreational improvements.

Several of the ground-disturbing activities in this alternative, such as the preservation or creation of wetlands and the cultural/entertainment areas, would have at most a minor local or regional, long-term adverse impact (no adverse effect) on archaeological resources. A few of the activities in this alternative have the potential to cause major local or regional, long-term adverse impacts (adverse effect) on archaeological resources. These include construction of buildings more than nine stories tall. Since much of the area is on fill, the foundations or pilings for these buildings could penetrate the fill and disturb intact, original ground surface where archaeological sites are most likely to be. These actions may precipitate major local or regional, long-term adverse impacts (adverse effect) on archaeological resources. If archaeological resources are encountered during any of the moderate to major ground disturbing activities but the activity is then modified to avoid the resource, this would comprise a positive local or regional, long-term impact (no adverse effect) because the location of the site would then be known and protected from future inadvertent impacts. Likewise, elements of this alternative that do not include ground-disturbing activities would have minor local or regional, long-term positive impacts (no adverse effect) on potential archaeological sites that may remain preserved as a result.

Cumulative Impacts

Cumulative impact to archaeological resources under Alternative 3 would be similar to those identified under Alternative 1, since multiple projects are planned or have been completed in the Anacostia area. Some of these past projects have been the location of archaeological sites around the Project Area, and it is likely that planned projects may also impact archaeological sites in the future.

Conclusion and Impairment Finding

Overall, Alternative 3 would have local or regional, long-term impacts ranging from minor positive to major adverse, depending on the level of ground disturbance. Thus, there could be an adverse effect under Section 106. The ground-disturbing activities in this alternative may disturb significant archaeological resources. Depending on the size of the disturbance, these activities would have a local or regional, long-term adverse impact ranging from minor (no adverse effect) to major (adverse effect). Elements of this alternative that would not disturb the ground or that could be adjusted to avoid archaeological sites would have no adverse impact (no adverse effect) on archaeological resources, and may have a minor local or regional, long-term positive impact if the resources remain preserved below the surface. If the mitigation measures identified below are carried out, Alternative 3 would not result in unacceptable impacts to or impairment of archaeological resources within the park.

Mitigation

Mitigation identified for Alternative 3 is identical to that specified for Alternative 1. Phase I investigations (including examination of the Smithsonian records for the sites and geoarchaeological investigations) should be carried out prior to ground disturbance. If archaeological sites are encountered, treatment plans should be prepared in consultation with NPS and SHPO and mitigation measures should be implemented.

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4.3.2 Historic, Buildings, Structures, Sites, Districts, and Cultural Landscapes

4.3.2.1 Methodology and Assumptions

Analysis Methods

Historic buildings, structures, sites, districts, and cultural landscapes located within the APE that are listed in, or eligible for listing in, the National Register of Historic Places were identified as part of this study. For each of the alternatives, a determination was made regarding possible adverse effects under Section 106. Please refer to the discussion of the Section 106 analysis within Section 4.1.4.

A range of sources were used in analyzing the impacts to these resources. As discussed in Chapter 3, sources included National Register nominations, data from the DC Inventory of Historic Sites, historic maps, and previous studies. In addition, a three-dimensional model was utilized in the establishment of the APE and to determine potential indirect visual impacts from each of the action alternatives. The development of this model is discussed in greater detail in section 4.3.4.1.

Assumptions

Potential impacts to historic buildings, structures, sites, districts, and cultural landscapes within the APE include direct, indirect, and cumulative impacts. Please refer to Section 4.1.2 for a definition of each of these terms. The physical displacement, demolition, or alteration of a resource is a direct impact; changes in the operation, use or character of a resource may be a direct or indirect impact; changes to the visual context are considered to be indirect impacts.

Thresholds

Thresholds were defined to identify the severity of potential impacts resulting from the implementation of the proposed alternatives. In addition, there is a determination of effect (see Section 4.1.4). These thresholds are as follows:

Negligible: The impact does not result in any noticeable changes to the resource or its visual context. For the purposes of Section 106, the determination of effect would be no adverse effect.

Minor: A minor adverse impact occurs when there are visible changes to the resource or its visual context, but these changes do not affect the resource's character-defining features or integrity. For the purposes of Section 106, the determination of effect would be no adverse effect. A minor *positive* impact occurs when the historic resource is maintained and stabilized. For the purposes of Section 106, the determination of effect would be no adverse effect.

Moderate: A moderate adverse impact results in a change in one or more of the resource's character-defining features, but would not diminish the integrity of the resource to the extent that its NRHP eligibility would be lost. For the purposes of Section 106, the determination of effect would be adverse effect. A moderate positive impact results in the preservation or rehabilitation of a small number of character-defining features, and thus improves the integrity of the design. For the purposes of Section 106, the determination of effect would be no adverse effect.

Major: A major adverse impact results in substantial and highly noticeable changes to character-defining features such that the integrity of the resource would be compromised to the extent that it may no longer be eligible for listing in the National Register. For the purposes of Section 106, the determination of effect would be adverse effect. A major positive impact occurs when a large number of character-defining features are preserved or rehabilitated in accordance with the Secretary of the Interior's Standards. The preservation/rehabilitation of these features would substantially improve the integrity of the design. For the purposes of Section 106, the determination of effect would be no adverse effect.

Duration

For the purposes of this analysis, short-term impacts are associated with construction activities within the Project Area. Long-term impacts would persist beyond construction.

4.3.2.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, the land transfer would not occur and the Project Area would not be altered. The Project Area would continue to be managed under the jurisdiction of NPS as a portion of Anacostia Park. Within this area, the Anacostia Seawall and Engineer's House, which both contribute to the significance of Anacostia Park, would remain unchanged. As a result, there would be no direct or indirect impacts to historic buildings, structures, sites, districts, and cultural landscapes, either within the site or in the surrounding APE.

Cumulative Impacts

Under the No Action Alternative, the land transfer would not occur and the site would not be developed. There would thus be no cumulative impacts to historic buildings, structures, sites, districts, and cultural landscapes as a result of the No Action Alternative.

Conclusion

There would be no direct, indirect, or cumulative impacts resulting from the No Action Alternative. Further, there would be no adverse effect under Section 106, and no unacceptable impacts to or impairment of cultural resources.

4.3.2.3 Alternative 1

Direct and Indirect Impacts

Under Alternative 1, Poplar Point would be transferred from the jurisdiction of NPS to the District of Columbia and the site would be developed with a mixture of residential, commercial, and cultural uses, as well as open space. Development would be clustered on the point and at the southeast portion of the Poplar Point parcel. In addition, the NPS facility would be relocated south of Howard Road, the U.S. Park Police

Headquarters and Aviation Facility would be relocated to North Field, and improvements would be undertaken within Anacostia Park, including the renovation and addition of playing fields, the addition of picnic shelters, and the relocation of parking and tennis facilities closer to I-295.

Anacostia Park

Alternative 1 would have direct adverse impacts on Anacostia Park, as a portion of the park would be transferred out of federal ownership and developed with commercial, residential, and cultural uses. Alternative 1 would maintain and reinvigorate 70 acres of parkland on the site including a vegetated edge along the waterfront to the point. The development at the point under Alternative 1 would require the removal of the Engineer's House, a contributing structure to the historic site. The Anacostia Seawall, also located within the project site, would be reinforced and restored. Further, the Poplar Point development could introduce a dominant light element at the edge of the park. The development at North Field would remove a portion of the existing greenspace, however, the development would be clustered, still allowing for expanses of open space. This would be in keeping with the historic spatial organization of the park. While the location of the aviation facility at North Field would generate noise within this portion of the park, the facility already operates within the park on Poplar Point. The renovation of the playing fields and the addition of picnic pavilions and other recreational amenities within southern Anacostia Park would improve the park as a community resource, in keeping with its intended historic function. The relocation of the NPS NACE Headquarters would introduce a building just south of Howard Road, but the building would be small in scale and would not interrupt the perceived open space within the park. Overall, there would be long-term moderate adverse impacts to Anacostia Park, due primarily to the land transfer, loss of parkland on the point and at North Field, and the removal of the Engineer's House. However, there would be minor long-term positive impacts resulting from the reinforcement and restoration of the Anacostia Seawall. In addition, there would be minor short-term adverse impacts to the park during construction activities. Alternative 1 would result in an adverse effect under Section 106 on Anacostia Park.

Anacostia Historic District

The Anacostia Historic District is largely disconnected from the waterfront due to the location of I-295. Under Alternative 1, physical and visual connections would be established between the historic district and Poplar Point along W Street, Chicago Street, and Howard Road. In addition, the historic street grid that once extended from Uniontown northwest into Poplar Point would be reinstated within the development at the southeast edge of the site. These aspects of the development would result in minor long-term positive impacts to the Anacostia Historic District. However, there could be moderate short- and long-term adverse impacts to the district resulting from the restriction of views towards the Anacostia River (such as from Martin Luther King Jr. Avenue and W Streets), and potential noise and traffic impacts related to the development. In addition, the development at Poplar Point could introduce a dominant light source in the area, resulting in minor long-term adverse impacts. There would thus be an adverse effect on the Anacostia Historic District under Section 106.

The Frederick Douglass National Historic Site (Cedar Hill)

Alternative 1 would not result in any direct impacts to the Frederick Douglass National Historic Site. However, there could be indirect visual impacts. Set high on a hill overlooking Historic Anacostia, the Frederick Douglass National Historic Site affords sweeping views of Washington, DC that include the US Capitol Building

and the Washington Monument. Under Alternative 1, the proposed buildings at Poplar Point would appear in the foreground of the view, but at the edge. The new buildings would partially obscure a portion of the Anacostia River within the view, but would not obstruct the distant view of the Monumental Core. However, the development at Poplar Point could introduce a dominant light source in the area that could interfere with views from the Frederick Douglass National Historic Site at night. The additional buildings and structures within southern Anacostia Park, including those at the North Field, would not be visible. Due to the visibility of the buildings on the point, and the potential for impacts to night views, there would be a minor long-term indirect adverse impact to the Frederick Douglass National Historic Site, but this would not result in an adverse effect under Section 106.

St. Elizabeths Historic District

Alternative 1 would not result in any direct impacts to the St. Elizabeths Historic District. However, there could be indirect visual impacts. The view north from St. Elizabeths to downtown Washington, DC is a character-defining feature of the historic property. The Poplar Point development would be visible in the foreground of these views under Alternative 1, but would not obstruct the views. The proposed development would not diminish the integrity of the district and thus long-term adverse impacts would be minor and there would be no adverse effect under Section 106.

Civil War Fort Sites and Fort Circle Park System

The Fort Circle Parks were established to preserve the Civil War defenses and the associated open spaces that encircle the city. The Poplar Point redevelopment would not directly impact the Fort Circle Park System; however the buildings at Poplar Point would appear in the foreground of views towards Washington, DC from the overlook at Fort Stanton. Further, these buildings would partially obstruct views of the Fort Circle Parks from historic properties on the west side of the Anacostia River, particularly the Washington Navy Yard and Fort McNair, and could introduce a dominant light source in the views. Since the elevated Fort Circle Parks are intended to visually provide a consistent green edge around the city, and since the Poplar Point development would interrupt these views, it would result in a moderate adverse impact and an adverse effect under Section 106.

Suitland Parkway

Alternative 1 would not result in direct impacts to Suitland Parkway. It could, however, result in indirect visual impacts. The project site is currently largely obscured from view by vegetation and pedestrian and vehicular bridges near Martin Luther King, Jr. Avenue. The new development at Poplar Point would likely be visible from the north end of Suitland Parkway, however, it would be screened somewhat by the existing vegetation and infrastructure. In addition, the northern end of the parkway transitions from a greenway to a more urban environment as it approaches the Frederick Douglass Bridge. Thus, while these new buildings could be visible, they would not compromise the integrity of this historic resource. Long-term impacts would be minor and there would be no adverse effect under Section 106.

Washington Navy Yard Historic District

Under Alternative 1, there would be no direct impacts on the Washington Navy Yard Historic District. However, there would be indirect impacts resulting from changes in views south from the Navy Yard towards

Anacostia Park, the Anacostia Historic District, and the Fort Circle Parks. Views south from the Navy Yard are currently dominated by vegetation along the waterfront in the foreground and the Anacostia Highlands in the distance. Under Alternative 1, views of the edge of the topographic bowl, particularly Fort Stanton, would be partially obscured. Obscuring these views would result in a moderate long-term adverse impact and an adverse effect under Section 106. The proposed development within southern Anacostia Park would be shielded from view by the 11th Street Bridges.

L'Enfant and McMillan Plans

Under Alternative 1, a portion of Anacostia Park, originally conceived by the McMillan Commission at the turn of the century as part of the McMillan Plan, would be developed with commercial, residential, and cultural uses. This would result in minor to moderate long-term adverse impacts to the McMillan Plan, and thus could result in an adverse effect under Section 106. However, this would be partially mitigated by the development of 70 acres of Poplar Point as parkland and the installation of new playing fields and other recreational amenities within southern Anacostia Park. There could further be minor to moderate long-term adverse impacts to the McMillan Plan due to the obstruction of views of the edge of the topographic bowl. However, there could be minor long-term positive impacts to the McMillan Plan, as Poplar Point would be reconnected to historic Anacostia and could better serve as a community park, as the McMillan Commission intended.

Fort McNair and the National War College

There would be no direct impacts on Fort McNair and the National War College under Alternative 1. However, there would be indirect impacts resulting from changes in views south and east from these facilities towards Anacostia Park, the Anacostia Historic District, and the Fort Circle Parks. These views are currently dominated by the Frederick Douglass Bridge in the foreground, and the vegetation along the waterfront at Poplar Point beyond the bridge. The green edge of the Fort Circle Parks is visible in the distance. Under Alternative 1, large portions of the edge of the topographic bowl would be obscured by the development at Poplar Point. This would result in a moderate long-term adverse impact and an adverse effect under Section 106.

East and West Potomac Parks Historic District

There would be no direct impacts on the East and West Potomac Parks Historic District as a result of the implementation of Alternative 1. Like Anacostia Park, East Potomac Park was established as part of the McMillan Plan early in the 20th century. East Potomac Park and Hains Point lie north and west of Anacostia Park; there is a visual connection between the two sites along the Anacostia River. The proposed buildings at Poplar Point would appear within views from Hains Point along the river; however, they would appear to be part of an existing urban view that includes Bolling/Anacostia and the Frederick Douglass Bridge. Thus, long-term adverse impacts would be minor and there would be no adverse effect under Section 106.

Capitol Hill Historic District

Alternative 1 would not result in any direct impacts to the Capitol Hill Historic District. Indirect visual impacts would be negligible, as the new development at Poplar Point and within southern Anacostia Park would be

obscured from the historic district by existing buildings, highway infrastructure, and vegetation. There would be no adverse effect under Section 106.

WASA Pumphouses (S. Capitol and O Streets)

Alternative 1 would not result in any direct impacts on the WASA Pumphouses. However, there would be indirect visual impacts to the South Capitol Street Pumphouse, as the new development at Poplar Point under Alternative 1 would obstruct views of the Anacostia River. This would result in moderate adverse impacts to the South Capitol Street Pumphouse and an adverse effect under Section 106. The development would not be visible from the O Street Pumphouse and thus impacts to this resource would be negligible.

Congressional Cemetery

Alternative 1 proposes the construction of several buildings and structures southwest of Congressional Cemetery within southern Anacostia Park, including a hangar, office space, and training facilities at North Field. In addition, low and mid-rise buildings are proposed at Poplar Point. Due to the limited height of the buildings within southern Anacostia Park and screening provided by existing vegetation at the cemetery, impacts are anticipated to be negligible and there would be no adverse effect under Section 106.

George Washington Memorial Parkway

The development at Poplar Point under Alternative 1 would not result in direct impacts to the George Washington Memorial Parkway. However, there would be indirect visual impacts, as the new buildings would be visible across the Potomac River. The development would appear within an existing urban viewshed that includes Bolling/Anacostia and development on the west side of the Anacostia River. Thus, adverse impacts would be minor and there would be no adverse effect under Section 106.

Washington National Airport

Alternative 1 would not result in any direct impacts to Washington National Airport. However, there could be indirect visual impacts. The Project Area is evident in views east from the Old Terminal Building across the Potomac River. Under Alternative 1, the green swath that is the park would be altered by the inclusion of a cluster of buildings at Poplar Point. However, the existing view is somewhat urban due to development at Bolling/Anacostia and along the west side of the Anacostia River. Thus, although the view from the terminal building to Poplar Point would change, long-term adverse impacts would be indirect and minor. There would be no adverse effect under Section 106.

Other Resources within the APE

Under Alternative 1, there would be no direct or indirect impacts to the Latrobe Gate, Quarters A, Quarters B, the Commandant's Office, the Syphax School, the Thomas Law House, the Duncanson Cranch House, the Edward Simon Lewis House, Wheat Row, or the Barney Hill Historic District. Further, there would be no direct or indirect impacts to Carrollsburg Place, or the Metrobus Garage at 17 M Street, SE. There could be minor long-term adverse impacts to the PEPCO Power Plant on Buzzard Point and Bolling Air Force Base; however, there would be no adverse effect on these resources under Section 106. There could further be minor to moderate long-term indirect adverse impacts to the Old National Capital Pump Station and the Anacostia Freeway. This could potentially constitute an adverse effect under Section 106.

Cumulative Impacts

There could be moderate adverse to minor positive long-term impacts on historic buildings, structures, sites, districts, and cultural landscapes as a result of the implementation of Alternative 1. The adverse impacts to the McMillan Plan, when considered together with the loss of vegetation on the western edge of St. Elizabeths as the result of that property's redevelopment, could contribute to moderate indirect cumulative impacts to this resource. When considered together with the development at St. Elizabeths, the Poplar Point redevelopment could also contribute to minor to moderate long-term indirect cumulative impacts to Washington National Airport, Fort McNair, the Washington Navy Yard, the Fort Circle Parks, East Potomac Park, the George Washington Memorial Parkway, and St. Elizabeths itself, due to changes in views from these historic properties. Further, the realignment of the Frederick Douglass Bridge would alter the setting of the South Capitol Street Pumphouse; however, this would not likely result in an adverse effect, as the historic setting has already been compromised by the adjacent highway and bridge infrastructure.

Conclusion

The implementation of Alternative 1 would result in moderate adverse to minor positive long-term impacts to historic buildings, structures, sites, districts, and cultural landscapes. There would be an adverse effect under Section 106 on Anacostia Park due to the land transfer. In addition, there could be adverse effects to the McMillan Plan, the Washington Navy Yard, Fort McNair and the National War College, the Fort Circle Park System, Anacostia Freeway, and the Old National Capital Pump Station. However, there would be no unacceptable impacts to or impairment of historic resources as a result of the implementation of Alternative 1.

Mitigation

Mitigation for adverse impacts will be determined in consultation with the DC SHPO and other consulting parties. The following recommendations represent possible mitigation measures for the adverse impacts identified above:

- If feasible, preserve the Engineer's House;
- If preservation of the Engineer's House is not feasible, document the building in accordance with the Historic American Building's Survey/Historic American Engineering Record (HABS/HAER) standards prior to demolition;
- Complete the restoration of the Anacostia Seawall in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.
- In the final design, cluster the buildings and structures within southern Anacostia Park in keeping with historic development patterns within the park.
- Consider reducing the height or orientation of select buildings to preserve views of the Anacostia Highlands from historic properties on the west side of the Anacostia River;
- Maximize pedestrian and visual connections between the Anacostia Historic District and Poplar Point;

- Utilize consistent streetscape elements to create continuity between the Anacostia Historic District and Poplar Point (along W Street, for example);
- Widen the view corridor along W Street to preserve views of the Anacostia River from Historic Anacostia;
- Incorporate a landscape buffer between the development on the point and the riverfront in order to maintain the continuity of the green edge running along the east side of the Anacostia River;
- In the final design, maximize recreational features at the park such that it serves as a public amenity, as was intended by the McMillan Plan; and
- In the final design, seek opportunities for interpretation of the history of the site and surrounding historic resources, including Camp Marks.

4.3.2.4 Alternative 2

Direct and Indirect Impacts

Under Alternative 2, Poplar Point would be transferred from the jurisdiction of NPS to the District of Columbia and the site would be developed with a mixture of residential, commercial, and cultural uses, as well as open space. Buildings within Poplar Point would be clustered at the center of the site adjacent to the Metrorail station, preserving a green edge along the waterfront. Development within southern Anacostia Park and at North Field would be identical to that proposed under Alternative 1.

Anacostia Park

As under Alternative 1, Alternative 2 would have direct adverse impacts on Anacostia Park, as 130 acres of the park would be transferred out of federal ownership, and 60 acres of the park would be developed with commercial, residential, and cultural uses. Alternative 2 would maintain and reinvigorate 70 acres of parkland on the site including a vegetated edge along the waterfront. This vegetated edge would preserve the relative continuity of the park system that begins at the Frederick Douglass Bridge and extends east to the Maryland state line. The Anacostia Seawall, a contributing feature to the historic property, would be removed and the landscape would be terraced. The Engineer's House, however, would be preserved. Further, the Poplar Point development could introduce a dominant light element at the edge of the park. Like Alternative 1, the development at North Field would remove a portion of the existing greenspace, but the recreational improvements within southern Anacostia Park would improve the park as a community resource, in keeping with its intended historic function. In addition, the clustering of the buildings and paved areas at North Field would still allow for expanses of open space, in keeping with the historic spatial organization of the park. While the location of the aviation facility at North Field would generate noise within this portion of the park, the facility already operates within the park on Poplar Point. The relocation of the NPS NACE Headquarters would introduce a building just south of Howard Road, but the building would be small in scale and would not interrupt the perceived open space within the park. Overall, there would be long-term moderate adverse impacts to Anacostia Park, due primarily to the transfer of a portion of the park out of federal ownership, the loss of parkland, and the removal of the Anacostia Seawall. In addition, there would be minor short-term adverse impacts due to increased noise and traffic during construction. However, there would be minor long-

term positive impacts resulting from the preservation of the Engineer's House. Alternative 2 would result in an adverse effect under Section 106.

Anacostia Historic District

Under Alternative 2, as under Alternative 1, visual and physical connections would be reinforced between the historic district and Poplar Point along W Street, Chicago Street, and Howard Road, and the historic street grid would be reinstated along W Street at the southeast edge of the site. These aspects of the development would result in minor long-term positive impacts to the Anacostia Historic District. However, there could be minor short- and long-term adverse impacts to the district resulting from the restriction of views towards the Anacostia River, such as the view from Martin Luther King, Jr. Avenue and W Street, and potential noise and traffic impacts resulting from the Poplar Point development. In addition, the development at Poplar Point could introduce a dominant light source in the area, resulting in minor long-term adverse impacts. Thus, there would be an adverse effect on the Anacostia Historic District under Section 106.

The Frederick Douglass National Historic Site (Cedar Hill)

There would be no direct impacts to the Frederick Douglass National Historic Site as a result of Alternative 2. Further, there would not be indirect visual impacts as the development at Poplar Point, as well as that proposed within Southern Anacostia Park, would not be visible in views northwest towards the Monumental Core or north and east from the site. Impacts would thus be negligible and would not result in an adverse effect under Section 106.

St. Elizabeths Historic District

As under Alternative 1, under Alternative 2, there would be no direct impacts to the St. Elizabeths Historic District. Although the development at Poplar Point would be visible in the foreground of views towards downtown Washington, DC, this would not diminish the integrity of the district and thus long-term adverse impacts would be minor and there would be no adverse effect under Section 106.

Civil War Fort Sites and Fort Circle Park System

The Poplar Point redevelopment and construction within southern Anacostia Park would not directly impact the Fort Circle Park System; however the buildings at Poplar Point would appear in the foreground of views towards Washington, DC from the overlook at Fort Stanton. Further, these buildings would partially obstruct views of the Fort Circle Parks from historic properties on the west side of the Anacostia River, particularly the Washington Navy Yard, and could introduce a dominant light source in the views. Since the elevated Fort Circle Parks are intended to visually provide a consistent green edge around the city, and since the development at Poplar Point would interrupt these views, the project would result in a moderate adverse impact and an adverse effect under Section 106.

Suitland Parkway

Like Alternative 1, Alternative 2 would not result in direct impacts to Suitland Parkway, but it could result in indirect visual impacts. The new development at Poplar Point would likely be visible from the north end of Suitland Parkway, however, it would be screened somewhat by the existing vegetation and infrastructure. In addition, it would be consistent with the existing urban environment at the north end of the parkway. Thus,

while the new buildings at Poplar Point could be visible, they would not compromise the integrity of the parkway. Long-term impacts would be minor and there would be no adverse effect under Section 106.

Washington Navy Yard Historic District

Impacts to the Washington Navy Yard Historic District under Alternative 2 would be similar to those described for Alternative 1. There would be no direct impacts, but there would be indirect impacts resulting from changes in views south from the Navy Yard towards Anacostia Park, the Anacostia Historic District, and the Fort Circle Parks. Under Alternative 2, views of the edge of the topographic bowl, particularly Fort Stanton, would be partially obscured by the new buildings at Poplar Point, resulting in a long-term moderate adverse impact and an adverse effect under Section 106. The proposed development within southern Anacostia Park would be shielded from view by the 11th Street Bridges.

L'Enfant and McMillan Plans

Under Alternative 2, a portion of Anacostia Park, originally conceived by the McMillan Commission at the turn of the century as part of the McMillan Plan, would be developed with commercial, residential, and cultural uses. This would result in minor to moderate long-term adverse impacts to the McMillan Plan, and thus could result in an adverse effect under Section 106. However, this would be partially mitigated by maintaining 70 acres of the site as park, the improving recreational resources within southern Anacostia Park, and preserving the continuity of the parkland stretching the along the Anacostia River north from the Frederick Douglass Bridge. There could further be adverse impacts to the McMillan Plan due to the obstruction of views of the edge of the topographic bowl due to the development at Poplar Point. However, there could be minor long-term positive impacts to the McMillan Plan, as Poplar Point would be reconnected to historic Anacostia and could better serve as a community park, as the McMillan Commission intended.

Fort McNair and the National War College

Similar to Alternative 1, under Alternative 2 there would be no direct impacts to Fort McNair and the National War College. However, there would be indirect impacts resulting from changes to the views south and east towards Anacostia Park, the Anacostia Historic District, and the Fort Circle Parks. Under Alternative 2, large portions of the views of the edge of the topographic bowl would be obscured by the development at Poplar Point. This would result in a moderate long-term adverse impact and an adverse effect under Section 106.

East and West Potomac Parks Historic District

East Potomac Park and Hains Point lie west of Anacostia Park; there is a visual connection between the two areas along the Anacostia River. The proposed buildings at Poplar Point would appear within views from Hains Point along the river; however, the buildings would be part of the existing urban view that includes Bolling/Anacostia and the Frederick Douglass Bridge. Thus, long-term adverse impacts would be minor and there would be no adverse effect under Section 106.

Capitol Hill Historic District

There would be no direct impacts to the Capitol Hill Historic District as a result of Alternative 2. Indirect visual impacts would be negligible, as the new development at Poplar Point and within southern Anacostia Park would be obscured from the historic district by existing buildings, highway infrastructure, and vegetation. There would be no adverse effect under Section 106.

Congressional Cemetery

Like Alternative 1, Alternative 2 proposes the construction of several buildings and structures southwest of Congressional Cemetery within southern Anacostia Park, including a hangar, office space, and training facilities at North Field. Due to the limited height of the buildings within southern Anacostia Park and screening provided by existing vegetation at the cemetery, impacts are anticipated to be negligible and there would be no adverse effect under Section 106.

WASA Pumphouses (S. Capitol Street and O Street)

Alternative 2 would not result in any direct impacts on the WASA Pumphouses. It is unlikely that the new development would be visible from either of the two pumphouses. Impacts would thus be negligible and there would be no adverse effect under Section 106.

George Washington Memorial Parkway

The development of Poplar Point under Alternative 2 would not result in direct impacts to the George Washington Memorial Parkway. However, there would be indirect visual impacts, as the new buildings at Poplar Point would be visible across the Potomac River. However, they would appear within an existing urban viewshed that includes Bolling/Anacostia and development on the west side of the Anacostia River. Thus, adverse impacts would be minor and there would be no adverse effect under Section 106.

Washington National Airport

Under Alternative 2, there would be no direct impacts to Washington National Airport, however, there would be indirect visual impacts to this historic resource. Under Alternative 2, the green swath that is the park would be altered with the inclusion of a number of buildings at Poplar Point; however the foreground of the view would continue to include vegetated areas, due to the designed planting at the point. Long-term adverse impacts would thus be indirect and minor and there would be no adverse effect under Section 106.

Other Resources within the APE

Under Alternative 2, there would be no direct or indirect impacts to the Latrobe Gate, Quarters A, Quarters B, the Commandant's Office, the Syphax School, the Thomas Law House, the Duncanson Cranch House, the Edward Simon Lewis House, the Barney Hill Historic District, or Wheat Row, as none of these resources have visual connections to the project site. In addition, there would be no direct or indirect impacts to Carrollsburg Place or to the Metrobus Garage at 17 M Street, SE. There could be minor long-term adverse impacts to the PEPCO Power Plant on Buzzard Point and Bolling Air Force Base; however, there would be no adverse effect on these resources under Section 106. There could be minor to moderate indirect adverse

impacts to the Old National Capitol Pump Station and the Anacostia Freeway, and thus there could be an adverse effect under Section 106.

Cumulative Impacts

There could be moderate adverse to minor positive long-term impacts on historic buildings, structures, sites, districts, and cultural landscapes as a result of the implementation of Alternative 2. The adverse impacts to the McMillan Plan, when considered together with the loss of vegetation on the western edge of St. Elizabeths as the result of that property's redevelopment, could contribute to moderate indirect cumulative impacts to this resource. When considered together with the development at St. Elizabeths, the development at Poplar Point could also contribute to minor to moderate long-term indirect cumulative impacts to Washington National Airport, Fort McNair, the Washington Navy Yard, the Fort Circle Parks, East Potomac Park, the George Washington Memorial Parkway, and St. Elizabeths itself, due to changes in views from these historic properties.

Conclusion

The implementation of Alternative 2 would result in moderate adverse to minor positive long-term impacts to historic buildings, structures, sites, districts, and cultural landscapes. There would be an adverse effect under Section 106 on Anacostia Park due to the land transfer. In addition, there could be adverse effects to the McMillan Plan, the Washington Navy Yard, Fort McNair and the National War College, the Fort Circle Park System, Anacostia Freeway, and the Old National Capitol Pump Station under Section 106 of the National Historic Preservation Act. However, there would be no unacceptable impacts to or impairment of historic resources as a result of the implementation of Alternative 2.

Mitigation

Mitigation identified for Alternative 1 is identical to that recommended for Alternative 2 with the exception of those measures related to the Engineer's House and Anacostia Seawall. Instead, under Alternative 2, the Anacostia Seawall should be maintained and preserved. If this is not feasible, the structure should be documented in accordance with the Historic American Engineering Record (HAER) standards prior to demolition. In addition, the Engineer's House should be preserved in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

4.3.2.5 Alternative 3

Direct and Indirect Impacts

Under Alternative 3, Poplar Point would be transferred from the jurisdiction of NPS to the District of Columbia and the site would be developed with a mixture of residential, commercial, and cultural uses, as well as open space. Development would be clustered at the southeast end of the site. Recreational improvements within southern Anacostia Park, the buildings and structures for the U.S. Park Police at North Field, and the new NPS NACE Headquarters would be identical to that proposed under Alternative 1.

Anacostia Park

Alternative 3 would have direct adverse impacts on Anacostia Park, as 130 acres of the park would be transferred out of federal ownership and 60 acres of the park would be developed with commercial, residential, and cultural uses. Alternative 3 would maintain and reinvigorate 70 acres of parkland on the site, however, the green edge that currently runs along the waterfront from the Frederick Douglass Bridge north and east along the Anacostia Waterfront would be broken slightly at the proposed marina. The Anacostia Seawall would remain and the Engineer's House would be preserved. Further, the Poplar Point development could introduce a dominant light element at the edge of the park. Like Alternative 1, the development at North Field would remove a portion of the existing greenspace, but the recreational improvements within southern Anacostia Park would improve the park as a community resource, in keeping with its intended historic function. In addition, the clustering of the buildings and paved areas at North Field would still allow for expanses of open space, in keeping with the historic spatial organization of the park. While the location of the aviation facility at North Field would generate noise within this portion of the park, the facility already operates within the park on Poplar Point. The relocation of the NPS NACE Headquarters would introduce a building just south of Howard Road, but the building would be small in scale and would not interrupt the perceived open space within the park. Overall, there would be long-term moderate adverse impacts to Anacostia Park, due primarily to the transfer of the property out of federal ownership and the loss of parkland. However, there would be minor long-term positive impacts resulting from the preservation of the Engineer's House. There would also be minor short-term adverse impacts to the park due to increased noise and traffic during construction. Alternative 3 would result in an adverse effect under Section 106.

Anacostia Historic District

Under Alternative 3, as under Alternatives 1 and 2, physical and visual connections would be established between the historic district and Poplar Point along W Street, Chicago Street, and Howard Road, and the historic street grid would be reinstated along W Street. These aspects of the development would result in minor long-term positive impacts to the Anacostia Historic District. However, there could be moderate long-term adverse impacts to the district resulting from the restriction of views towards the Anacostia River, and potential noise and traffic impacts resulting from the development at Poplar Point. In addition, the development at Poplar Point could introduce a dominant light source in the area, resulting in minor long-term adverse impacts. Thus, there would be an adverse effect on the Anacostia Historic District under Section 106.

The Frederick Douglass National Historic Site (Cedar Hill)

Although there would be no direct impacts to the Frederick Douglass National Historic Site as a result of Alternative 3, there could be indirect visual impacts. Under Alternative 3, the proposed buildings at Poplar Point would be visible in views toward the Washington Monument; however they would appear at the edge of the view and would blend visually with the existing structures. The development at Poplar Point could

introduce a dominant light source in the area that could interfere with views north to the Monumental Core. The additional buildings and structures within southern Anacostia Park, including those at the North Field, would not be visible. Indirect impacts would thus be minor and would not result in an adverse effect under Section 106.

St. Elizabeths Historic District

As under Alternative 1, under Alternative 3, there would be no direct impacts to the St. Elizabeths Historic District. Although the development at Poplar Point would be visible in the foreground of views towards downtown Washington, DC, this would not diminish the integrity of the district and thus long-term adverse impacts would be minor and there would be no adverse effect under Section 106.

Civil War Fort Sites and Fort Circle Park System

The Poplar Point redevelopment and related construction within southern Anacostia Park would not directly impact the Fort Circle Park System; however the buildings at Poplar Point would appear in the foreground of views towards Washington, DC from the overlook at Fort Stanton. Further, these buildings would partially obstruct views of the Fort Circle Parks from historic properties on the west side of the Anacostia River, particularly the Washington Navy Yard, and could introduce a dominant light source in the views. Since the elevated Fort Circle Parks are intended to visually provide a consistent green edge around the city, and since the Poplar Point development would interrupt these views, it would result in a moderate adverse impact and an adverse effect under Section 106.

Suitland Parkway

Impacts to Suitland Parkway under Alternative 3 would be similar to those identified under Alternatives 1 and 2. The new development at Poplar Point would likely be visible from the north end of Suitland Parkway, however, it would be screened somewhat by the existing vegetation and infrastructure, and the north end of the parkway is already characteristically urban. Thus, while the new buildings at Poplar Point could be visible, they would not compromise the integrity of the parkway. Long-term impacts would be minor and there would be no adverse effect under Section 106.

Washington Navy Yard Historic District

Impacts to the Washington Navy Yard Historic District under Alternative 3 would be similar to those described for Alternative 1. There would be no direct impacts, but there would be indirect impacts resulting from changes in views south from the Navy Yard towards Anacostia Park, the Anacostia Historic District, and the Fort Circle Parks. Under Alternative 3, views of the edge of the topographic bowl, particularly Fort Stanton, would be partially obscured by the development at Poplar Point, resulting in a moderate adverse impact and an adverse effect under Section 106. The proposed development within southern Anacostia Park would be shielded from view by the 11th Street Bridges.

L'Enfant and McMillan Plans

Under Alternative 3, the development of approximately 60 acres of the park would result in minor to moderate long-term adverse impacts to the McMillan Plan, and thus could result in an adverse effect under Section 106. However, this would be partially mitigated by the development of 70 acres within Poplar Point

as parkland and the enhancement of southern Anacostia Park through new recreational amenities. There could further be adverse impacts to the McMillan Plan due to the obstruction of views of the edge of the topographic bowl. However, there could be minor long-term positive impacts to the McMillan Plan, as Poplar Point would be reconnected to historic Anacostia and could better serve as a community park, as the McMillan Commission intended.

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Fort McNair and the National War College

Under Alternative 3, there would be no direct impacts to Fort McNair and the National War College. However, there would be indirect impacts resulting from changes in views south and east from the installation towards Anacostia Park, the Anacostia Historic District, and the Fort Circle Parks. Under Alternative 3, large portions of the edge of the topographic bowl would be obscured. This would result in a moderate long-term adverse impact and an adverse effect under Section 106.

East and West Potomac Parks Historic District

Under Alternative 3, the proposed buildings at Poplar Point would appear within views from Hains Point along the river; however, the buildings would be part of the existing urban view that includes Bolling/Anacostia and the Frederick Douglass Bridge. Thus, long-term adverse impacts would be minor and there would be no adverse effect under Section 106.

Capitol Hill Historic District

There would be no direct impacts to the Capitol Hill Historic District as a result of Alternative 3. Indirect visual impacts would be negligible, as the new development at Poplar Point and within southern Anacostia Park would be obscured from the historic district by existing buildings, highway infrastructure, and vegetation. There would be no adverse effect under Section 106.

Congressional Cemetery

Like Alternative 1, Alternative 3 proposes the construction of several buildings and structures southwest of Congressional Cemetery within southern Anacostia Park, including a hangar, office space, and training facilities at North Field. Due to the limited height of the buildings within southern Anacostia Park and screening provided by existing vegetation at the cemetery, impacts are anticipated to be negligible and there would be no adverse effect under Section 106.

WASA Pumphouses (S. Capitol Street and O Street)

Alternative 3 would not result in any direct impacts on the WASA Pumphouses. Further, it is unlikely that the new development would be visible from either of the two pumphouses. Impacts would thus be negligible and there would be no adverse effect under Section 106.

George Washington Memorial Parkway

Under Alternative 3 there would be indirect visual impacts on the George Washington Memorial Parkway, as the new buildings at Poplar Point would be visible across the Potomac River. The development would, however, appear within an existing urban viewshed that includes Bolling/Anacostia and development on the west side of the Anacostia River. Thus, adverse impacts would be minor and there would be no adverse effect under Section 106.

Washington National Airport

Alternative 3 would result in indirect visual impacts on Washington National Airport, as the parkland would be altered with the inclusion of the new buildings at Poplar Point. However the foreground of the view

would continue to include vegetated space, due to the designed planting of the point. Long-term adverse impacts would thus be indirect and minor and there would be no adverse effect under Section 106.

Other Resources within the APE

Under Alternative 3, there would be no direct or indirect impacts to the Latrobe Gate, Quarters A, Quarters B, the Commandant's Office, the Syphax School, the Thomas Law House, the Duncanson Cranch House, the Edward Simon Lewis House, the Barney Circle Historic District, or Wheat Row, as none of these resources have visual connections to the project site. In addition, there would be no direct or indirect impacts to Carrollsburg Place or to the Metrobus Garage at 17 M Street, SE. There could be minor long-term adverse impacts to the PEPCO Power Plant on Buzzard Point, and Bolling Air Force Base; however, there would be no adverse effect on these resources under Section 106. There could be minor to moderate long-term indirect adverse impacts to the Old National Capital Pump Station and the Anacostia Freeway, and thus there could be an adverse effect on these resources under Section 106.

Cumulative Impacts

There could be moderate adverse to minor positive long-term impacts on historic buildings, structures, sites, districts, and cultural landscapes as a result of the implementation of Alternative 3. The adverse impacts to the McMillan Plan, when considered together with the loss of vegetation on the western edge of St. Elizabeths as the result of that property's redevelopment, could contribute to moderate indirect cumulative impacts to the this resource. When considered together with the development at St. Elizabeths, the development at Poplar Point could also contribute to minor to moderate long-term indirect cumulative impacts to Washington National Airport, Fort McNair, the Washington Navy Yard, the Fort Circle Parks, East Potomac Park, the George Washington Memorial Parkway, and St. Elizabeths itself, due to changes in views from these historic properties.

Conclusion

The implementation of Alternative 3 would result in moderate adverse to minor positive long-term impacts to historic buildings, structures, sites, districts, and cultural landscapes. There would be an adverse effect under Section 106 on Anacostia Park due to the land transfer. In addition, there could be adverse effects to the McMillan Plan, the Washington Navy Yard, Fort McNair and the National War College, the Fort Circle Park System, Anacostia Freeway, and the Old National Capitol Pump Station under Section 106 of the National Historic Preservation Act. However, there would be no unacceptable impacts to or impairment of historic resources as a result of the implementation of Alternative 3.

Mitigation

Mitigation identified for Alternative 1 is identical to that recommended for Alternative 3 with the exception of those measures related to the Engineer's House and Anacostia Seawall. Instead, under Alternative 3, the Anacostia Seawall and Engineer's House should be preserved in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

4.3.4 Visual Resources

4.3.4.1 Methodology and Assumptions

Analysis Methods

While discussion of visual resources within the Affected Environment chapter focused on the visual character of the Project Area and surrounding areas, the impacts analysis that follows examines changes to the visual character of the site, as well as impacts to key viewsheds.

In order to determine the potential visual impacts resulting from the action alternatives, digital 3-dimensional (3-D) models of each of the alternatives were developed to aid in the visual analysis. These models were then placed within a digital 3-D model of the city to determine the potential visibility of the development under each of the action alternatives from key public viewpoints. These viewpoints included the U.S. Capitol Building, the Washington Monument, the White House, and the Lincoln Memorial within the Monumental Core; the Washington Navy Yard, Capitol Hill, the Frederick Douglass Bridge, Barney Circle, and Hains Point/East Potomac Park on the west side of the Anacostia River; Fort Stanton, the Frederick Douglass National Historic Site (Cedar Hill), Historic Anacostia, the Anacostia Park Fieldhouse, and St. Elizabeths within Anacostia; and Washington National Airport directly across the Potomac River in Arlington, Virginia. All of these points lie within the primary area of visual influence as discussed in Chapter 3. In addition to these viewpoints, additional points located outside of this primary area were considered due to their topography and the potential for the proposed development to be visible. These include Arlington House, the Iwo Jima Memorial, Mount Hamilton, and the McMillan Reservoir. The viewpoints considered are shown in Figure 4.3.1.

While each of the viewpoints above is discussed in the analysis that follows, key viewpoints were identified for more detailed analysis (shown in red in Figure 4.3.1). The viewpoints chosen for more detailed analysis represent views from important public sites such as historic properties and open spaces; they were chosen because of the potential for impacts to these views. In addition, the existing quality of the view, the sensitivity of the view (such as important views from historic and cultural sites), and the anticipated relationship of the proposed design elements to the existing visual environment were considered.

Views towards the Project Area from the identified viewpoints were photographed using a 35 mm digital Single Lens Reflex camera. The precise location of each viewpoint was identified through a global positioning system (GPS) within the camera. Visual simulations were then developed from each of these points, with the proposed buildings depicted in yellow.

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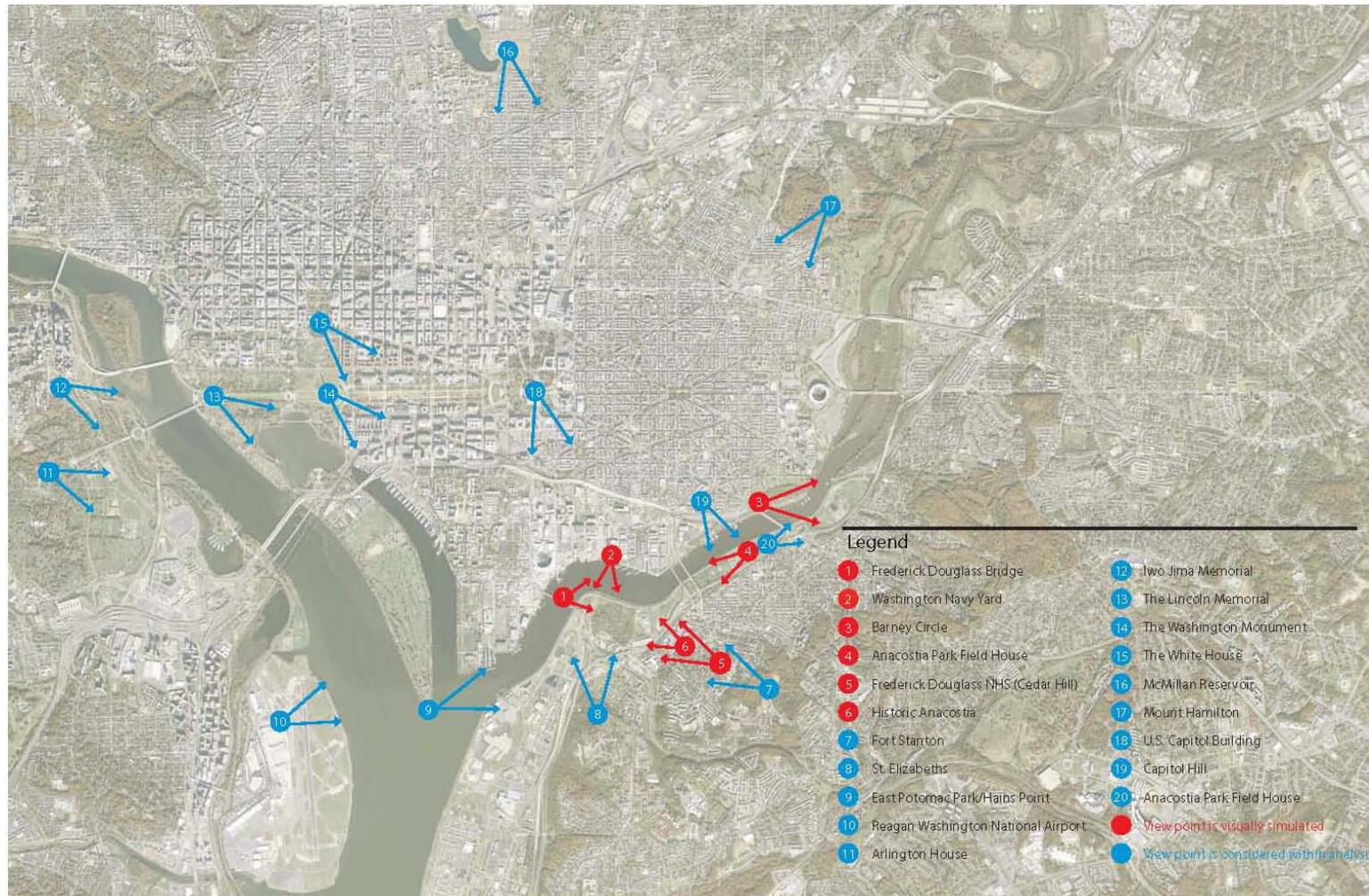


Figure 4.3.1: Viewpoint Location Map
 Source: AECOM, 2010

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Assumptions

Impacts to visual resources are generally localized in nature. Any regional impacts are identified as such within the analysis. Impacts to visual resources may be less severe during the summer months due to screening from vegetation.

Thresholds

Thresholds were defined to identify the severity of potential impacts resulting from the proposed alternatives. The degree of visual change is measured by thresholds defining the existing character of the landscape in view, the relationship of the project site to the land around it, and the type of visual changes that would occur in the viewshed as a result of the project. These thresholds are as follows:

Negligible: The proposed project would not be visible from the representative viewpoint, or visual changes are so subtle as to be undetectable.

Minor: The proposed project would be visible as a background element in a view that includes buildings or other site features of similar mass and scale. The project would not interfere with views from the representative viewpoint and would not alter the character of the existing views.

Moderate: The proposed project would be visible as part of a view that includes buildings or site features of similar mass and scale and interferes with views from the representative viewpoint without changing the existing viewshed character.

Major: The proposed project features would be visible and would contrast with or dominate the existing site features, interfering with views from the representative viewpoint and substantially changing the character of the existing viewshed.

Duration

For the purposes of this analysis, short-term impacts are associated with construction activities at the project site. Long-term impacts persist beyond construction.

4.3.4.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, the land transfer would not occur and Poplar Point would not be redeveloped. In addition, the NPS NACE Headquarters and the U.S. Park Police Aviation Facility would not be relocated, and recreational improvements would not occur within southern Anacostia Park. Thus, there would be no direct or indirect impacts to visual resources.

Cumulative Impacts

Under the No Action Alternative, the land transfer would not occur and Poplar Point would not be redeveloped. In addition, the NPS NACE Headquarters and the U.S. Park Police Aviation Facility would not be

relocated, and recreational improvements would not occur within southern Anacostia Park. There would be no cumulative impacts to visual resources as a result of the No Action alternative.

Conclusion

There would be no direct, indirect, or cumulative impacts resulting from the No Action Alternative. In addition, there would be no unacceptable impacts to or impairment of visual resources.

4.3.4.3 Alternative 1

Direct and Indirect Impacts

The following discussion evaluates the potential impacts of the proposed development within the Project Area under Alternative 1 on the visual quality of the site and key viewsheds.

Project Area

Under Alternative 1, the visual quality of the site would improve. Many of the existing buildings and structures on Poplar Point, including the abandoned nursery buildings, would be removed. In their place, a vibrant mixed-use development would be constructed with building heights ranging from one to nine stories. The new development at Poplar Point would highlight the amenities of the site, including preserving the existing wetlands and enhancing the waterfront through the construction of promenades, plazas and an observation tower to provide visitors with panoramic views of the Monumental Core and the Anacostia River. A signature cultural destination located on the point itself would be a key visual feature of the development.

North and east of Poplar Point, the proposed recreational improvements within southern Anacostia Park, including new multi-purpose fields, picnic pavilions, and play areas, would further enhance the visual quality of the site. While the development at North Field would replace open fields with a hangar, helipad, and new building, a vegetated screen at the east end of this development would shield these features from view from points to the east. In addition, this development would be clustered, still allowing for expanses of open space. The new NPS NACE Headquarters would be small in scale and would not interrupt the perceived open space within the park.

Overall, long-term moderate positive impacts to visual resources within the Project Area would result from the implementation of Alternative 1.

Key Viewpoints within Anacostia

Frederick Douglass National Historic Site (Cedar Hill)

From its elevated location, the Frederick Douglass National Historic Site provides panoramic views of Historic Anacostia in the foreground and the Anacostia River and Monumental Core in the distance (see the existing view in Figure 4.3.2). Under Alternative 1, these views would be altered with the inclusion of the new buildings at Poplar Point (see the simulated view in Figure 4.3.2). These buildings would not obstruct views of Historic Anacostia and the Monumental Core, but would partially obscure portions of the river, resulting in a long-term moderate adverse impact on this viewshed.

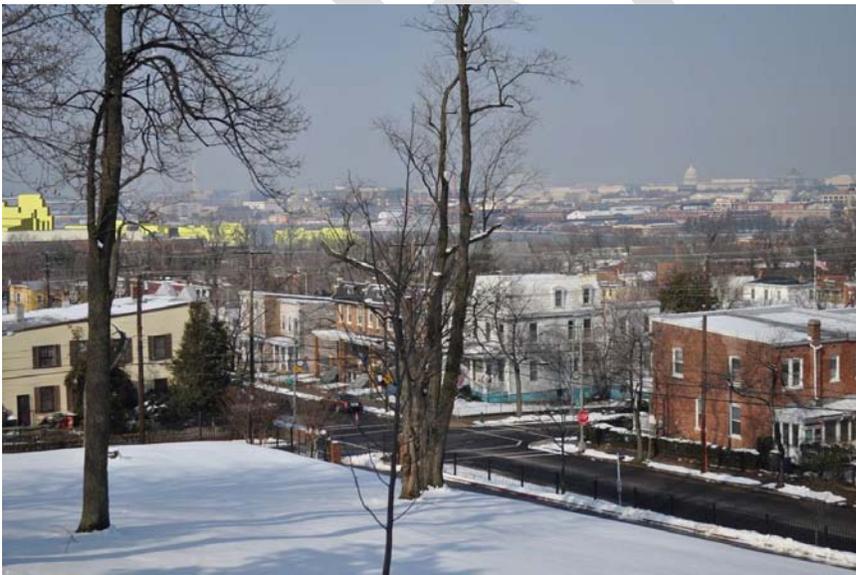


Figure 4.3.2

Alternative 1: View from the Frederick Douglass National Historic Site

Source: AECOM 2010

Historic Anacostia (Martin Luther King, Jr. Avenue at W Street)

Due to dense development within Historic Anacostia, views towards Poplar Point from this area are limited. However, the proposed development would be visible at Martin Luther King, Jr. Avenue looking south along W Street. The existing view (illustrated in the existing view in Figure 4.3.3) is framed by a five-story building on the west side of the street and a lower scale warehouse structure on the east side of the roadway. The open parkland at Poplar Point and the river beyond are visible in the center of the view. Under Alternative 1, the view corridor would be maintained along W Street towards the river (see the simulated view in Figure 4.3.3). The new multi-story structures at Poplar Point would narrow the existing view, partially obscuring the Anacostia River, but the character of the existing view that combines both urban multi-story urban buildings in the foreground and open space in the distance, would not change. Overall there would be long-term moderate adverse impacts to this viewshed.



Figure 4.3.3

Alternative 1: View from Martin Luther King, Jr. Avenue at W Street

Source: AECOM 2010

Anacostia Fieldhouse

Views west from the Anacostia Fieldhouse (see existing view in Figure 4.3.4) currently include an open expanse of parkland with a line of trees and the 11th Street Bridges in the distance. Under Alternative 1, the new buildings at Poplar Point would be visible under the bridge infrastructure, but would not obscure the view or alter its character (see simulated view in Figure 4.3.4). Overall, there would be long-term minor adverse impacts to this view. Looking northeast from the Anacostia Fieldhouse, the Sousa Bridge would obstruct views of the new buildings at the North Field.



Figure 4.3.4

Alternative 1: View from the Anacostia Fieldhouse

Source: AECOM 2010

St. Elizabeths

Due to its high elevation, St. Elizabeths affords panoramic views of Historic Anacostia and the distant Monumental Core. Under Alternative 1, the new structures at Poplar Point would be visible in the foreground of the view, but would not obstruct the view or alter its largely urban character. Thus, long-term adverse impacts would be minor.

Fort Stanton

Due to its elevated position, the overlook at Fort Stanton provides visitors with panoramic views of Historic Anacostia in the foreground and the Monumental Core in the distance. Under Alternative 1, the new structures at Poplar Point would be visible in the foreground of the view during daytime hours, but would not obstruct the view or alter its character. However, night views from Fort Stanton could be substantively altered due to the light emitted from the proposed development. This could detract from distant views of the Monumental Core. Overall, long-term adverse impacts would be minor to moderate.

Key Viewpoints on the West Side of the Anacostia River

Washington Navy Yard

Views south from the Navy Yard (see existing view in Figure 4.3.5) are currently dominated by the Anacostia River and a line of trees that borders the water's edge within Anacostia Park. The Anacostia Highlands appear in the distance. Under Alternative 1, the new buildings at Poplar Point would dominate the existing site features, obstructing views of the Anacostia Highlands and substantially altering the character of the viewshed (see simulated view in Figure 4.3.5). The buildings at North Field would be obscured by the 11th Street Bridges. Long-term adverse impacts to views from the Washington Navy Yard would be major.



Figure 4.3.5

Alternative 1: View from the West Edge of the Washington Navy Yard

Source: AECOM 2010

Frederick Douglass Bridge

The Frederick Douglass Bridge affords views to the west of the Anacostia River and the minimally sloping green space and roadways of Poplar Point (see existing view in Figure 4.3.6). In the background, the Washington Navy Yard, the 11th Street Bridges, and the Anacostia Highlands are visible. Under Alternative 1, the new development would dominate the existing site features (see simulated view in Figure 4.3.6). Although the Washington Navy Yard would still be visible, Alternative 1 would obstruct views of the Anacostia Highlands and a portion of the 11th Street Bridges, altering the character of the views. Long-term adverse impacts to views from the Frederick Douglass Bridge would thus be major.

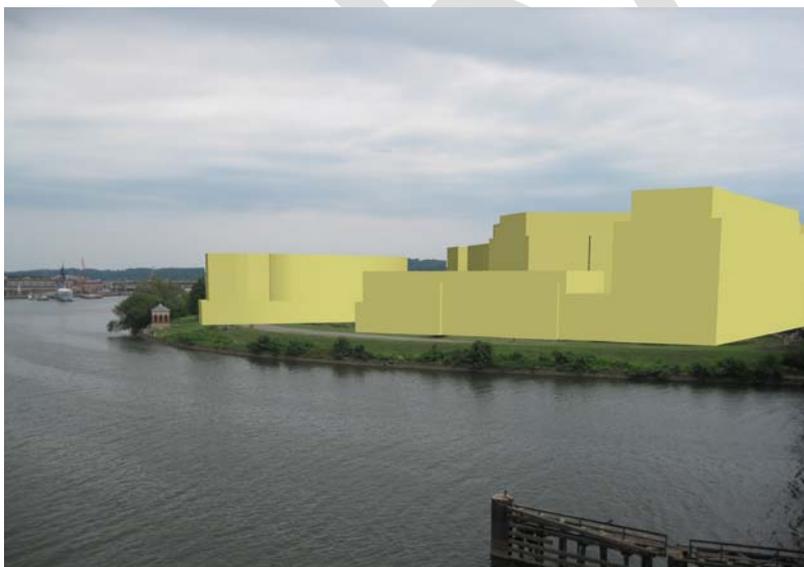


Figure 4.3.6

Alternative 1: View west from the Frederick Douglass Bridge

Source: AECOM 2010

Barney Circle

Looking east from Barney Circle, the existing views are of railroad tracks, a trail (the elevated portion of which is under construction), and a yacht club, including its associated buildings; east of the river the view includes Anacostia Park and the Anacostia Highlands in the background (see existing view in Figure 4.3.7). Under Alternative 1, a portion of one of the buildings proposed at North Field would be visible at the edge of the view (see simulated view in Figure 4.3.7). While it would introduce a new element into the existing view, the view currently includes buildings, and roadway and railway infrastructure. Thus, long-term adverse impacts to the view would be minor.



Figure 4-7

Alternative 1: View east from Barney Circle

Source: AECOM 2010

Hains Point/East Potomac Park

The Project Area, specifically Poplar Point, is apparent in views east along the Anacostia River from Hains Point. Under Alternative 1, the new buildings at Poplar Point would be evident within these views; however, they would appear as part of an existing urban viewshed that includes the Frederick Douglass Bridge and Bolling/Anacostia. Night views would also be altered, as the Poplar Point waterfront would no longer appear dark. Overall, there would be long-term minor adverse impacts to these views resulting from the implementation of Alternative 1.

Key Viewpoints within the Monumental Core

Capitol Hill

The development at Poplar Point and within southern Anacostia Park under Alternative 1 would not be visible from southeast corner of Capitol Hill at 13th and L Streets, SE. As elsewhere within Capitol Hill, the new development would be obscured by buildings, highway infrastructure, and vegetation. Long-term impacts to these views would thus be negligible.

U.S. Capitol Building

The development at Poplar Point would potentially be visible from the elevated terrace on the south side of the U.S. Capitol Building, however, the structures would be barely discernible within the existing urban fabric. Long-term impacts to views from the U.S. Capitol Building would thus be negligible.

The Washington Monument

The development at Poplar Point and within southern Anacostia Park under Alternative 1 would not be visible from the Washington Monument. Long-term impacts to this view would thus be negligible.

The White House

The development at Poplar Point and within southern Anacostia Park under Alternative 1 would not be visible from the White House. Long-term impacts to this view would thus be negligible.

Lincoln Memorial

The development at Poplar Point and within southern Anacostia Park under Alternative 1 would not be visible from the Lincoln Memorial. Long-term impacts to this view would thus be negligible.

West of the Potomac River

Washington National Airport

Views from the old terminal building at National Airport across the Potomac River currently include Poplar Point and the Anacostia River in the distance. Under Alternative 1, the new structures on the point would partially obscure distant views of the Anacostia River. Night views could be impacted slightly, however, Bolling/Anacostia, the Frederick Douglass Bridge, and the Washington Navy Yard are all existing light sources that are visible within this view. Long-term adverse impacts would be minor to moderate.

Distant Viewpoints

The McMillan Reservoir: The development at Poplar Point and southern Anacostia Park under Alternative 1 would not be visible from the McMillan Reservoir. Impacts to this viewshed would thus be negligible.

Mount Hamilton The development at Poplar Point and within southern Anacostia Park under Alternative 1 would not be visible from Mount Hamilton. Impacts to this viewshed would thus be negligible.

Iwo Jima Memorial: The development at Poplar Point and within southern Anacostia Park under Alternative 1 would not be visible from the Iwo Jima Memorial. Impacts to this viewshed would thus be negligible.

Arlington House: The development at Poplar Point under Alternative 1 would be evident in views from Arlington House but would blend with the existing urban viewshed. The development would not obstruct the views or alter their character. Thus, long-term adverse impacts would be minor.

Cumulative Impacts

The proposed redevelopment of Poplar Point, the relocation of the U.S. Park Police Headquarters and Aviation Facility, the relocation of the NPS NACE Headquarters, and the recreational improvements within southern Anacostia Park, when considered together with the improvements at the Frederick Douglass and 11th Street Bridges, could contribute to a positive cumulative impact to views within the site. Depending on the height and alignment of the 11th Street Bridge and its infrastructure, the development at Poplar Point may be more or less visible from the Anacostia Fieldhouse. When considered together with the development at St. Elizabeths, the Poplar Point development could contribute to moderate long-term adverse cumulative impacts to views from the west sides of the Anacostia and Potomac Rivers, as well as from St. Elizabeths itself.

Conclusion and Impairment Finding

There could be major adverse to moderate positive impacts to visual resources resulting from the implementation of Alternative 1. These impacts would not result in unacceptable impacts or in an impairment of park resources.

Mitigation

The following possible mitigation measures for the adverse impacts identified above include:

- Reinforce the visual connections between Historic Anacostia and Poplar Point through consistent streetscape treatment;
- Widen the view corridor along W Street through the site to preserve views of the Anacostia River;
- Ensure that the final design maintains greenspace on the waterfront to ensure visual continuity along the east side of the Anacostia River between the Frederick Douglass Bridge and the Maryland state line; and
- Utilize glazing that minimizes light loss and night glare.

4.3.4.4 Alternative 2

Direct and Indirect Impacts

The following discussion evaluates the potential impacts of the development of the Project Area under Alternative 2 on the visual quality of the site and on key viewsheds.

Project Area

Under Alternative 2, the visual quality of the Project Area would improve. Many of the existing buildings and structures on Poplar Point, including the abandoned nursery buildings, would be removed. In their place, a vibrant mixed-use development would be installed. The building heights would vary, from one to approximately nine stories, with taller buildings clustered at the south end of Poplar Point. The waterfront would be enhanced with improvements such as a riverfront observation deck, a commemorative site, a waterfront overlook, and an extension of Main Street to the river. Additional features may include a constructed wetlands habitat, an urban greenway, and a signature museum. The point would remain as open space, allowing panoramic views along the Anacostia River.

North and east of Poplar Point, the proposed recreational improvements within southern Anacostia Park, including new multi-purpose fields, picnic pavilions, and play areas, would further enhance the visual quality of the site. While the development at North Field would replace open fields with a hangar, helipad, and new building, a vegetated screen at the east end of this development would shield these features from view from points to the east. In addition, this development would be clustered, still allowing for expanses of open space. The new NPS NACE Headquarters would be small in scale and would not interrupt the perceived open space within the park.

Overall, long-term moderate positive impacts to visual resources on the site would result from the implementation of Alternative 2.

Key Viewpoints within Anacostia

Frederick Douglass National Historic Site (Cedar Hill)

From its elevated location, the Frederick Douglass National Historic Site affords panoramic views of Historic Anacostia in the foreground and of the Monumental Core in the distance (see existing view in Figure 4.3.8). Under Alternative 2, the proposed buildings at Poplar Point would not be visible and thus there would be no change to the view that includes the Washington Monument and U.S. Capitol Building (see simulated view in Figure 4.3.8). Thus, long-term impacts would be negligible.



Figure 4.3.8

Alternative 2: View from the Frederick Douglass National Historic Site

Source: AECOM 2010

Historic Anacostia (Martin Luther King, Jr. Avenue at W Street)

Due to dense development within Historic Anacostia, views of Poplar Point are limited. However, the proposed development would be visible at Martin Luther King Jr. Avenue looking south along W Street. The existing view (illustrated in Figure 4.3.9) is framed by a five-story building on the west side of the street and a lower scale warehouse structure on the east side of the roadway. The open parkland at Poplar Point and the river beyond are visible in the center of the view. Under Alternative 2, the view corridor would be maintained along W Street towards the river, and the proposed buildings would replace the Metro Parking garage along the southeast side of the view in the middle distance (see simulated view in Figure 4.3.9). Overall there would be long-term minor adverse impacts to this viewshed.



Figure 4.3.9

Alternative 2: View from Martin Luther King Jr. Avenue at W Street (with visual simulation)

Source: AECOM 2010

Anacostia Fieldhouse

Views west from the Anacostia Fieldhouse (see existing view in Figure 4.3.10) currently include an open expanse of parkland with a line of trees and the 11th Street Bridges in the distance. Under Alternative 2, the proposed buildings at Poplar Point would be visible under the bridge infrastructure, but would not obscure the view or alter its character (see simulated view in Figure 4.3.10). Overall, there would be long-term minor adverse impacts to this viewshed. Looking northeast from the Anacostia Fieldhouse, the Sousa Bridge would obstruct views of the new buildings at the North Field.



Figure 4.3.10
Alternative 2: View from the Anacostia Fieldhouse
Source: AECOM 2010

St. Elizabeths

Due to its high elevation, St. Elizabeths affords panoramic views of Historic Anacostia in the foreground and of the Monumental Core in the distance. Under Alternative 2, the buildings proposed at Poplar Point would be visible in the foreground of the view, but would not obstruct the view or alter its largely urban character. Thus, long-term adverse impacts would be minor.

Fort Stanton

Due to its elevated position, the overlook at Fort Stanton provides visitors with panoramic views of Historic Anacostia in the foreground and the Monumental Core in the distance. Under Alternative 2, the new buildings at Poplar Point would be visible in the foreground of the view during daytime hours, but would not obstruct the view or alter its character. However, night views from Fort Stanton could be substantively altered due to the light emitted from the proposed Poplar Point development. This could detract from distant views of the Monumental Core. Overall, long-term adverse impacts would be minor to moderate.

Key Viewpoints on the West Side of the Anacostia River

Washington Navy Yard

Views south from the Navy Yard (see existing view in Figure 4.3.11) are currently dominated by the Anacostia River and a line of trees that border the water's edge within Anacostia Park. The Anacostia Highlands appear in the distance. Under Alternative 2, the buildings at Poplar Point would introduce a contrasting or dominant element to the east side of the viewshed, interfering with views of the Anacostia Highlands, and changing the character of the viewshed (see simulated view in Figure 4.3.11). The buildings at North Field would be obscured by the 11th Street Bridges. Long-term adverse impacts to views from the Washington Navy Yard would thus be moderate to major.

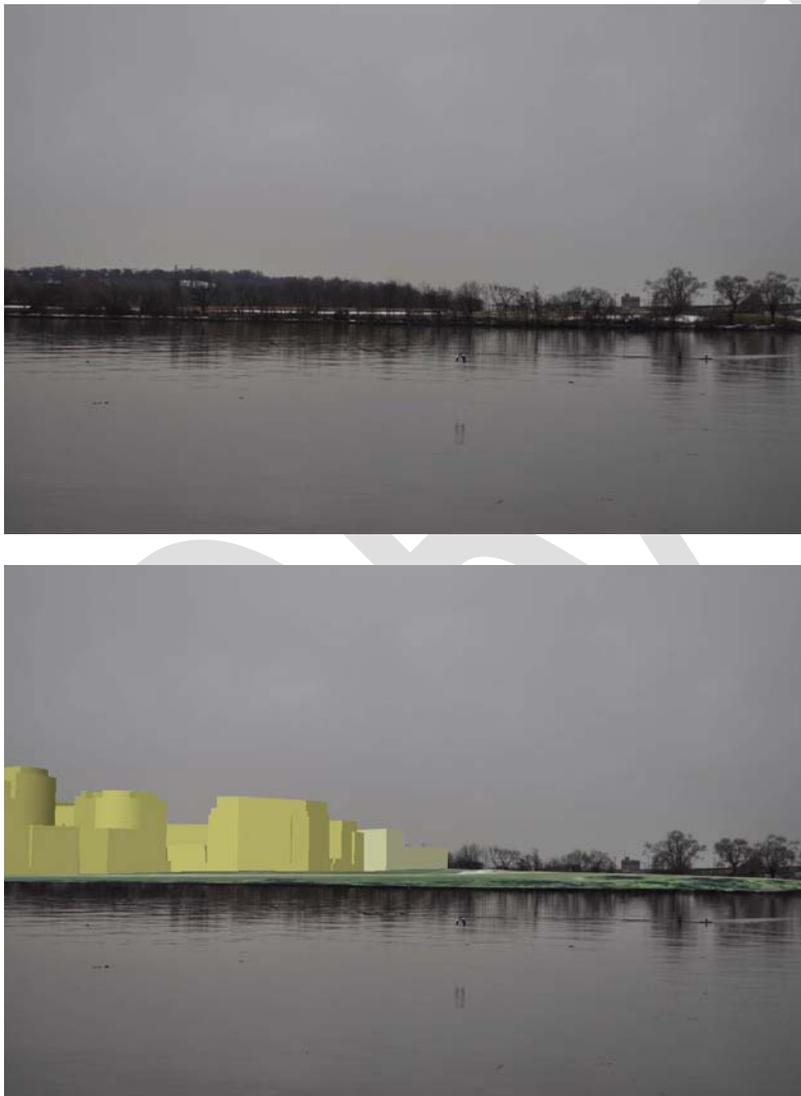


Figure 4.3.11

Alternative 2: View from the West Edge of the Washington Navy Yard

Source: AECOM 2010

Frederick Douglass Bridge:

The Frederick Douglass Bridge affords views to the west of the Anacostia River and the minimally sloping green space and roadways of Poplar Point (see existing view in Figure 4.3.12). In the background, the Washington Navy Yard, the 11th Street Bridges, and the Anacostia Highlands are visible. Under Alternative 2, the buildings would introduce a contrasting or dominant element, interfering with some views of the Anacostia Highlands and changing the character of the viewshed (see simulated view in Figure 4.3.12). Long-term adverse impacts to views from the Frederick Douglass Bridge would thus be moderate to major.



Figure 4.3.12

Alternative 2: View west from Frederick Douglass Bridge

Source: AECOM 2010

Barney Circle:

Under Alternative 2, like Alternative 1, new development at Anacostia Park would be visible at the edge of the view, but would not obstruct the view or alter its character (see simulated view in Figure 4.3.7). Therefore, long-term adverse impacts would be minor.

Hains Point/East Potomac Park

Poplar Point is apparent in views east along the Anacostia River from Hains Point. Under Alternative 2, the new buildings at Poplar Point would be evident within these views; however, they would appear to be part of the existing urban viewshed that includes Bolling/Anacostia and the Frederick Douglass Bridge. Night views would also be altered, as the Poplar Point waterfront would no longer appear dark. Overall, there would be long-term minor adverse impacts resulting from the implementation of Alternative 2.

Key Viewpoints within the Monumental Core*Capitol Hill*

The development at Poplar Point and within southern Anacostia Park under Alternative 2 would not be visible from southeast corner of Capitol Hill at 13th and L Streets, SE. As elsewhere within Capitol Hill, the new development would be obscured by buildings, highway infrastructure, and vegetation. Long-term impacts to these views would thus be negligible.

U.S. Capitol Building

The development at Poplar Point could potentially be visible from the elevated terrace on the south side of the US Capitol Building, however, the structures would be barely discernible within the existing urban fabric. Long-term impacts to views from the U.S. Capitol Building would thus be negligible.

The Washington Monument

The development at Poplar Point and within southern Anacostia Park under Alternative 2 would not be visible from the Washington Monument. Long-term impacts to this viewshed would thus be negligible.

The White House

The development at Poplar Point and within southern Anacostia Park under Alternative 2 would not be visible from the White House. Long-term impacts to this viewshed would thus be negligible.

Lincoln Memorial

The development at Poplar Point and within southern Anacostia Park under Alternative 2 would not be visible from the Lincoln Memorial. Long-term impacts to this viewshed would thus be negligible.

West of the Potomac River

Washington National Airport

Views from the old terminal building at National Airport across the Potomac River currently include Poplar Point and the Anacostia River in the distance. Under Alternative 2, the parkland on the point would continue to be visible, with the proposed buildings visible further behind. Night views could be impacted slightly, however, Bolling/Anacostia, the Frederick Douglass Bridge, and the Washington Navy Yard are all existing light sources within this view. Long-term adverse impacts to views from National Airport would be minor.

Distant Viewpoints

The McMillan Reservoir

The development at Poplar Point and within southern Anacostia Park under Alternative 2 would not be visible from the McMillan Reservoir. Long-term impacts to this view would thus be negligible.

Mount Hamilton

The development at Poplar Point under Alternative 2 could be slightly visible from Mount Hamilton, however, the new buildings would not obstruct the view or alter its character. Long-term impacts would thus be negligible to minor adverse.

Iwo Jima Memorial

The development at Poplar Point and within southern Anacostia Park under Alternative 2 would not be visible from the Iwo Jima Memorial. Long-term impacts to this viewshed would thus be negligible.

Arlington House

The development at Poplar Point under Alternative 2 would be evident in views from Arlington House but would not obstruct the view or alter its character. Thus, long-term adverse impacts would be minor.

Cumulative Impacts

The proposed redevelopment of Poplar Point, the relocation of the U.S. Park Police Headquarters and Aviation Facility, the relocation of the NPS NACE headquarters, and the recreational improvements within southern Anacostia Park, when considered together with the improvements at the Frederick Douglass and 11th Street Bridges, could contribute to a positive cumulative impact to views within the site. Depending on the height and alignment of the 11th Street Bridge and its infrastructure, the development at Poplar Point may be more or less visible from the Anacostia Fieldhouse. When considered together with the development at St. Elizabeths, the Poplar Point development could contribute to moderate long-term adverse cumulative

impacts to views from the west sides of the Anacostia and Potomac Rivers, as well as from St. Elizabeths itself.

Conclusion and Impairment Finding

Under Alternative 2, long-term impacts could range from moderate to major adverse, to moderate positive. The implementation of Alternative 2 would not result in unacceptable impacts or an impairment of park resources.

Mitigation

Mitigation measures are identical to those identified for Alternative 1.

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4.3.4.5 Alternative 3

Direct and Indirect Impacts

The following discussion evaluates the potential impacts of the development of the Project Area under Alternative 3 on the visual quality of the site and key viewsheds.

Project Area

Under Alternative 3, the visual quality of the Project Area would improve. Many of the existing buildings and structures on Poplar Point, with the exception of the Engineer's House, would be removed. In their place, a vibrant mixed-use development would be installed. The building heights would vary, from one to approximately nine stories, with buildings clustered at the east end of the site. The waterfront would be enhanced with improvements such as a marina, a pier, a waterfront park, and a waterfront promenade. Other key features include constructed wetlands, a community park, and commemorative sites. The point would remain as park land, allowing for panoramic views along the Anacostia River.

North and east of Poplar Point, the proposed recreational improvements within southern Anacostia Park, including new multi-purpose fields, picnic pavilions, and play areas, would further enhance the visual quality of the site. While the development at North Field would replace open fields with a hangar, helipad, and new building, a vegetated screen at the east end of this development would shield these features from view from points to the east. In addition, this development would be clustered, still allowing for expanses of open space. The new NPS NACE Headquarters would be small in scale and would not interrupt the perceived open space within the park.

Overall, long-term moderate positive impacts to visual resources on the site would result from the implementation of Alternative 3.

Key Viewpoints within Anacostia

Frederick Douglass National Historic Site (Cedar Hill)

From its elevated location, the Frederick Douglass National Historic Site affords panoramic views of Historic Anacostia in the foreground and of the Monumental Core in the distance (see existing view in Figure 4.3.13). Under Alternative 3, the proposed buildings would be barely noticeable, effectively blending within the existing urban viewshed (see simulated view in Figure 4.3.13). Thus, long-term impacts would be negligible.



Figure 4.3.13

Alternative 3: View from the Frederick Douglass National Historic Site

Source: AECOM 2010

Historic Anacostia (Martin Luther King, Jr. Avenue at W Street)

Due to dense development within Historic Anacostia, views of Poplar Point are limited. However, the proposed development at Poplar Point would be visible at Martin Luther King, Jr. Avenue looking south along W Street. The existing view (illustrated in existing view in Figure 4.3.14) is framed by a five-story building on the west side of the street and a lower scale warehouse structure on the east side of the roadway. The open parkland at Poplar Point and the river beyond are visible in the center of the view. Under Alternative 3, the view corridor would be maintained along W Street towards the river (see simulated view in Figure 4.3.14). The new multi-story structures at Poplar Point would narrow the existing view, partially obscuring the Anacostia River, but the character of the existing view that combines both multi-story urban buildings in the foreground and open space in the distance, would not change. Overall, there would be long-term moderate adverse impacts to this viewshed.



Figure 4.3.14

Alternative 3: View from Martin Luther King, Jr. Avenue at W Street

Source: AECOM 2010

Anacostia Fieldhouse

Views west from the Anacostia Fieldhouse (see existing view in Figure 4.3.15) currently include an open expanse of parkland with a line of trees and the 11th Street Bridges in the distance. Under Alternative 3, the new buildings at Poplar Point would be visible under the bridge infrastructure, but would not obscure the view or alter its character (see simulated view in Figure 4.3.15). Overall, there would be long-term minor adverse impacts to this view. Looking northeast from the Anacostia Fieldhouse, the Sousa Bridge would obstruct views of the new buildings at the North Field.



Figure 4.3.15

Alternative 3: View from the Anacostia Fieldhouse

Source: AECOM 2010

St. Elizabeths

Due to its high elevation, St. Elizabeths affords panoramic views of Historic Anacostia in the foreground and of the Monumental Core in the distance. Under Alternative 3, the new buildings at Poplar Point would be visible in the foreground of the view towards the U.S. Capitol Building, but would not obstruct the view or alter its largely urban character. Thus, long-term adverse impacts would be minor.

Fort Stanton

Due to its high elevation, the overlook at Fort Stanton provides visitors with panoramic views of Historic Anacostia in the foreground and the Monumental Core in the distance. Under Alternative 3, the new structures at Poplar Point would be visible in the foreground of the view during daytime hours, but would not obstruct the view or alter its character. However, night views from Fort Stanton could be substantively altered due to the light emitted from the proposed development. This could detract from distant views of the Monumental Core. Overall, long-term impacts would be minor to moderate.

Key Viewpoints on the West Side of the Anacostia River

Washington Navy Yard

Views south from the Navy Yard (see existing view in Figure 4.3.16) are currently dominated by the Anacostia River and a line of trees that border the edge of the water in Anacostia Park. The Anacostia Highlands appear in the distance. Under Alternative 3, the development at Poplar Point would introduce a contrasting element thereby altering the character of the viewshed. In addition, it would partially obstruct distant views of the Anacostia Highlands (see simulated view in Figure 4.3.16). The buildings at North Field would be obscured by the 11th Street Bridges. Long-term adverse impacts to views from the Washington Navy Yard would thus be moderate to major.



Figure 4.3.16

Alternative 3: View from the West Edge of the Washington Navy Yard

Source: AECOM 2010

Frederick Douglass Bridge

The Frederick Douglass Bridge affords views to the west of the Anacostia River and the minimally sloping green space and roadways of Poplar Point (see existing view in Figure 4.3.17). In the background, the Navy Yard, the 11th Street Bridges, and the Anacostia Highlands are visible. Under Alternative 3, the buildings would introduce a contrasting or dominant element, interfering with a portion of the view and changing its character (see simulated view in Figure 4.3.17). Long-term adverse impacts to views from the Frederick Douglass Bridge would thus be moderate to major.



Figure 4.3.17

Alternative 3: View west from the Frederick Douglass Bridge

Source: AECOM 2010

Barney Circle

Under Alternative 3, like Alternatives 1 and 2, new development at Anacostia Park would be visible at the edge of the view, but would not obstruct the view or alter its character (see simulated view in Figure 4.3.7). Therefore, long-term adverse impacts would be minor.

Hains Point/East Potomac Park

Poplar Point is visible in views east along the Anacostia River from Hains Point. Under Alternative 3, the new buildings at Poplar Point would be evident within these views; however, they would appear as part of the existing urban viewshed that includes Bolling/Anacostia and the Frederick Douglass Bridge. Night views would also be altered, as the Poplar Point waterfront would no longer appear dark. Overall, there would be long-term minor adverse impacts resulting from the implementation of Alternative 3.

Key Viewpoints within the Monumental Core

Capitol Hill

The development at Poplar Point and within southern Anacostia Park under Alternative 3 would not be visible from southeast corner of Capitol Hill at 13th and L Streets, SE. As elsewhere within Capitol Hill, the new development would be obscured by buildings, highway infrastructure, and vegetation. Long-term impacts to these views would thus be negligible.

US Capitol Building

The development at Poplar Point would potentially be visible from the elevated terrace on the south side of the US Capitol Building, however, the structures would be barely discernible within the existing urban fabric. Long-term impacts to views from the U.S. Capitol Building would thus be negligible.

The Washington Monument

The development at Poplar Point and within southern Anacostia Park under Alternative 3 would not be visible from the Washington Monument. Long-term impacts to this viewshed would thus be negligible.

The White House

The development at Poplar Point and within southern Anacostia Park under Alternative 3 would not be visible from the White House. Long-term impacts to this view would thus be negligible.

Lincoln Memorial

The development at Poplar Point and within southern Anacostia Park under Alternative 3 would not be visible from the Lincoln Memorial. Long-term impacts to this view would thus be negligible.

West of the Potomac River

Washington National Airport

Views from the old terminal building at National Airport across the Potomac River currently include Poplar Point and the Anacostia River in the distance. Under Alternative 3, the park land on the point would continue to be visible with the new buildings at Poplar Point visible further behind. Night views could be impacted slightly, however, Bolling/Anacostia, the Frederick Douglass Bridge, and the Washington Navy Yard are all existing light sources that are visible within this view. Long-term adverse impacts to views from National Airport would be minor.

Distant Viewpoints

The McMillan Reservoir

The development at Poplar Point and within southern Anacostia Park under Alternative 3 would not be visible from the McMillan Reservoir. Long-term impacts to this view would thus be negligible.

Mount Hamilton

The development at Poplar Point and within southern Anacostia Park under Alternative 3 would not be visible from Mount Hamilton. Long-term impacts to this view would thus be negligible.

Iwo Jima Memorial

The development at Poplar Point and within southern Anacostia Park under Alternative 3 would not be visible from the Iwo Jima Memorial. Long-term impacts to this view would thus be negligible.

Arlington House

Under Alternative 3, the new development at Poplar Point would be evident in views from Arlington House but would not obstruct the view or alter its character. Thus, long-term adverse impacts would be minor.

Cumulative Impacts

The proposed redevelopment of Poplar Point, the relocation of the U.S. Park Police Headquarters and Aviation Facility, the relocation of the NPS NACE headquarters, and the recreational improvements within southern Anacostia Park, when considered together with the improvements at the Frederick Douglass and 11th Street Bridges, could contribute to a positive cumulative impact to views within the site. Depending on the height and alignment of the 11th Street Bridge and its infrastructure, the development at Poplar Point may be more or less visible from the Anacostia Fieldhouse. When considered together with the development at St. Elizabeths, the Poplar Point development could contribute to moderate long-term adverse cumulative impacts to views from the west sides of the Anacostia and Potomac Rivers, as well as from St. Elizabeths itself.

Conclusion and Impairment Finding

Under Alternative 3, long-term impacts could range from moderate to major adverse, to moderate positive. Alternative 3 would not result in unacceptable impacts or an impairment of park resources.

Mitigation

The mitigation measures recommended for Alternative 3 are identical to those identified under Alternative 1.

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4.4

NATURAL RESOURCES

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4.4.1 Geophysical Resources

4.4.1.1 Methodology and Assumptions

The following describes the methodology and assumptions used in determining the impacts the action alternatives would have on the Project Area's geophysical resources. Geophysical resources include geology, topography, and soils. This section details the methods used for evaluation, the geographic area that encompasses these resources, and the thresholds used for determining the magnitude of the impacts. Impacts are described in terms of short-term during construction and long-term during operation or site build out.

Analysis Methods

A general analysis to determine the impacts of the action alternatives was conducted for the Project Area's geophysical resources through on-site investigation, review of existing literature, and resource mapping. Literature included environmental reports and analyses conducted within the vicinity of the Project Area to gain an understanding of its context. Resource mapping was accessed through the USGS Web Soil Survey and provided insight to the soil, topographic, and geotechnical conditions.

Assumptions

The geographic area used in the analysis to determine the impacts the alternatives would have on geophysical resources is limited to the area of disturbance within the Project Area. It is assumed that no development activities are proposed outside of the Project Area; therefore, any impacts to the soils, geotechnical resources, and topography would be localized.

Impact Thresholds

To adequately define the magnitude of the impact on geophysical resources, the following thresholds were established. These thresholds describe the impacts of the alternatives relative to the existing conditions.

Negligible: Geophysical resources would not be impacted or the impact would be below or at the lower levels of detection.

Minor: Impacts to geophysical resources would be detectable; however, the impact would be minor and localized. Mitigation measures would be required to offset adverse impacts; however, the effort for implementation would be minimal and would have a high rate of success.

Moderate: Impacts to geophysical resources would be apparent over a large area. Mitigation measures would be required to offset adverse impacts, and would have a high rate of success; however, they would require moderate effort to implement.

Major: Impacts to geophysical resources would be apparent and have a major impact on geology, topography, and soils within the Project Area relative to existing conditions. Mitigation measures would be required to offset adverse impacts and the success rate would be variable.

Duration

Short-term impacts include those that would occur during the construction phases; long-term impacts are those that would persist beyond construction.

4.4.1.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, no development or construction activities would occur. The Project Area would remain essentially in its current state. The Project Area would continue to operate as the southern extent of Anacostia Park. The NPS NACE headquarters, the USPP headquarters building, and the USPP aviation facility would continue to operate in their existing locations. Routine maintenance activities would occur within the Project Area as part of the operation of Anacostia Park. The topography of the Project Area would remain unchanged because no development or ground disturbances would occur. Furthermore, surface and subsurface soils would not be disturbed and the geology of the Project Area would remain unchanged. Negligible impacts to topography, geology, or site soils would occur.

Cumulative Impacts

There would be no direct or indirect cumulative impacts to geophysical resources as a result of the No Action Alternative. Construction and operation of the cumulative projects would not affect the geophysical resources at the Project Area. Furthermore, no construction or development activity would occur within the Project Area that would affect nearby resources. There would be no cumulative geophysical impacts under the No Action Alternative.

Conclusion

Implementation of the No Action Alternative would have a negligible impact on geophysical resources in the Project Area or in the surrounding area. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

4.4.1.3 Alternative 1

Direct and Indirect Impacts

Geology

Alternative 1 would involve redevelopment in Poplar Point, relocation and construction of the USPP building and aviation facility in the North Field, and recreation improvements within southern Anacostia Park. Within Poplar Point, construction would be concentrated at the point along the River, and south and west of the

existing wetlands. All construction activities within the Project Area would be required to comply with federal and District building standards based on the underlying soils type and site constraints.

Medium to large structures generally require a deep foundation system, such as piles or caissons, for support and to eliminate the potential for settling. Alluvium and fill, in general, are so thin that these foundation systems can easily reach firm, load-bearing materials such as bedrock or compact sediments. Conversely, soft sediments can spread laterally under even very small loads and potentially lead to instability and settling. Preliminary subsurface investigations have demonstrated the presence of fill and unconsolidated sediments, such as the Holocene Clay, Upper, Middle, and Lower Permeable Units and the Cretaceous Clay, throughout the Project Area. Areas where the permeable units encounter the surface fill or where the layer of Holocene Clay is thin would require deeper foundation systems for new buildings. The areas where the permeable units come in contact with surface fill are in the southwest portion of the Poplar Point. The layer of Holocene Clay is very thin in the south central portion of the Poplar Point. These conditions would require pilings for new buildings. Bedrock was not encountered during preliminary testing; as a result, the required depth for the pilings may increase if bedrock is deemed necessary for support.

Compliance with federal and District building standards would ensure that the structures proposed under Alternative 1 would be supported by the appropriate foundation system for the site soils. The long-term adverse impact to geology would be minor.

Topography

The Project Area is relatively flat and under Alternative 1, there would be no construction on steep slopes or hillsides. However, development under Alternative 1 would require some alterations to the topography of the Project Area. Because the Project Area is located within a floodplain, all structures must either be designed to flood or must be constructed above the floodplain elevation. Further, any changes to the size of the floodplain must be balanced onsite. For example, if 2 acres of floodplain are removed in one portion of the Project Area, 2 acres of floodplain must be replaced in another part of the Project Area.

Alternative 1 proposes a mix of residential, retail, office, and civic/cultural uses within Poplar Point that must not be subject to flooding. Development areas within the Poplar Point containing these uses must be constructed above the floodplain elevation. Therefore, Alternative 1 would involve the creation of a terraced development within Poplar Point with elevations ranging from 11 feet above msl to 20 feet above msl for the retail, residential, office, and civic/cultural uses and associated facilities. Other areas within Poplar Point would be excavated to retain the overall capacity of the floodplain that currently exists. The elevations within the terraced development can be categorized into three groups. The lowest terrace would be used for floodplain management and would be a maximum of 11 feet above msl, which is the current Base Flood Elevation within Poplar Point. Some areas may be excavated in order to reach these elevations. These lowest terraces would encompass the existing wetlands. The upland terraces would range in elevation from 13 feet above msl to 20 feet above msl and would be designated for stormwater management. The upland terraces would provide a buffer between the Poplar Point development areas and the lowest areas. The lower terrace and the upland terrace would be retained for open space and recreation. The development terrace would have a finished grade above 20 feet above msl and would be where building development would occur. Sub-

grade parking would be located on the development terrace and would be accomplished by constructing parking levels at the existing grade and placing fill to create a new higher base floor elevation. This would alleviate the necessity to excavate while placing the parking above the floodplain elevation.

The NPS NACE headquarters would be relocated under Alternative 1 to the eastern portion of Poplar Point near the 11th Street Bridges. The relocated facility would be constructed within the upland terrace at 11 feet to 20 feet above msl, so it would be above the base flood elevation. Similarly, the USPP headquarters and aviation facility in the North Field would be constructed above the base flood elevation. As such, no substantial grading or changes in topography would be required to relocate these facilities as described above for construction within Poplar Point.

Development within southern Anacostia Park would primarily consist of landscape improvements to create formalized playfields, picnic pavilions, and playground areas. Any new structures located within the floodplains, such as restroom facilities, would be designed to flood. No substantial grading or changes in the topography of this portion of the Project Area would occur.

The Howard Road parcels and WMATA garage are located farther away from the River than the Project Area. As such, changes in topography would not be anticipated to build out these portions of the Small Area Plan.

Although Alternative 1 would modify the existing topography of portions of the Project Area, the long-term impact would be minor because the overall changes in elevation would be balanced within the Project Area. The total capacity of the floodplain would be retained and all new structures would be located above the floodplain elevation.

Soils

Demolition, excavation, and grading during construction would create the potential for increased wind and water erosion. Major earth moving activities within the Project Area would occur, which would expose on-site soils to the potentials for erosion. As required by the EPA, the construction contractor would develop and implement a Stormwater Pollution Prevention Plan (SWPPP) during construction and a Wet Weather Erosion Control Plan (WWECP). Stormwater best management practices would be undertaken to control runoff, erosion and sedimentation. Best management practices and design measures would minimize the amount of runoff and sediment leaving the construction site by containing runoff on-site. Compliance with the SWPPP and WWECP would ensure that the short-term adverse impact would be minor.

Exposed soil and ground disturbing activity would not be expected to occur as part of operation of the Project Area under Alternative 1. As such, the potential for soil erosion during operation would be negligible.

Cumulative Impacts

Past construction and development in the Project Area did result in a change in the site's geology, soils, and topography, from the clearing, grading, dredging, placement of dredging spoils, and subsurface activities. Future development within the vicinity of the Project Area could also increase the potential for increased sedimentation and erosion. Adherence to federal and District policies on stormwater and erosion control,

specifically during the construction process, would reduce the magnitude of these effects. Geologic impacts would be limited to the area of disturbance. Compliance with federal and District policies would ensure that all proposed structures meet current building standards. The long-term cumulative impact would be minor.

Conclusion

Alternative 1 would have long-term minor adverse effects to topography, geology, and soils. Development under Alternative 1 would require site grading and earthwork to create base floor elevations located above the flood elevations to different parts of the site. During the construction phase, proper stormwater and erosion control best management practices would be used to limit the impacts to soils. Compliance with federal and District policies would ensure that new structures are constructed according to current building standards for geologic conditions in the Project Area. This alternative would not result in unacceptable impacts to or impairment of a key park resource

Mitigation

- Implement appropriate best management practices (BMP) for erosion control to minimize the potential impacts during construction.

4.4.1.4 Alternative 2

Direct and Indirect Impacts

Geology

Similar to Alternative 1, Alternative 2 would involve redevelopment in Poplar Point, relocation and construction of the NPS NACE headquarters, USPP headquarters, and USPP aviation facility in the North Field, and recreation improvements within southern Anacostia Park. Within Poplar Point, construction would be concentrated around the existing Metro station entrance. All construction activities within the Project Area would be required to comply with federal and District building standards based on the underlying soils type and site constraints to ensure appropriate foundation systems are implemented. As such, the long-term adverse impact to geology would be minor.

Topography

As with Alternative 1, the Project Area is relatively flat and under Alternative 2, there would be no construction on steep slopes or hillsides. Development under Alternative 2, however, would alter the topography of the Project Area within Poplar Point. This would involve the creation of terraces with elevations ranging from 11 feet above msl to more than 20 feet above msl, similar to Alternative 1. The lowest terrace would be located along the shoreline of the Anacostia River and would be used in the creation of wetlands and floodplain management. The development terraces with elevations of at least 20 feet above msl (the highest terrace), would be located in and around the WMATA garage in the central portion of Poplar Point and extend almost to the shoreline. All other portions of Poplar Point would be considered upland

terrace and range in elevation between 13 feet to 20 feet above msl. As previously stated these areas would be used as stormwater management areas and for recreation.

The NPS NACE headquarters would be relocated under Alternative 2 to the southeastern portion of Poplar Point near I-295. The relocated facility would be constructed within the upland terrace at 11 feet to 20 feet above msl, so it would be above base flood elevation. Similarly, the USPP headquarters and aviation facility in the North Field would be constructed above the base flood elevation. As such, no substantial grading or changes in topography would be required to relocate these facilities.

Under Alternative 2, similar improvements within southern Anacostia Park would occur as with Alternative 1. No substantial grading or changes in the topography of this portion of the Project Area would occur. Also, the Howard Road parcels and WMATA garage are located farther away from the River than the Project Area. As such, changes in topography would not be anticipated to build out these portions of the Small Area Plan.

Although Alternative 2 would modify the existing topography of the Project Area, the long-term adverse impact would be minor. The total capacity of the floodplain would be retained and structures for proposed new development would be located above the floodplain elevation.

Soils

Under Alternative 2, demolition, excavation, and grading during construction would create the potential for increased wind and water erosion. Major earth moving activities within the Project Area would occur, which would expose on-site soils to the potentials for erosion. Similar to Alternative 1, the construction contractor would develop and implement a SWPPP during construction and a WVECP as required by the EPA. As such, compliance with the SWPPP and WVECP would ensure that the short-term adverse impact would be minor. Exposed soil and ground disturbing activity would not be expected to occur as part of operation of the Project Area under Alternative 2. As such, the potential for soil erosion during operation would be negligible.

Cumulative Impacts

Past construction and development in the Project Area did result in a change in the site's geology, soils, and topography, from the clearing, grading, dredging, placement of dredging spoils, and subsurface activities. Future development within the vicinity of the Project Area could also increase the potential for increased sedimentation and erosion. Adherence to federal and District policies on stormwater and erosion control, specifically during the construction process, would reduce the magnitude of these effects. Geologic impacts would be limited to the area of disturbance. Compliance with federal and District policies would ensure that all proposed structures meet current building standards. The long-term cumulative impact would be minor.

Conclusion

As with Alternative 1, Alternative 2 would have long-term minor adverse effects to topography, geology, and soils. This alternative would not result in unacceptable impacts to or impairment of a key park resource

Mitigation

Same as for Alternative 1.

4.4.1.5 Alternative 3

Direct and Indirect Impacts

Geology

Similar to Alternatives 1 and 2, Alternative 3 would involve redevelopment in Poplar Point, relocation and construction of the NPS NACE headquarters, relocation and construction of the USPP building and aviation facility in the North Field, and recreation improvements within southern Anacostia Park. Within Poplar Point, construction would be concentrated in the eastern portion of the site. All construction activities within the Project Area would be required to comply with federal and District building standards based on the underlying soils type and site constraints to ensure appropriate foundation systems are implemented. As such, the long-term adverse impact to geology would be minor.

Topography

As with Alternatives 1 and 2, the Project Area is relatively flat and under Alternative 3, there would be no construction on steep slopes or hillsides. Development under Alternative 3, however, would alter the topography of the Project Area within Poplar Point. This would involve the creation of terraces with elevations ranging from 11 feet above msl to more than 20 feet above msl, similar to Alternatives 1 and 2. The lowest terrace would be located along the shoreline of the Anacostia River and would be used in the creation of wetlands and floodplain management. The development terraces with elevations of at least 20 feet above msl (the highest terrace), would be located in and around the WMATA garage in the central portion of Poplar Point and extend almost to the shoreline. All other portions of Poplar Point would be considered upland terrace and range in elevation between 13 feet to 20 feet above msl. As previously stated these areas would be used as stormwater management areas and for recreation.

The NPS NACE headquarters would be relocated under Alternative 3 to the southeastern portion of Poplar Point near I-295. The relocated facility would be constructed within the upland terrace at 11 feet to 20 feet above msl, so it would be above base flood elevation. Similarly, the USPP headquarters and aviation facility in the North Field would be constructed above the base flood elevation. As such, no substantial grading or changes in topography would be required to relocate these facilities.

Under Alternative 3, similar improvements within southern Anacostia Park would occur as with Alternatives 1 and 2. No substantial grading or changes in the topography of this portion of the Project Area would occur. Additionally, the Howard Road parcels and WMATA garage are located farther away from the River than the Project Area. As such, changes in topography would not be anticipated to build out these portions of the Small Area Plan.

As with Alternatives 1 and 2, although Alternative 3 would modify the existing topography of the Project Area, the long-term adverse impact would be minor. The total capacity of the floodplain would be retained and structures for proposed new development would be located above the floodplain elevation.

Soils

Under Alternative 3, demolition, excavation, and grading during construction would create the potential for increased wind and water erosion. Major earth moving activities within the Project Area would occur, which would expose on-site soils to the potentials for erosion. Similar to Alternatives 1 and 2, the construction contractor would develop and implement a SWPPP during construction and a WVECP as required by the EPA. As such, compliance with the SWPPP and WVECP would ensure that the short-term adverse impact would be minor. Exposed soil and ground disturbing activity would not be expected to occur as part of operation of the Project Area under Alternative 3. As such, the potential for soil erosion during operation would be negligible.

Cumulative Impacts

Past construction and development in the Project Area did result in a change in the site's geology, soils, and topography, from the clearing, grading, dredging, placement of dredging spoils, and subsurface activities. Future development within the vicinity of the Project Area could also increase the potential for increased sedimentation and erosion. Adherence to federal and District policies on stormwater and erosion control, specifically during the construction process, would reduce the magnitude of these effects. Geologic impacts would be limited to the area of disturbance. As with Alternatives 1 and 2, compliance with federal and District policies would ensure that all proposed structures meet current building standards. The long-term cumulative impact would be minor.

Conclusion

As with Alternatives 1 and 2, Alternative 3 would have long-term minor adverse effects to topography, geology, and soils. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.4.2 Water Resources

4.4.2.1 Methodology and Assumptions

The following describes the methodology and assumptions used in determining the impacts the Proposed Action would have on water resources. This section details the methods used for evaluation, the geographic area that encompasses these resources, and the thresholds used for determining the magnitude of the impacts. The topics included in this section are surface water resources, groundwater resources, water quality, and stormwater.

Analysis Methods

A general analysis to determine the impacts of the proposed action was conducted for the site's water resources through on-site investigation, a review of existing literature, and resource mapping. Literature included environmental reports and analyses conducted within the vicinity of the Project Area. Previous analysis conducted on the site occurred in 2003 by RIDOLFI, Inc. The result of this analysis was a Site Characterization Report which summarized the physical site characteristics, including groundwater resources. Resource mapping was accessed through FEMA to determine the location of the 100-year floodplain.

Assumptions

The geographic area used in the analysis to determine the impacts the Proposed Action would have on water resources is defined by each resource considered. For surface water and water quality, the geographic area is defined as surface water bodies found on-site and adjacent to the Project Area. Groundwater and stormwater impacts were examined within the boundaries of the Project Area; however, it is understood that any impacts may have a greater reach than the site itself. The floodplains and wetlands examined were limited to those found onsite.

Impact Thresholds

To adequately define the magnitude of impacts on the water resources, the following thresholds were established. These thresholds describe the impacts of the Proposed Action relative to existing conditions.

Negligible: Impacts would be imperceptible or not detectable. Mitigation would not be required.

Minor: Impacts would be slightly perceptible and localized. Minor adverse impacts would pose a slight risk of degrading water quality by proximity to surface water or involving sources of pollution that are persistent in the environment. Adverse impacts to wetlands would slightly deteriorate the functioning of area wetlands. Adverse impacts to floodplains would result in small changes in floodplain values. Minor positive impacts could slightly improve water quality, the functioning of area wetlands, or the likelihood of flooding onsite.

Moderate: Impacts would be apparent and have the potential to become larger. Moderate adverse impacts would pose likely risk of degrading water quality by their proximity to surface water,

involving sources of pollution that are persistent in the environment. Adverse impacts to wetlands would be apparent but localized. Adverse impacts to floodplains would result in an increase in flooding potential and/or a decrease in the ability of the floodplain to convey water. Moderate positive impacts could measurably improve water quality, the functioning of wetlands, or the likelihood of flooding. Affects would remain localized.

Major: Major adverse impacts would pose a substantial risk of degrading water quality by their proximity to surface water, involving sources of pollution that are persistent in the environment. Major positive impacts would substantially improve water quality, the size or functioning of wetlands, or the likelihood of flooding on and offsite. Affects could go beyond the point of impacts.

Duration

Short-term impacts include those that occur during the development phases; long-term impacts include those that would persist after the development phase.

4.4.2.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no changes to the project site. The Project Area would continue to operate as the southern extent of Anacostia Park. Routine maintenance activities would occur within the Project Area as part of operation of the Park. The NPS NACE headquarters and USPP headquarters and aviation facility would continue to operate in their existing locations. Stickfoot Creek would not be daylighted and remain a captured storm drain. As such, there would be no modifications to the existing surface water resources, wetlands, floodplain, or groundwater resources.

Current water resources associated with the site are the Anacostia River and the surface water body found in the eastern wetland complex. It is possible that this water body was caused by a broken pipe or water main. If it is determined that this is the case, and if the pipe were subsequently repaired, it is anticipated that much (if not all) of the water body would evaporate and cease to exist.

A portion of the project site lies within the 100-year floodplain. A levee currently protects the NPS and USPP facilities located in the center of the Project Area. Under the No Action alternative, this levee would be maintained to ensure no flood damage occurs to these facilities.

Negligible to groundwater would occur under the No Action Alternative, as none of the recharge rates would be impacted.

Cumulative Impacts

The No Action Alternative, when considered together with ongoing or planned projects in the area, would not contribute to a cumulative impact to water resources. No substantive changes to the Project Area would occur as part of the No Action Alternative. Modifications to the surrounding area as a result of the ongoing or

planned projects in the area would not directly impact the surface water resources, wetlands, floodplains, or groundwater resources because this activity would not occur onsite. Ongoing or planned projects would be required to comply with District water quality standards to prevent contaminated stormwater from leaving the construction site and reaching the site or nearby surface water resources, such as the Anacostia River, and groundwater resources. Compliance with existing regulations would ensure that indirect adverse cumulative impacts would be minor.

Conclusion

Implementation of the No Action Alternative would not result in direct impacts to water resources because no changes would occur onsite. The impact would be negligible. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

4.4.2.3 Alternative 1

Direct and Indirect Impacts

Surface Water

Under Alternative 1, Stickfoot Creek would be daylighted and allowed to flow naturally through the existing wetland system. This would create a new surface water resource not currently found on the site and could provide a long-term positive impact to the water quality. Alternative 1 also proposes to rebuild much of the bulkhead along the shoreline. This would provide structural integrity to the shore and minimize the potential for shoreline erosion into the Anacostia River. There would thus be minor to moderate long-term positive impacts. All construction work within the Anacostia River would require a permit from the USACE under Section 404 of the Clean Water Act. Compliance with the USACE permit requirements would ensure that direct and indirect short-term adverse impacts to the Anacostia River during construction would be minor.

Water Quality

Water quality can be impacted during the construction phase of a project. Exposed soils are susceptible to transport via wind or stormwater. Pollutants can also be generated from onsite fueling and storage of construction equipment. These pollutants are typically carried into nearby surface water channels during storm events. As such, appropriate BMPs for soil erosion, sedimentation, chemical and fuel storage, stormwater runoff, and drainage systems would be implemented in accordance with federal and District requirements. The applicant would be required to obtain an NPDES permit and prepare a SWPPP prior to the start of construction. Compliance with existing regulations would ensure that the short-term adverse impact to water quality would be minor.

After construction, increases in impervious surfaces would increase the amount of stormwater runoff generated at the site. This increase is anticipated, as Poplar Point would transition from a park comprised mostly of open space and passive recreation to a mixed-use development. This increased amount of runoff has the potential to carry soil, sediment, and contamination to the Anacostia River. Additional stormwater management features to trap and treat stormwater prior to it entering the Anacostia River have been

proposed as part of the design of Alternative 1. For example, Alternative 1 proposes to locate stormwater management areas directly adjacent to the existing wetlands and in the far eastern portion of the site. Stormwater from developed areas would be collected and channeled to the stormwater management terraces, where water would be filtered prior to release into the wetlands or before percolating into the groundwater. These project features would have a positive impact on water quality by filtering and cleansing water before it is discharged or permitted to percolate into groundwater resources. The long-term positive impact to water quality would be moderate.

Wetlands

Alternative 1 would preserve the wetlands found on-site in place and locates proposed mixed-use development at the perimeter of these features. Following remediation, the wetlands would be used for multiple purposes including passive recreation, demonstration wetlands for educational uses, and stormwater treatment. Because Alternative 1 would retain the wetlands in their existing locations and remediate these resources, the long-term positive impact would be moderate positive. All modifications to the jurisdictional wetlands would require a permit from the USACE under Section 404 of the Clean Water Act. Compliance with existing regulations would ensure that short-term adverse impacts to wetlands would be minor.

Floodplains

As previously discussed, portions of the Project Area are located within the 100-year and 500-year floodplains. For the purposes of creating a suitable development area and maintaining proper flood controls, a portion of the Project Area would be terraced within Poplar Point. The low-lying terraces would be located in the central portion of Poplar Point and would be permitted to flood. The intermediate upland terraces would include the existing wetlands and would be used to filter and cleanse stormwater runoff. The development area terrace would have a finished grade above 20 feet above msl and would be the areas where buildings would be sited. Due to the new elevations created within Poplar Point by the terraces, the highest terrace areas would be located outside of the 100-year and 500-year floodplains. By creating different terrace levels throughout the Poplar Point site, the overall capacity of the floodplain would not be diminished because the low-lying terraces would be excavated to offset the creation of higher elevations.

The relocated NPS NACE headquarters and USPP headquarters and aviation facility would not be located within the 100-year floodplain. Some recreational improvements may be implemented within southern Anacostia Park that would be located within the 100-year floodplain. These would include picnic pavilions, playgrounds, and restrooms. As such, these facilities would be designed to flood so as to not impede flood flows. Areas to be developed that are currently located within the 100- and 500-year floodplains must comply with all local and federal review and reporting measures for construction in the floodplain, including review and approval by the DCRA, the Watershed Division of the DC EHA, FEMA, and EPA. Additionally, all base floor elevations would comply with the current base flood elevation. Although Alternative 1 involves modifications to the floodplain, the long-term adverse impact would be minor.

Groundwater

Because of the location of the Project Area adjacent to the Anacostia River, high ground water levels have been detected in some areas. To reduce the severity of impacts to groundwater, excavation would be limited. As discussed above, Poplar Point would be terraced to alleviate the necessity to excavate because the base floor elevation would be raised to above the elevation of the floodplain.

If groundwater is encountered during construction, a permit would be obtained from EPA and the DC DPW to allow wastewater discharge into the Anacostia River. Additionally, the DCRA, Water Quality Branch must certify all permits and requires monitoring of contaminants during dewatering. Appropriate measures would be taken to ensure that pollutant discharge is at or below accepted levels. Implementation of project design and compliance with federal and District regulations would ensure that short-term adverse impacts to groundwater resources would be minor.

Long-term impacts to groundwater are related to an increase in ground groundwater pumping or reductions in pervious or permeable surfaces. Water is supplied to the Project Area are provided by DC WASA and no groundwater pumping would occur. As such, there is no potential to deplete groundwater supplies. Implementation of Alternative 1 would increase the amount of pervious surfaces within the Project Area from the redevelopment of Poplar Point with a mix of residential, retail, office, and civic/cultural uses. However, more than 70 acres within Poplar Point would be set aside for open space. Rainwater collected from impervious surface such as buildings, roads, and parking lots, would be channeled to the upland terrace and uses as part of the wetland or permitted to percolate into the ground. Thus, there would be no substantial depletion of ground water supplies. Long-term impacts to groundwater would be minor.

Cumulative Impacts

Implementation of Alternative 1 would increase the amount of impervious surfaces within the Anacostia River watershed. This, in turn, would increase the total amount of stormwater produced within the watershed. This change, when considered together with other projects within the study area, could contribute to a minor adverse cumulative impact to surface water resources. However, the change would be marginal as the watershed is approximately 176 square miles and the Project Area is only approximately one square mile. Any additional construction in the area would have to coordinate accurate totals of impervious surface to ensure that the river does not become overburdened and flooding is created in downstream areas. The cumulative impact to surface water resources would be minor.

Additional development activity in the vicinity of the Project Area would have the potential for stormwater discharges into nearby surface water bodies, such as the Anacostia River. This has the potential to create adverse impacts to water quality in the vicinity. As with Alternative 1, the ongoing and planned projects would be required to implement appropriate BMPs for soil erosion, sedimentation, chemical and fuel storage, stormwater runoff, and drainage systems in accordance with federal and District requirements. Compliance with existing regulations would ensure that the cumulative impact to water quality would be minor.

The wetlands located in Poplar Point are specific to the boundaries of the Project Area. Development of ongoing and planned projects in the vicinity of the Project Area would not directly or indirectly impact wetlands located within the site. As such, no adverse cumulative impact would occur.

As with Alternative 1, development of the ongoing and planned projects could occur within the 100- or 500-year floodplains. Areas to be developed that are currently located within the 100- and 500-year floodplains must comply with all local and federal review and reporting measures for construction in the floodplain, including review and approval by the DCRA, the Watershed Division of the DC EHA, FEMA, and EPA. As would occur under Alternative 1, the overall capacity of the floodplain must be retained. Compliance with existing regulation would ensure that the cumulative impact would be minor.

Due to the location of the water table close to the ground surface in many parts of the District, Alternative 1 and the ongoing and planned projects have the potential to impact groundwater resources by direct contact and through an increase in impervious surfaces. As discussed above, any additional construction in the area would have to coordinate accurate totals of impervious surface to ensure that the River does not become overburdened and flooding is created in downstream areas. The cumulative impact to groundwater recharge would be minor. The ongoing and planned projects, like Alternative 1, would be required to comply with District guidelines should groundwater be encountered during construction. Compliance with existing regulations would ensure that the cumulative impact would be minor.

Conclusion

Alternative 1 would have long-term minor to moderate positive impacts to surface water resources. The daylighting of Stickfoot Creek would serve as a new water resource on the site. Additionally, the repair of the bulkhead along the shoreline would reduce the likelihood of erosion. Alternative 1 would also retain the existing wetlands in their current location and remediate the existing contamination, resulting in long-term moderate positive impacts to wetlands.

Alternative 1 would increase the amount of stormwater generated onsite; however, the inclusion of stormwater management facilities as part of the project design would provide a long-term moderate positive impact to water quality by reducing non-point source pollution. Short-term minor adverse impacts could be generated during the construction period as stormwater has the potential to convey exposed soils to the Anacostia River. In addition, during construction, a minor short-term adverse impact would occur if groundwater is encountered during site grading. All proper permitting for site-dewatering would be obtained and after construction long-term impacts are anticipated to be negligible. Long-term impacts to groundwater would be minor due to the site's design which funnels rainwater into the site's wetlands or retains it until fully percolated.

This alternative would not result in unacceptable impacts to or impairment of a key park resource

Mitigation

- Develop an erosion and sediment control plan, a stormwater management plan, and a floodplain management plan. The plans would include the elements from the preferred development plan and BMP measures that would reduce the risk of erosion and manage the quality of stormwater runoff to minimize the effects on the Anacostia River. These requirements are intended to minimize cumulative impacts of construction and development to surface water resources and, and are subject to review by the Watershed Protection Division of the DC EHA, FEMA, EPA, and NPS. The SWPPP will include the following:
 - minimizing the extent of the disturbed area and duration of exposure;
 - stabilizing and protecting the disturbed area as soon as possible;
 - keeping runoff velocities low;
 - protecting disturbed areas from contact with runoff; and
 - retaining sediment within the construction area.
- Appropriate BMPs for groundwater protection should be implemented during the construction and operation of the facility to protect groundwater quality, thereby indirectly protecting river water quality. Construction best management practices implemented as part of the SWPPP would include, at minimum, the following:
 - temporary desilting basins;
 - silt fences;
 - gravel bag barriers;
 - temporary soil stabilization through mattress or mulching;
 - temporary drainage inlet protection; and
 - diversion dikes and interceptor swales.
- Stormwater runoff from the site's impervious surfaces would be collected and treated on-site prior to discharge to the Anacostia River.
- Appropriate dewatering measures are recommended to provide additional groundwater control (i.e. pump testing to investigate aquifer properties and constructing a continuous cutoff wall extending into the clay soils).
- Biological or non-chemical means of controlling exotics and pests shall be utilized over pesticides where feasible. Should chemical pesticides or herbicides be required, less-persistent compounds shall be used in accordance with manufacturers' recommendations and general standards of use. Application of chemicals shall be restricted such that they are not used immediately before and during rain storms or within the 24-hour period in which rain is forecast to occur.

4.4.2.4 Alternative 2

Direct and Indirect Impacts

Surface Water

Under Alternative 2, Stickfoot Creek would be daylighted and become a filtration component of the linear “finger” parks within Poplar Point. This would create a new surface water resource not currently found within Poplar Point and would provide a long-term positive impact to the Project Area. Alternative 2 also proposes to terrace the land adjacent to the water, allowing floodwaters to enter the site. The existing seawall would be replaced with wetlands that would provide a vegetative and hydraulic transition zone from Poplar Point to the River. This would also allow for the creation of new wetlands that would be used to filter and cleanse onsite pollutants and sediments from stormwater runoff. In addition, the wetlands would serve to stabilize the shoreline and minimize eroded materials that enter the Anacostia River. All construction work within the Anacostia River would require a permit from the USACE under Section 404 of the Clean Water Act. Compliance with the USACE permit requirements would ensure that direct and indirect adverse impacts to the Anacostia River during construction would be minor.

Water Quality

Similar to Alternative 1, construction activities have the potential to impact water quality. Soils may be left exposed and are susceptible to transport via wind or stormwater. The applicant would be required to obtain an NPDES permit and prepare a SWPPP prior to the start of construction. Compliance with existing regulations would ensure that the short-term adverse impact to water quality would be minor. Alternative 2 also proposes to implement stormwater management BMPs into its design to control and reduce the amount of runoff reaching the Anacostia River. The BMPs utilized under Alternative 2 would be similar to Alternative 1 and would result in a moderate long-term positive impact on water quality.

Wetlands

Alternative 2 would remove all of the existing wetlands found within Poplar Point, a total of 6.25 acres. There would be a short-term major impact to water resources associated with the removal of the wetlands. As part of Alternative 2, new wetlands would be created at a ratio of 3:1 along the shoreline of the Anacostia River and in other parts of Poplar Point. In total, 19.44 acres would be created. Man-made wetlands can provide the same ecological benefits as natural wetlands; however, their construction and location must be monitored closely and they take time to fully establish. Thus, the short-term impacts would be moderate.

Similar to the natural wetlands, the man-made wetlands would still provide a habitat that is unique within the urban context and perform an ecological function by retaining and filtering stormwater. As such, long-term positive impacts to wetlands would be minor.

Floodplains

Similar to Alternative 1, Alternative 2 would employ a terracing for the purposes of creating a suitable development area and maintaining proper flood controls. The lowest terraced areas would be located in along the shoreline and used for the creation of new wetlands. The highest terraced areas would have a finished grade above 20 feet above msl and would be located around the Metro station. This would result in elevations similar to Alternative 1 and keep developed areas out of the 100-year and 500-year floodplains. Although Alternative 2 involves modifications to the floodplain, the long-term adverse impact would be minor because the overall capacity of the floodplain would be maintained.

Groundwater Resources

The location of the Project Area next to the river has led to high groundwater levels in some areas. To reduce the severity of impacts to groundwater, excavation would be limited. As discussed above, the Poplar Point site would be terraced under Alternative 2. Similar to Alternative 1, all applicable permits would be obtained and all applicable regulations complied with if groundwater is encountered during construction. Implementation of project design and compliance with federal and District regulations would ensure that the short-term impact to groundwater resources would be minor. Also similar to Alternative 1, the site design and stormwater management practices would result in minor long-term impacts to groundwater.

Cumulative Impacts

Implementation of Alternative 2 would increase the amount of impervious surface within the Anacostia Watershed, similar to Alternative 1. However, this change would be marginal as the watershed is approximately 176 square miles and the Poplar Point site is substantially less than one square mile. As a result, the cumulative impact to surface water resources would be minor.

Additional development activity in the vicinity of the Project Area would have the potential to stormwater discharges into nearby surface water bodies, such as the Anacostia River. However, the ongoing and planned projects would be required to implement appropriate BMPs similar to Alternative 1. Compliance with existing regulations would ensure that the cumulative impact to water quality would be minor.

The wetlands located within Poplar Point are specific to the boundaries of the Project Area. Development of ongoing and planned projects in the vicinity of Project Area would not directly or indirectly impact wetlands located within the site. As such, no adverse cumulative impact would occur.

As would occur under Alternative 1, the overall capacity of the floodplain must be retained and considered by planned and on-going projects. Thus, compliance with existing regulation would ensure that the cumulative impact is minor. Any additional construction in the area would have to coordinate accurate totals of impervious surface to ensure that the river does not become overburdened and flooding is created in downstream areas. The cumulative impact to groundwater recharge would be minor. The ongoing and planned projects, like Alternative 2, would be required to comply with District guidelines should groundwater be encountered during construction. Compliance with existing regulations would ensure that the cumulative impact would be minor.

Conclusion

Alternative 2 would have long-term minor to moderate positive impacts to surface water resources. The daylighting of Stickfoot Creek would serve as a new water resource on the site. Additionally, the repair of the bulkhead along the shoreline would reduce the likelihood of erosion. Alternative 2 would replace the existing wetlands with larger manmade wetlands, resulting in long-term moderate positive impacts to wetlands.

Alternative 2 would increase the amount of stormwater generated onsite; however, the inclusion of stormwater management facilities as part of the project design would provide a long-term moderate positive impact to water quality by reducing non-point source pollution. Short-term minor adverse impacts could be generated during the construction period as stormwater has the potential to convey exposed soils to the Anacostia River. In addition, during construction, a minor short-term adverse impact would occur if groundwater is encountered during site grading. All proper permitting for site-dewatering would be obtained and after construction long-term impacts are anticipated to be negligible. Long-term impacts to groundwater would be minor due to the site's design which funnels rainwater into the site's wetlands or retains it until fully percolated.

This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.4.2.5 Alternative 3

Direct and Indirect Impacts

Surface Water

Under Alternative 3, Stickfoot Creek would be daylighted and allowed to flow through the newly created community park in the western part of Poplar Point. This would restore one element of the site's historic hydrology, resulting in a long-term positive impact to water resources. Alternative 3 also proposes to enhance the shoreline by building a promenade along the waterfront. This would provide structural integrity to the shore and minimize the potential for shoreline erosion.

All construction work within the Anacostia River would require a permit from the USACE under Section 404 of the Clean Water Act. Compliance with the USACE permit requirements would ensure that direct and indirect impacts to the Anacostia River during construction would be minor. Long-term impacts would be minor to moderate and positive.

Water Quality

Similar to Alternatives 1 and 2, construction activities have the potential to impact water quality. Soils may be left exposed and are susceptible to transport via wind or stormwater. The construction contractor would be

required to obtain an NPDES permit and prepare a SWPPP prior to the start of construction. Compliance with existing regulations would ensure that the short-term adverse impact to water quality would be minor. The BMPs utilized under Alternative 3 would be similar to Alternatives 1 and 2 and would result in a moderate long-term positive impact on water quality.

Wetlands

Alternative 3 would preserve in place the highest quality wetlands within Poplar Point, Wetlands C and D. These wetlands would be expanded at a ratio of 3:1 to replace the wetlands that would be lost to development, Wetlands E and F. Under Alternative 3 a total of 2.18 acres of wetlands would be lost and replaced by 6.55 acres of man-made wetlands. This would be done by allowing floodwaters to enter Poplar Point and provide sufficient hydrologic conditions. Man-made wetlands can provide the same ecological benefits as natural wetlands; however, their construction and location must be monitored closely and they take to fully establish. Thus, there would be a short-term moderate impact to water resources associated with the removal of the wetlands. Similar to the natural wetlands, the man-made wetlands would still provide a habitat that is unique within the urban context and perform an ecological function by retaining and filtering stormwater. As such, the long-term impact to wetlands would be minor and positive under Alternative 3.

Floodplains

Similar to Alternatives 1 and 2, Alternative 3 would employ a terracing for the purposes of creating a suitable development area and maintaining proper flood controls. The lowest terraced areas would be located in along the shoreline and used for the creation of new wetlands. The highest terraced areas would have a finished grade above 20 feet above msl and would be located around the Metro station. This would result in elevations similar to Alternative 1 and keep developed areas out of the 100-year and 500-year floodplains. Although Alternative 3 involves modifications to the floodplain, the long-term adverse impact would be minor because the overall capacity of the floodplain would be maintained.

Groundwater Resources

The location of the Poplar Point site next to the river has led to high groundwater levels in some areas. To reduce the severity of impacts to groundwater, excavation would be limited. As discussed above, the Poplar Point would be terraced under Alternative 3. Similar to Alternatives 1 and 2, all applicable permits would be obtained and all applicable regulations complied with if groundwater is encountered during construction. Implementation of project design and compliance with federal and District regulations would ensure that the short-term impact to groundwater resources would be minor. Also similar to Alternatives 1 and 2, the site design and stormwater management practices would result in minor long-term impacts to groundwater.

Cumulative Impacts

Implementation of Alternative 3 would increase the amount of impervious surface within the Anacostia Watershed, similar to Alternatives 1 and 2. However, this change would be marginal as the watershed is

approximately 176 square miles and the Project Area is only approximately one square mile. As a result, the cumulative impact to surface water resources would be minor.

Additional development activity in the vicinity of the Project Area would have the potential to stormwater discharges into nearby surface water bodies, such as the Anacostia River. However, the ongoing and planned projects would be required to implement appropriate BMPs similar to Alternatives 1 and 2. Compliance with existing regulations would ensure that the cumulative impact to water quality would be minor.

The wetlands located on the Poplar Point site are specific to the boundaries of the site. Development of ongoing and planned projects in the vicinity of the Project Area would not directly or indirectly impact wetlands located within the site. As such, no adverse cumulative impact would occur.

As would occur under Alternative 3, the overall capacity of the floodplain must be retained and considered by planned and on-going project. Thus, compliance with existing regulation would ensure that the cumulative impact is minor. Any additional construction in the area would have to coordinate accurate totals of impervious surface to ensure that the river does not become overburdened and flooding is created in downstream areas. The cumulative impact to groundwater recharge would be minor. The ongoing and planned projects, like Alternative 3, would be required to comply with District guidelines should groundwater be encountered during construction. Compliance with existing regulations would ensure that the cumulative impact would be minor.

Conclusion

Alternative 3 would have long-term minor to moderate positive impacts to surface water resources. The daylighting of Stickfoot Creek would serve as a new water resource on the site. Additionally, the repair of the bulkhead along the shoreline would reduce the likelihood of erosion. Alternative 3 would retain some of existing wetlands and expand them, resulting in long-term moderate positive impacts to wetlands.

Alternative 3 would increase the amount of stormwater generated onsite; however, the inclusion of stormwater management facilities as part of the project design would provide a long-term moderate positive impact to water quality by reducing non-point source pollution. Short-term minor adverse impacts could be generated during the construction period as stormwater has the potential to convey exposed soils to the Anacostia River. In addition, during construction, a minor short-term adverse impact would occur if groundwater is encountered during site grading. All proper permitting for site-dewatering would be obtained and after construction long-term impacts are anticipated to be negligible. Long-term impacts to groundwater would be minor due to the site's design which funnels rainwater into the site's wetlands or retains it until fully percolated.

This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.4.3 Vegetation and Wildlife Resources

4.4.3.1 Methodology and Assumptions

The following describes the methodology and assumptions used in determining the impacts the alternatives would have on vegetation and wildlife. This section details the methods used for evaluation, the geographic area which encompasses these resources, and the thresholds used for determining the magnitude of the impacts.

Analysis Methods

A general analysis to determine the impacts of the action alternatives was conducted for the Project Area's vegetation and wildlife resources, through on-site investigation, and review of existing literature. Literature included environmental reports and analyses conducted within the vicinity of the Project Area to gain an understanding of the site's context. Additionally, a partial species list for the Project Area was obtained through the NPS.

Assumptions

The geographic area used in the analysis to determine the impacts the alternatives would have on vegetation and wildlife resources is limited to the Project Area of disturbance. It is assumed that no development activities are proposed outside of the site; therefore, any impacts to vegetation would be localized. Impacts to wildlife were examined with a regional scope due to a potential loss of habitat.

Impact Thresholds

To adequately define the magnitude of each impact on vegetation and wildlife resources, the following thresholds were established. These thresholds describe the impacts of the alternatives relative to existing conditions.

Negligible: Vegetation and wildlife resources would not be impacted or the impact would be below or at the lower levels of detection.

Minor: The alternative would result in a measurable or perceptible, small, localized change to a biotic community, wildlife species, or its habitat. The change would be of little consequence.

Moderate: The action would result in an impact to a biotic community, wildlife species, or its habitat that is measurable and of consequence, but remains localized.

Major: The action would result in a measurable change to a biotic community, wildlife species or its habitat. The change is large and/or widespread and could have serious consequences for the species or resource.

Duration

Short-term impacts include those that occur during the construction phases; long-term impacts include those that would persist after construction is complete.

4.4.3.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, no development would occur onsite. However the Project Area would continue to operate as the southern extent of Anacostia Park. Routine maintenance activities would occur within the Project Area as part of operation of the Park and there are not expected to be changes to the current vegetative resources, terrestrial or aquatic. Currently, there is no submerged aquatic vegetation found in the Anacostia River near the Project Area. This condition would persist with the No Action Alternative. The largest amount of terrestrial vegetation in the Project Area is found near the central wetlands located within Poplar Point. This vegetation is comprised mostly of invasive species. However, NPS would remediate the wetlands under the No Action Alternative through the introduction of native plant species that can filter contaminants.

Aquatic wildlife conditions in the Project Area are poor and would not change under the No Action Alternative. The aquatic wildlife near the Project Area is limited in diversity and many individuals have developed major health problems. However, there would be no substantial changes to the vegetative resources within the Project area and part of the No Action. The current vegetative resources onsite are known to support numerous bird, reptile, and small mammal species. These species would not be impacted as part of this alternative. There would be no impacts to vegetation and wildlife species during the short-term. Long-term impacts would be negligible.

Cumulative Impacts

The No Action Alternative would result in negligible impacts to vegetation and wildlife. Other projects planned in the area that would result in the loss of habitat would force terrestrial wildlife to find new habitat. This may increase the number of species that utilize the Project Area.

Conclusion

Under the No Action Alternative, there would be no direct impacts to either the aquatic or terrestrial vegetation or to wildlife communities because no construction would take place under this alternative. Routine maintenance and wetland remediation would occur during long-term operation of Anacostia Park under the No Action Alternative. However, there would be no loss of habitat under this alternative; thus, the long-term impacts would be negligible. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

4.4.3.3 Alternative 1

Direct and Indirect Impacts

Aquatic Resources

The aquatic vegetation and wildlife communities most associated with Project Area are found in the Anacostia River. These communities are suffering from poor health and low diversity. Currently, there are no species of submerged aquatic vegetation near the Project Area and the aquatic wildlife exhibit signs of health problems. The major source of this problem is poor water quality, the result of pollution from non-point sources. In the case of the Anacostia River, the urban watershed has led to contaminated stormwater entering the Anacostia's tributaries and the River itself.

Alternative 1 would provide stormwater management facilities to aid in the retention and filtration of stormwater runoff generated by the developed areas. This has the potential to increase the health and indirectly the diversity of the aquatic biota through the introduction of clean water. The long-term impacts to aquatic vegetation and wildlife would be minor and positive.

Terrestrial Resources

Wetland habitat is located in the central part of Poplar Point, which is unusual given the area's urban context. Alternative 1 proposed to preserve all of the existing wetlands and, in essence, preserve this habitat. The vegetative species associated with the wetlands, however, are primarily invasive. Invasive species can dominate an ecosystem and eliminate any of the native species that were once there. Native species tend to be adapted to their environment and use resources accordingly. Invasive species provide a threat to an ecosystem due to their excessive resource consumption. As such, restoration and remediation of the wetlands under Alternative 1 would involve the removal of invasive species from the wetlands and replacement with native species the short- and long-term impacts to wetland habitat would be minor and positive.

Outside of the wetland areas, the majority of the habitat within the Project Area is upland and meadows. These areas are characterized by open fields and grasses. Some of these areas, specifically the area near the point and in the far southeastern corner within Poplar Point, would be lost due to development. Similarly, relocation of the USPP headquarters and aviation facility to the North Field would require removal of this habitat. Part of the land transfer requires the retention of 70 acres of parkland within Poplar Point, leaving half of the site undeveloped. Similarly, most of southern Anacostia Park would continue to remain parkland. Thus, Alternative 1 would result in the removal of approximately 40 acres of upland and meadow out of a total of 250 acres within the Project Area. The impact would be minor.

Removal of existing vegetation for the development of Poplar Point and relocation of the USPP headquarters and aviation facility to the North Field would require the removal of mature trees. These trees are a mix of native and nonnative species, mostly associate with the former use of Poplar Point as a tree nursery. Some of the existing trees measure more than 55 inches in circumference which meets the District's definite of special

trees. As such, removal of special trees would be a moderate adverse impact and replacement would be required.

Removal of trees also has the potential to adversely impact migratory bird species if tree removal occurs during the nesting/breeding season. In accordance with the Migratory Bird Treaty Act, pre-construction surveys for nesting bird species would be required. If nesting bird species are present, the construction contractor would be required to maintain a minimum 300 foot buffer (50 feet for raptor species) until the young have fledged. Compliance with the Migratory Bird Species Act would ensure that the impact is reduced to minor.

Sensitive or Endangered Species

Impacts to endangered, threatened, or sensitive species would result from the loss of habitat. Each of the following species have been identified in Section 3.3.3.3 as being listed by federal or District governments.

- Arctic peregrine falcon: Short-term impacts would be mitigated through compliance with the Migratory Bird Treaty Act. Long-term impacts would be minor due to the abundance of meadow habitat in the Project Area.
- Hay's Spring amphipod: Short-term impacts would be mitigated through the implementation of BMPs and the SWPPP. Long-term impacts would be negligible due to absence of surface water within the Project Area.
- Willow Flycatcher: Short-term impacts would be mitigated through compliance with the Migratory Bird Treaty Act. Long-term impacts would be negligible due to the preservation of the species' wetland habitat.
- Northern spring peeper: Short-term and Long-term impacts would be negligible due to the preservation of the species' wetland habitat.
- Red-shouldered Hawk: Short-term impacts would be mitigated through compliance with the Migratory Bird Treaty Act. Long-term impacts would be minor due to the abundance of meadow habitat in the Project Area.
- Eastern cottontail: Short-term and Long-term impacts would be minor due to the abundance of meadow habitat in the Project Area.
- Virginia opossum: Short-term and Long-term impacts would be negligible due to the preservation of the species' meadow and wetland habitats.
- Eastern garter snake: Short-term and Long-term impacts would be negligible due to the preservation of the species' meadow habitat.
- Five-lined skink: Short-term and Long-term impacts would be negligible due to the preservation of the species' wetland habitat.
- Northern brown snake: Short-term and Long-term impacts would be negligible due to the preservation of the species' wetland habitat.
- Brown thrasher: Short-term impacts would be mitigated through compliance with the Migratory Bird Treaty Act. Long-term impacts would be negligible due to the preservation of the species' wetland habitat.

- Prothonotary warbler: Short-term impacts would be mitigated through compliance with the Migratory Bird Treaty Act. Long-term impacts would be negligible due to the preservation of the species' wetland habitat.

Cumulative Impacts

Alternative 1 would result in the loss of upland meadow habitat and removal of mature trees, which would force some terrestrial wildlife off-site. This could yield an adverse impact when analyzed with projects within the vicinity. However, due to the ample amount of this type of habitat within proximity to the Project Area, no major cumulative adverse impacts would occur.

Conclusion

The inclusion of stormwater management features in the redevelopment of Poplar Point would have a positive impact on the Anacostia River's water quality over time. This would yield long-term moderate positive impacts to the submerged aquatic vegetation and aquatic wildlife. The preservation and remediation of wetland habitat under Alternative 1 would have a long-term moderate positive impact; however, moderate short-term adverse impacts may be experienced during remediation. There would be a minor long-term impact to upland and meadow habitat associated with the development of 40 acres in Poplar Point and relocation of the USPP headquarters and aviation facility to the North Field. This would also require the removal of mature trees loss of these resources would be a moderate short-term impact. With implementation of mitigation, there would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- To maximize the habitat benefits, proposed plantings should include native vegetation that would survive well in urban settings, require low maintenance, and encourage native birds to remain in the area.
- To minimize adverse effects associated with the loss of mature trees, the developer should retain existing site trees to the extent possible. The drip lines of mature trees that can be retained in place should be fenced by a certified arborist prior to the start of construction. Mature trees that cannot be retained in place should be salvaged and reused within site landscaping to the extent feasible. If it is not feasible to retain the trees onsite, salvaged trees should be relocated within the Anacostia Park in coordination with NPS.
- The District should inform the construction contractor(s), prior to the bidding process, about the biological constraints of the Project Area. The construction contractor(s) should be responsible for impacts to sensitive biological resources beyond those identified in this report that occur as a direct result of construction activities. All sensitive habitat areas to be avoided should be clearly marked on proposed project maps provided to the contractor by a qualified biologist. These areas should be designated as "no construction" zones. The project biologist should flag these areas prior to the onset of construction activities. Resources may need to be fenced or otherwise protected from direct or indirect impacts.

- Compliance with the Migratory Bird Treaty Act restricts the killing, taking, collecting, and selling or purchasing of native bird species or their parts, nests, or eggs. Although no permit is issued under the Migratory Bird Treaty Act, if vegetation removal within the Project Area occurs during the breeding season for raptors and migratory birds (generally February 15 through September 15), the U.S. Fish and Wildlife Service requires that surveys be conducted to locate active nests within the construction area. If active raptor or migratory bird nests are detected, proposed project activities may be temporarily curtailed or halted. A qualified biologist should perform the pre-construction surveys and would monitor construction activities that occur within the breeding season surveys and would monitor construction activities that occur within the breeding season.

4.4.3.4 Alternative 2

Direct and Indirect Impacts

Aquatic Resources

Similar to Alternative 1, the long-term impacts to aquatic vegetation and wildlife under Alternative 2 would be beneficial. These communities are currently suffering from poor health and low diversity with the major source of this problem is low water quality, the result of pollution from non-point sources. Alternative 2 would provide stormwater management to aid in the retention and filtration of stormwater runoff generated by the developed areas. This retention and filtration has the potential to increase the health and diversity of the aquatic biota, through the introduction of clean water. The primary filtration would occur within the new man-made wetlands that are proposed under Alternative 2 at the edge of the development and along the shoreline. It is anticipated that the man-made wetlands will function at the same level as the existing, natural wetlands and will not require remediation.

The wetland habitat located in the central part of Poplar Point is unusual given the site's urban context. Alternative 2 would remove all of the existing wetlands and create new wetlands along the shoreline and at the edges of development within Poplar Point. Wetlands would be replaced at a ratio of 3:1 resulting in more wetland habitat following completion of Poplar Point than currently exists. As such, the long-term impact would be more moderate and positive. The short-term impact from the loss of the habitat type would be minor.

Terrestrial Resources

Outside of the wetland area, the majority of the habitat within the Project Area is upland and meadows characterized by open fields and grasses. Under Alternative 2, a majority of these areas would be retained. However, a total of 34 acres would be lost due to the development of Poplar Point and relocation of the USPP headquarters to the North Field. This impact would be moderate because of the 220 acres of upland and meadow habitat would be retained.

Sensitive or Endangered Species

Similar to Alternative 1, impacts to endangered, threatened, or sensitive species would result from the loss of habitat. The impacts to the habitats of the Arctic peregrine falcon, Hay's spring amphipod, Red-shouldered hawk, Eastern cottontail, Virginia opossum, and Eastern garter snake would all be similar to that of Alternative 1. The following species would differ:

- Willow Flycatcher: Short-term impacts would be mitigated through compliance with the Migratory Bird Treaty Act. Long-term impacts would be major and adverse until the species' wetland habitat fully develops.
- Northern spring peeper: Short-term and Long-term impacts would be major and adverse until the species' wetland habitat fully develops.
- Five-lined skink: Short-term and Long-term impacts would be major and adverse until the species' wetland habitat fully develops.
- Northern brown snake: Short-term and Long-term impacts would be major and adverse until the species' wetland habitat fully develops.
- Brown thrasher: Short-term impacts would be mitigated through compliance with the Migratory Bird Treaty Act. Long-term impacts would be major and adverse until the species' wetland habitat fully develops.
- Prothonotary warbler: Short-term impacts would be mitigated through compliance with the Migratory Bird Treaty Act. Long-term impacts would be major and adverse until the species' wetland habitat fully develops.

Cumulative Impacts

Alternative 2 would see the loss of natural wetland habitat, which would be offset by the creation of new wetlands. In addition, 38 acres of upland and meadow habitat would be permanently removed. This may force some terrestrial wildlife off-site. This could yield an adverse impact after the implementation of other projects within the vicinity, and the impact is compounded by the lack of wetland habitat in the region.

Conclusion

The inclusion of stormwater management features throughout Poplar Point would have a positive impact on the Anacostia River's water quality over time. This improvement to water quality would enhance the current habitat afforded by the Anacostia River, yielding long-term moderate positive impacts to the submerged aquatic vegetation and aquatic wildlife. Due to the removal of the natural wetlands, the majority of the 70 acre park would consist of upland meadow under Alternative 2. This could result in a moderate long-term impact to terrestrial wetland species that would be forced to find new habitat, which is rare in the urban context. With implementation of mitigation, there would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.4.3.5 Alternative 3

Direct and Indirect Impacts

Aquatic Resources

Similar to Alternatives 1 and 2, the long-term impacts to aquatic vegetation and wildlife under Alternative 3 would be beneficial. These communities are currently suffering from poor health and low diversity with the major source of this problem is low water quality, the result of pollution from non-point sources. Alternative 3 would provide stormwater management to aid in the retention and filtration of stormwater runoff generated by the developed areas. This retention and filtration has the potential to increase the health and diversity of the aquatic biota, through the introduction of clean water.

The wetland habitat located in the central part of Poplar Point is unusual given the site's urban context. Alternative 3 proposes to preserve the healthiest existing wetlands and would remove the remaining wetland habitat. Approximately 2.18 acres of wetland would be removed within Poplar Point. The short-term impact would be minor. New wetlands would be established as a replacement ratio of 3:1 resulting in 6.24 acres of new wetland habitat. As such, the long-term impacts would be moderate and positive.

Terrestrial Resources

Outside of the wetland area, the majority of the habitat is upland and meadows, characterized by open fields and grasses. Some of these areas, specifically the western half of the site, would be lost due to development. Part of the land transfer requires the maintenance of 70 acres of parkland; thus, at least half of the site would be undeveloped.

Terrestrial wildlife species communities that inhabit the site would be impacted. Half of the current wetland habitat would be removed under Alternative 3 and all of the meadows located in the eastern half of the site would be removed. A major portion of the 70 acres of parkland under Alternative 3 would be focused on the western side. As a result, development would occur in both the wetland and upland areas. The wildlife species in these areas would be forced to find new habitat. Similar upland habitat does, however, exist north of Poplar Point in Anacostia Park.

Sensitive or Threatened Species

Impacts to endangered, threatened and sensitive species would be similar to Alternative 1 because the most productive wetland habitats would be preserved. Further, the removal of meadow habitat would also be at a similar rate.

Cumulative Impacts

Alternative 3 would result in the loss of upland meadow habitat and removal of mature trees, which would force some terrestrial wildlife off-site. This could yield an adverse impact when analyzed with projects within the vicinity. However, due to the ample amount of this type of habitat within proximity to Poplar Point, no major cumulative adverse impacts would occur.

Conclusion

Similar to Alternative 1, long-term moderate positive impacts to the submerged aquatic vegetation and aquatic wildlife would result from stormwater management. The expansion and remediation of wetland habitat under Alternative 3 would have a long-term moderate positive impact; however, moderate short-term adverse impacts may be experienced during remediation and creation. There would be a minor long-term impact to upland and meadow habitat associated with the development of 40 acres in Poplar Point and relocation of the USPP headquarters and aviation facility to the North Field. This would also require the removal of mature trees loss of these resources would be a moderate short term impact. With implementation of mitigation, there would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

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URBAN SYSTEMS

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4.5.1 Water Supply

4.5.1.1 Methodology and Assumptions

The following describes the methodology and assumptions used in determining the impacts the Proposed Action would have on potable water supply. This section details the methods used for evaluation, the geographic area that encompasses these resources, and the thresholds used for determining the magnitude of the impacts.

Analysis Methods

A general analysis to determine the impacts of the Proposed Action was conducted through a review of existing literature and contacting the utility service providers. Literature included environmental reports and analyses conducted within the vicinity of Project Area site to gain an understanding of the site's context, and review of the utility service providers' websites and other public data sources.

Assumptions

The geographic area used in the analysis to determine the impacts the Proposed Action would have on water supply includes the Project Area, as well as the larger service area.

Impact Thresholds

To adequately define the magnitude of impact on water supply, the following thresholds were established. These thresholds describe the impacts of the Proposed Action relative to the site's existing conditions.

Negligible: Impacts would be imperceptible or not detectable. There would be no increase in demand for potable water supply or change to the existing infrastructure required to accommodate the action. Mitigation would not be required.

Minor: Impacts would be slightly perceptible and there would be a small increase in demand compared to existing conditions. Minor adverse impacts would not require additional supply or changes to the existing utility infrastructure for potable water service. The increase in demand would be accommodated by existing water sources. Mitigation would not be required.

Moderate: Impacts would be apparent or would involve an increase in demand compared to existing conditions. Moderate adverse impacts would result in the need for changes to existing infrastructure to accommodate the increase in demand. Mitigation measures would be required.

Major: Major adverse impacts would pose a substantial risk of degrading the overall stability of the area's water supply and water service infrastructure. New infrastructure would be required to accommodate demand or the increased demand for potable water could not be accommodated by

the service provider. New potable water sources would be required to accommodate the action. Affects could go beyond the point of impacts.

Duration

Short-term impacts include those that would occur during the development phases; long-term impacts include those that would persist after the development phase.

4.5.1.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no major physical changes to the Project Area. The Project Area would continue to operate as the southern extent of Anacostia Park, routine maintenance activities would continue to occur. The entirety of Project Area would continue to remain under the control of the NPS. The NPS and the USPP would remain in their current locations. The existing facilities would remain in place and there would not be a substantial change in visitor levels.

Because no new uses would be developed onsite, there would be no increase in demand for water supply. Further, construction of new water service infrastructure would not be required because there would be no increase in demand. Short and long-term direct and indirect impacts to water service would be negligible.

Cumulative Impacts

The No Action Alternative, when considered together with ongoing or planned projects in the area, would not contribute to a cumulative impact to water supply or water service infrastructure. The development of Poplar Point would not occur as part of the No Action Alternative. The remainder of the Project Area would continue to function as under existing conditions. As such, there would be no increase in demand for water in the Project Area. Therefore, the No Action Alternative would not contribute to a cumulative increase in demand. The cumulative impact would be negligible.

Conclusion

Implementation of the No Action Alternative would have a negligible impact on water supply. No changes in the Project Area would occur under the No Action Alternative. Therefore, there would be no increase in demand for water supply and no extension of water supply infrastructure would be required. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

4.5.1.3 Alternative 1

Direct and Indirect Impacts

Alternative 1 proposes to redevelop approximately 40 acres of Poplar Point with approximately 6.5 million gsf of retail, residential, office, and other civic/cultural uses. The remainder of Poplar Point would be

developed with park and open space. The existing USPP headquarters and aviation facility would be relocated to the North Field and park improvements would be implemented in southern Anacostia Park. The new development at the site as part of Alternative 1 would substantially increase the demand for potable water supply compared to the existing uses. It is expected that demand would increase by approximately 1.2 mgd per day without accounting for any sustainability initiatives or other water efficiency measures. It should be noted that under Alternative 1, the proposed new development would incorporate sustainable practices where feasible. With application of standard water conservation measures, including low-flow fixtures in kitchens and bathrooms, Alternative 1 could obtain in the range of a 20% to 30% reduction in water use that has not been incorporated into the projected water demand. WASA maintains adequate water supply to meet the system demands for potable water service and fire-fighting requirements. Further, an authorization report would be required from WASA to confirm that adequate water supplies are available before development of the Project Area would commence. As such, there would be adequate water supply for WASA's service area during operation of Alternative 1. The long term impact to water supply would be minor.

The increase in demand for potable water supply, as well as the location of development under Alternative 1, would necessitate the extension of water infrastructure to and within Poplar Point. There is currently limited water supply infrastructure located within the site. The only water service in the central part of Poplar Point is provided by an 8-inch cast/ductile iron line dating from approximately 1953, which crosses under I-295 at Chicago Street SE, to serve the complex of NPS buildings in that section of Poplar Point. A new loop system and tunnel would need to be constructed beneath I-295 to bring potable water to Poplar Point at a volume that would meet water pressure requirements for fire-fighting purposes and commercial and residential service. A portion of the existing 36-inch water line adjacent to the 11th Street Bridges would need to be relocated. In addition, smaller lines would need to be constructed throughout the two development nodes as part of construction of Alternative 1 to service these areas within Poplar Point. New supply lines would also need to be constructed to extent water infrastructure to the North Field from the supply lines that serve the skating pavilion. Construction of new water infrastructure has been analyzed as part of the build-out of Alternative 1 for all resource areas. The direct long-term impact to water infrastructure would be minor. However, indirect impacts would occur when new connections would be made to existing water mains. Temporary service interruptions could occur during the connection of new service. The short-term indirect impact would be moderate.

Cumulative Impacts

Implementation of Alternative 1 would increase the demand for potable water service. This, in turn, would increase the total demand in WASA's service area. Past, present, and future development projects within WASA's service area would place additional demands on water supply and water pressure. This change, when considered together with other projects within the study area, would contribute to a moderate cumulative impact to water supply. Implementation of mitigation measures is required to increase efficiency.

Conclusion

Alternative 1 would substantially increase demand for potable water in the Project Area compared to existing conditions. However, sufficient water supply is available to accommodate this growth and efficiencies have

been incorporated into project design. As such, it would have long-term minor adverse impact to water supply. Short-term minor adverse impacts would occur during the connection of new water supply infrastructure to WASA's system if service breaks are required. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- The developer of Poplar Point should obtain Leadership in Energy Efficiency and Design (LEED) certification.
- Native and drought-tolerant plants should be incorporated into landscaping plan for Poplar Point.
- A graywater irrigation system should be implemented within Poplar Point.
- All new structures should be constructed to incorporate and install low-flow shower heads and water efficient faucets and toilets.

4.5.1.4 Alternative 2

Direct and Indirect Impacts

Alternative 2 proposes to redevelop approximately 40 acres within Poplar Point with approximately 6.1 million gsf of retail, residential, office, and other civic/cultural uses. This amount of development would yield a similar demand for potable water as Alternative 1 and also similar impacts. As such, there would be adequate water supply for WASA's service area during operation of Alternative 2. The long-term impact to water supply would be minor.

The increase in demand for potable water supply, as well as the location of development under Alternative 2 would necessitate the extension of water infrastructure to and within Poplar Point. Alternative 2 proposes to cluster new development in the central part of the site near the Metro station. However, there is currently limited water supply infrastructure located within the site. The only water service in the central part of the site is provided by an 8-inch cast/ductile iron line dating from approximately 1953, which crosses under I-295 at Chicago Street SE, to serve the complex of NPS buildings in that section of Poplar Point. A new loop system and tunnel would need to be constructed beneath I-295 to bring potable water to the site at a volume that would meet water pressure requirements for fire-fighting purposes and commercial and residential service. Construction of new water infrastructure has been analyzed as part of the build-out of Alternative 2 for all resource areas. The direct long-term impact to water supply would be moderate. However, temporary indirect impacts would occur when new connections would be made to existing water mains. Temporary service interruptions could occur during the connection of new service. The short-term indirect impact would be adverse.

Cumulative Impacts

Implementation of Alternative 2 would increase the demand for potable water service. This, in turn, would increase the total demand in WASA's service area. Past, present and future development projects within WASA's service area would place additional demands on water supply and water pressure. This change, when

considered together with other projects within the study area, would contribute to a moderate adverse cumulative impact to water supply.

Conclusion

Alternative 2 would substantially increase demand for potable water in the Project Area compared to existing conditions. As such, it would have long-term moderate adverse impact to water supply. Short-term temporary impacts would occur during the connection of new water supply infrastructure at the site to WASA's system if service breaks are required. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.5.1.5 Alternative 3

Direct and Indirect Impacts

Alternative 3 proposes to redevelop approximately 40 acres of the site with approximately 6.1 million gsf of retail, residential, office, and other civic/cultural uses. This amount of development would yield a similar demand for potable water as Alternatives 1 and 2 and also similar impacts. As such, there would be adequate water supply for WASA's service area during operation of Alternative 2. The long-term impact to water supply would be minor.

The increase in demand for potable water supply, as well as the location of development under Alternative 3 would necessitate the extension of water infrastructure to and within Poplar Point. Alternative 3 proposes to cluster new development in the eastern portion of the site near Good Hope Road SE. However, there is currently limited water supply infrastructure located within the site. The only water service in the central part of the site is provided by an 8-inch cast/ductile iron line dating from approximately 1953, which crosses under I-295 at Chicago Street SE, to serve the complex of NPS buildings in that section of the site. A new loop system and tunnel would need to be constructed beneath I-295 to bring potable water to the site at a volume that would meet water pressure requirements for fire-fighting purposes and commercial and residential service. In addition, the existing 36-inch potable water line located the eastern portion of the site would need to be relocated and new smaller water mains would need to be constructed to service the proposed development. Construction of new water infrastructure has been analyzed as part of the build-out of Alternative 3 for all resource areas. The direct long-term impact to water supply would be moderate. However, temporary indirect impacts would occur when new connections would be made to existing water mains. Temporary service interruptions could occur during the connection of new service. The short-term indirect impact would be adverse.

Cumulative Impacts

Implementation of Alternative 3 would increase the demand for potable water service. This, in turn, would increase the total demand in WASA's service area. Past, present and future development projects within WASA's service area would place additional demands on water supply and water pressure. This change, when considered together with other projects within the study area, would contribute to a moderate adverse cumulative impact to water supply.

Conclusion

Alternative 3 would substantially increase demand for potable water in the Project Area compared to existing conditions. As such, it would have long-term moderate adverse impact to water supply. Short-term minor adverse impacts would occur during the connection of new water supply infrastructure at the site to WASA's system if service breaks are required. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.5.2 Sanitary Sewer and Stormwater Infrastructure

4.5.2.1 Methodology and Assumptions

The following describes the methodology and assumptions used in determining the impacts the Proposed Action would have on sanitary sewer treatment capacity and infrastructure, and stormwater infrastructure. This section details the methods used for evaluation, the geographic area that encompasses these resources, and the thresholds used for determining the magnitude of the impacts.

Analysis Methods

A general analysis to determine the impacts of the Proposed Action was conducted through a review of existing literature and contacting the utility service providers. Literature included environmental reports and analyses conducted within the vicinity of the Project Area site to gain an understanding of the site's context, and review of the utility service providers' websites and other public data sources.

Assumptions

The geographic area used in the analysis to determine the impacts the Proposed Action would have on sanitary sewer and stormwater infrastructure include the Project Area, as well as the larger service area.

Impact Thresholds

To adequately define the magnitude of impact on sanitary sewer and stormwater infrastructure, the following thresholds were established. These thresholds describe the impacts of the Proposed Action relative to the site's existing conditions.

Negligible: Impacts would be imperceptible or not detectable. There would be no increase in demand for sanitary sewer service, no change in the amount of stormwater generated, and no change to the existing infrastructure required to accommodate the action. Mitigation would not be required.

Minor: Impacts would be slightly perceptible and there would be a small increase in demand compared to existing conditions. Minor adverse impacts would not require additional capacity or changes to the existing utility infrastructure for sanitary sewer or stormwater.

Moderate: Impacts would be apparent and would involve an increase in demand compared to existing conditions. Moderate adverse impacts would result in the need for changes to existing infrastructure to accommodate the increase in demand. Mitigation measures would be required.

Major: Major adverse impacts would pose a substantial risk of degrading the overall stability of the area's sanitary sewer and stormwater infrastructure. New infrastructure would be required to accommodate demand or the increased demand for sanitary sewer and stormwater treatment could not be accommodated by the service provider. Affects could go beyond the point of impacts.

Duration

Short-term impacts include those that would occur during the development phases; long-term impacts include those that would persist after the development phase.

4.5.2.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no substantial physical changes to the Project Area. The entirety of the Project Area would continue to remain under the control of NPS and operated as the southern extent of Anacostia Park. NPS and USPP would remain in their current locations.

Because no new uses would be developed onsite, there would be no increase in demand for sanitary sewer service or upgraded sanitary sewer infrastructure. The amount of impervious surfaces located on-site would not change. Thus, there would be no increase in demand for stormwater infrastructure. Short and long-term direct and indirect impacts to sanitary sewer service and stormwater infrastructure would be negligible.

Cumulative Impacts

The No Action Alternative, when considered together with ongoing or planned projects in the area, would not contribute to a cumulative impact to sanitary sewer service or stormwater infrastructure. No changes to the Project Area would occur as part of the No Action Alternative. As such, there would be no increase in demand for sanitary sewer service. Further, there would be no increase in impervious surface area that would contribute to cumulative impacts to stormwater infrastructure. The cumulative impacts would be negligible.

Conclusion

Implementation of the No Action Alternative would have a negligible impact on sanitary sewer service and stormwater infrastructure. No changes to the Project Area would occur under the No Action Alternative. Therefore, there would be no increase in demand and no extension of infrastructure would be required. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

4.5.2.3 Alternative 1

Direct and Indirect Impacts

As discussed previously, water consumption in the Project Area would be expected to increase by approximately 1.2 mgd per day. The resultant amount of wastewater ultimately discharged into the sanitary sewer system would be expected to increase by approximately 1.05 mgd per day. This would increase demand at WASA's Blue Plains WTP. The capacity of Blue Plains WTP exceeds the current demand for wastewater treatment. As such, there would be adequate capacity for sanitary sewer treatment during operation of Alternative 1. However, it should be noted that under Alternative 1, the proposed new

development would incorporate sustainable practices where feasible. With application of standard water conservation measures, such as low-flow fixtures in kitchens and bathrooms, Alternative 1 could obtain in the range of a 20% to 30% reduction in wastewater generation that has not been incorporated into the projected increase in demand for sanitary sewer service.

Under Alternative 1, the existing twin 9-foot and 8-inch by 8-foot and 4-inch interceptor sewers would be retained in their existing locations. In addition, the 108-inch diameter sanitary Anacostia Force Main that traverses Poplar Point along its northern and western sides parallel to the shoreline would not need to be relocated as part of Alternative 1. However, repairs would be required to some portions of this force main in the area of the point. Poplar Point currently contains sanitary sewer service connections in the central portion of Poplar Point where the NPS and USPP facilities are currently located. As such, new infrastructure would not need to be extended to this area. New sewer lines would need to be extended to the North Field to accommodate the relocated USPP headquarters and aviation facility.

Construction of new sewer infrastructure has been analyzed as part of the build-out of Alternative 1 for all resource areas. Installation of new sewer infrastructure has been incorporated into the design of Alternative 1.

The long-term direct impact to sanitary sewer service would be moderate. In addition, indirect impacts would occur when new connections would be made to existing sewer infrastructure. Temporary service interruptions could occur during the connection of new service. The short-term indirect impact would be moderate.

The increased development in the Project Area that would occur as part of Alternative 1 would increase the amount of impervious surfaces located at Poplar Point. Additional stormwater would be generated under this alternative compared to existing conditions. As discussed in Section 4.4.2 Water Resources, sustainable features have been incorporated into the design of Alternative 1 to minimize stormwater discharge. This includes designing the release of 2-year post development stormwater flows at the same level as existing 2-year storm water flows and retaining and treating the first inch of rainfall during a storm event. In addition, water quality BMPs would be implemented for all pervious surfaces. The total demand for stormwater treatment and discharge would not be expected to increase during long-term operation of Alternative 1. The long-term impact would be minor.

As a result of the extension of development to the point and the eastern portion of Poplar Point, new stormwater infrastructure would be added throughout Poplar Point. In addition, a portion of the Stickfoot Branch storm drain in the central portion of the site would need to be relocated, as well as a length of the Chicago Street storm drain. New stormwater infrastructure would also be constructed in the North Field to accommodate the relocated USPP facilities. Construction of new stormwater infrastructure has been analyzed as part of the build-out of Alternative 1 for all resource areas. Installation of new stormwater infrastructure has been incorporated into design of Alternative 1. The impact to stormwater infrastructure would be minor.

Cumulative Impacts

Implementation of Alternative 1 would increase the demand for sanitary sewer treatment. This, in turn, would increase the total demand in WASA's service area. Past, present, and future development projects within WASA's service area would place additional demands on the Blue Plains WTP. This change, when considered together with other projects in the study area, could contribute to a moderate adverse cumulative impact to sanitary sewer service.

Conclusion

Alternative 1 would substantially increase the amount of wastewater generated within Poplar Point compared to existing conditions. As such, it would have long-term moderate operational impact to sanitary sewer service. Short-term minor adverse impacts would occur during the connection of new sewer infrastructure at the site to WASA's system if service breaks are required. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- Rain barrels should be installed on all buildings or underground cisterns should be used to collect stormwater runoff for irrigation purposes.
- Occupancy sensors should be installed in all non-residential restroom fixtures.
- Permeable pavers and other porous paving materials should be used to the extent practicable.
- Graywater systems should be installed for urinals and water closets.

4.5.2.4 Alternative 2

Direct and Indirect Impacts

Alternative 2 would yield similar water consumption and wastewater generation as Alternative 1. This would increase demand at WASA's Blue Plains WTP. The capacity of Blue Plains WTP exceeds the current demand for wastewater treatment. As such, there would be adequate capacity for sanitary sewer treatment during operation of Alternative 2. Alternative 2, also proposes development that would incorporate similar sustainable strategies as Alternative 1.

Under Alternative 2, the existing twin 9-foot and 8-inch by 8-foot and 4-inch interceptor sewers would be retained in their existing locations. In addition, the 108-inch diameter sanitary Anacostia Force Main that traverses the site along its northern and western sides parallel to the shoreline would not need to be relocated as part of Alternative 2. Some new sanitary sewer service connections would be required in the central portion of the site where development is concentrated under Alternative 2. Construction of new sewer infrastructure has been analyzed as part of the build-out of Alternative 2 for all resource areas. Installation of new sewer infrastructure has been incorporated into the design of Alternative 2.

The long-term direct impact to sanitary sewer service would be moderate. In addition, indirect impacts would occur when new connections would be made to existing sewer infrastructure. Temporary service interruptions could occur during the connection of new service. The short-term indirect impact would be adverse.

Long-term impacts to stormwater generation would be minor, similar to Alternative 1. Sustainable features have been incorporated into the design of Alternative 2 to minimize stormwater discharge. As a result, the total demand for stormwater treatment and discharge would not be expected to increase during long-term operation of Alternative 2.

As a result of concentration of development in the central portion of the site, new stormwater infrastructure would be added. In addition, a portion of the Stickfoot Branch storm drain in the central portion of the site would need to be relocated, as well as a length of the Chicago Street storm drain. Construction of new stormwater infrastructure has been analyzed as part of the buildout of Alternative 2 for all resource areas. Installation of new stormwater infrastructure has been incorporated into design of Alternative 2. The impact to stormwater infrastructure would be minor.

Cumulative Impacts

Implementation of Alternative 2 would increase the demand for sanitary sewer treatment. This, in turn, would increase the total demand in WASA's service area. Past, present and future development projects within WASA's service area would place additional demands on the Blue Plains WTP. This change, when considered together with other projects within the study area, could contribute to a moderate adverse cumulative impact to sanitary sewer service.

Conclusion

Alternative 2 would substantially increase the amount of wastewater generated in the Project Area compared to existing conditions. As such, it would have long-term moderate adverse impact to sanitary sewer service. Short-term minor adverse impacts would occur during the connection of new sewer infrastructure at the site to WASA's system if service breaks are required. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.5.2.5 Alternative 3

Direct and Indirect Impacts

Alternative 3 would yield similar water consumption and wastewater generation as Alternatives 1 and 2. This would increase demand at WASA's Blue Plains WTP. The capacity of Blue Plains WTP exceeds the current

demand for wastewater treatment. As such, there would be adequate capacity for sanitary sewer treatment during operation of Alternative 2. Alternative 2, also proposes development that would incorporate similar sustainable strategies as Alternatives 1 and 2.

Under Alternative 3, the existing twin 9-foot and 8-inch by 8-foot and 4-inch interceptor sewers would be retained in their existing locations. In addition, the 108-inch diameter sanitary Anacostia Force Main that traverses the site along its northern and western sides parallel to the shoreline would not need to be relocated as part of Alternative 3. Some new sanitary sewer service connections would be required in the eastern portion of the site where development is concentrated under Alternative 3. Construction of new sewer infrastructure has been analyzed as part of the build-out of Alternative 3 for all resource areas. Installation of new sewer infrastructure has been incorporated into the design of Alternative 3.

The long-term direct impact to sanitary sewer service would be moderate. In addition, indirect impacts would occur when new connections would be made to existing sewer infrastructure. Temporary service interruptions could occur during the connection of new service. The short-term indirect impact would be adverse.

Long-term impacts to stormwater generation would be minor, similar to Alternative 1. Sustainable features have been incorporated into the design of Alternative 2 to minimize stormwater discharge. As a result, the total demand for stormwater treatment and discharge would not be expected to increase during long-term operation of Alternative 2.

As a result of concentration of development in the eastern portion of the site, new stormwater infrastructure would be added. In addition, the entire length of the Stickfoot Branch storm drain in the central portion of the site would need to be relocated, as well as the entire length of the Chicago Street storm drain located along the southern boundary of the site. Construction of new stormwater infrastructure has been analyzed as part of the build-out of Alternative 3 for all resource areas. Installation of new stormwater infrastructure has been incorporated into design of Alternative 3. The impact to stormwater infrastructure would be minor.

Cumulative Impacts

Implementation of Alternative 3 would increase the demand for sanitary sewer treatment. This, in turn, would increase the total demand in WASA's service area. Past, present and future development projects within WASA's service area would place additional demands on the Blue Plains WTP. This change, when considered together with other projects within the study area, could contribute to a moderate adverse cumulative impact to sanitary sewer service.

Conclusion

Alternative 3 would substantially increase the amount of wastewater generated at the Project Area compared to existing conditions. As such, it would have long-term moderate adverse impact to sanitary sewer service. Short-term minor adverse impacts would occur during the connection of new sewer infrastructure at the site to WASA's system if service breaks are required. There would be no irreversible

environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

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4.5.3 Solid Waste Disposal

4.5.3.1 Methodology and Assumptions

The following describes the methodology and assumptions used in determining the impacts the Proposed Action would have on solid waste disposal. This section details the methods used for evaluation, the geographic area that encompasses these resources, and the thresholds used for determining the magnitude of the impacts.

Analysis Methods

A general analysis to determine the impacts of the Proposed Action was conducted through a review of existing literature and contacting the utility service providers. Literature included environmental reports and analyses conducted within the vicinity of the Project Area to gain an understanding of the site's context, and review of the utility service providers' websites and other public data sources.

Assumptions

The geographic area used in the analysis to determine the impacts the Proposed Action would have on solid waste disposal include the Project Area, as well as the larger service area.

Impact Thresholds

To adequately define the magnitude of impact on solid waste, the following thresholds were established. These thresholds describe the impacts of the Proposed Action relative to the existing conditions.

Negligible: Impacts would be imperceptible or not detectable. There would be no increase in demand for solid waste disposal. Mitigation would not be required.

Minor: Impacts would be slightly perceptible and there would be a small increase in demand compared to existing conditions. Minor adverse impacts would include the creation of additional solid waste, but would not require exceed the capacity of the regional solid waste disposal infrastructure. The increase in demand would be accommodated by existing landfills.

Moderate: Impacts would be apparent and would involve an increase in demand compared to existing conditions. Moderate adverse impacts would result in the need for additional landfill capacity to accommodate the increase in demand. Mitigation measures would be required.

Major: Major adverse impacts would pose a substantial risk of exceeding the total capacity of the regional solid waste disposal infrastructure. New landfills would be required to accommodate the increased demand. Affects could go beyond the point of impacts.

Duration

Short-term impacts would include those that occur during the development phases; long-term impacts include those that would persist after the development phase.

4.5.3.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no physical changes to the Project Area. No new uses would be developed within the boundaries of the Project Area. The NPS and the USPP facilities would remain in their current locations and Poplar Point would remain park uses.

Because no new uses would be developed onsite, there would be no short- or long-term increases in the amount of solid waste that would be generated. Thus, there would be no additional demand placed on the regional solid waste disposal infrastructure. Short and long-term direct and indirect impacts to solid waste disposal would be negligible.

Cumulative Impacts

The No Action Alternative, when considered together with ongoing or planned projects in the area, would not contribute to a cumulative impact to solid waste disposal. No changes to the Project Area would occur as part of the No Action Alternative. As such, there would be no increase in demand for landfill capacity. The cumulative impacts would be negligible.

Conclusion

Implementation of the No Action Alternative would have a negligible impact on solid waste disposal. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

4.5.3.3 Alternative 1

Direct and Indirect Impacts

The volume of solid waste generated in the Project Area would increase during construction. Existing structures would be demolished, thereby generating a new short-term moderate waste stream. Building construction would also generate solid waste. Demolished materials would include asbestos-containing materials and lead-based paint that would be disposed of at an appropriate licensed disposal facility. Contaminated soils uncovered during construction would be remediated and/or disposed of at a licensed disposal facility. Disposal of construction-related waste would have a moderate short-term adverse impact on landfill capacity.

During operation of Alternative 1, new residential, commercial, and civic/cultural uses would be located within Poplar Point. The increased development at Poplar Point would generate a substantial amount of net

new tons of solid waste per year compared to the existing recreation uses. Private hauling services would dispose of the waste that is generated onsite. Further, commercial and residential trash generators are required by law to separate recyclable refuse. The private hauling service would then deliver it to an appropriate recycling center in the area. However, a direct, long-term adverse impact to solid waste infrastructure would occur due to the increase in total solid waste produced during operation of Alternative 1.

Cumulative Impacts

Implementation of Alternative 1 would increase the amount of solid waste generated within the Project Area compared to existing conditions. Combined with the other past, present, and future development projects in the vicinity, there would be a total increase in demand for solid waste disposal. As with Alternative 1, the cumulative projects would be required to implement recycling and solid waste diversion projects in accordance with applicable District and federal regulations. However, Alternative 1 would contribute to a long-term moderate cumulative impact to solid waste.

Conclusion

Alternative 1 would substantially increase the amount of solid waste generated within Poplar Point compared to existing conditions. As such, it would have long-term moderate adverse impact to solid waste disposal. Short-term minor adverse impacts would occur during construction when demolition debris would be generated. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- A minimum of 10% of demolition debris should be salvaged for reuse on- or off-site and a minimum of 50% of demolition debris should be recycled.
- The recycling program should obtain a minimum 50% diversion rate during operation.
- All residential structures should be designed to provide enough space for trash and recycling to ensure that all residents of the site participate in the recycling program and to ensure that the site is easily serviceable by the trash hauler.
- All commercial structures should be designed to provide enough space for trash and recycling to ensure that all employees participate in the recycling program and to ensure that the site is easily serviceable by the trash hauler.
- The recycling program should include green waste collection bins.
- Restaurants should have a designated compactor to dispose of food waste and other compostables.
- Restaurants, residential, and commercial uses should have a designated compactor to dispose of regular trash.
- Restaurants, residential, and commercial uses should have a designated compactor to dispose of recyclables.

4.5.3.4 Alternative 2

Direct and Indirect Impacts

Solid waste generation during construction and operation of the site under Alternative 2 would be at a similar rate as Alternative 1. Asbestos-containing materials and contaminated soils will also be treated in a similar manner. As such, disposal of construction-related waste would have a moderate short-term, adverse impact on landfill capacity. Additionally, a direct, long-term adverse impact to solid waste infrastructure would occur due to the increase in total solid waste produced during operation of Alternative 2.

Cumulative Impacts

Implementation of Alternative 2 would increase the amount of solid waste generated by the site at a similar rate as Alternative 1 compared to existing conditions. As such, Alternative 2 would also contribute to a long-term moderate cumulative impact to solid waste.

Conclusion

Alternative 2 would substantially increase the amount of solid waste generated at the Poplar Point site compared to existing conditions. As such, it would have long-term moderate adverse impact to solid waste disposal. Short-term minor adverse impacts would occur during construction when demolition debris would be generated. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.5.3.5 Alternative 3

Direct and Indirect Impacts

Solid waste generation during construction and operation of the site under Alternative 3 would be at a similar rate as Alternatives 1 and 2. Asbestos-containing materials and contaminated soils will also be treated in a similar manner. As such, disposal of construction-related waste would have a moderate short-term, adverse impact on landfill capacity. Additionally, a direct, long-term adverse impact to solid waste infrastructure would occur due to the increase in total solid waste produced during operation of Alternative 3.

Cumulative Impacts

Implementation of Alternative 3 would increase the amount of solid waste generated by the site at a similar rate as Alternatives 1 and 2 compared to existing conditions. As such, Alternative 3 would also contribute to a long-term moderate cumulative impact to solid waste.

Conclusion

Alternative 3 would substantially increase the amount of solid waste generated at Poplar Point compared to existing conditions. As such, it would have long-term moderate adverse impact to solid waste disposal. Short-term minor impacts would occur during construction when demolition debris would be generated. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

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4.5.4 Energy Systems

4.5.4.1 Methodology and Assumptions

The following describes the methodology and assumptions used in determining the impacts the proposed action would have on electricity and natural gas service. This section details the methods used for evaluation, the geographic area that encompasses these resources, and the thresholds used for determining the magnitude of the impacts.

Analysis Methods

A general analysis to determine the impacts of the Proposed Action was conducted through a review of existing literature and contacting the utility service providers. Literature included environmental reports and analyses conducted within the vicinity of Project Area to gain an understanding of the site's context, and review of the utility service providers' websites and other public data sources.

Assumptions

The geographic area used in the analysis to determine the impacts the Proposed Action would have on energy systems include the Project Area, as well as the larger service area.

Impact Thresholds

To adequately define the magnitude of impact on energy systems, the following thresholds were established. These thresholds describe the impacts of the Proposed Action relative to the existing conditions.

Negligible: Impacts would be imperceptible or not detectable. There would be no increase in demand for electricity or natural gas service. Mitigation would not be required.

Minor: Impacts would be slightly perceptible and there would be a small increase in demand compared to existing conditions. Minor adverse impacts would not require the addition of new electricity or natural gas capacity. The increase in demand could be accommodated by existing energy sources.

Moderate: Impacts would be apparent and would involve an increase in demand compared to existing conditions. Moderate adverse impacts would result in the need for additional electricity or natural gas supply. Mitigation measures would be required.

Major: Major adverse impacts would pose a substantial risk of exceeding the total capacity of the regional supply for electricity and natural gas service. New energy sources would be required to accommodate the increased demand. Impacts could go beyond the point of impacts.

Duration

Short-term impacts would include those that occur during the development phases; long-term impacts include those that would persist after the development phase.

4.5.4.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no physical changes to the Project Area. No new uses would be located within the site boundaries. Because no new uses would be developed on-site, there would be no short- or long-term increases in the amount of electricity or natural gas required to power the current facilities. Thus, there would be no additional demand placed on the PEPCO or Washington Gas supply or transmission networks. Short and long-term direct and indirect impacts to energy systems would be negligible.

Cumulative Impacts

The No Action Alternative, when considered together with ongoing or planned projects in the area, would not contribute to a cumulative impact to energy systems. No changes to the Project Area would occur as part of the No Action Alternative. As such, there would be no increase in demand for electricity or natural gas service. The cumulative impacts would be negligible.

Conclusion

Implementation of the No Action Alternative would have a negligible impact on energy systems. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

4.5.3.3 Alternative 1

Direct and Indirect Impacts

Upon buildout of Poplar Point under Alternative 1, approximately 6.5 million gsf of new retail, residential, office, and other civic/cultural uses would be in use. Compared to the existing operation of the Project Area with a park, the demand for electricity and natural gas would increase. Alternative 1 would implement sustainable building practices within Poplar Point that would orient buildings, to the extent practicable, to take advantage of natural heating, cooling and lighting. Further, all new structures would incorporate modern appliances, HVAC systems, and fixtures, which are more energy efficient than older models. Buildings constructed as part of Alternative 1 would be required to implement energy conservation strategies in accordance with District and federal requirements. However, there would be a substantial increase in demand for electricity and natural gas created by the build-out of Poplar Point as part of Alternative 1 compared to existing conditions. No change in electricity or natural gas consumption would be anticipated to result from the relocation of the USPP headquarters and aviation facility to the North Field. PEPCO and

Washington Gas have indicated that long-range plans account for the increase in demand and supply would be available. However, the long-term impact to energy systems would be moderate.

Specific details as to the location of any new service distribution and connections would be coordinated with PEPCO and Washington Gas at the time detailed building plans are developed for Poplar Point. Electrical and natural gas service is currently provided on-site for the NPS and USPP facilities. Additional connections and utility lines would be required to reach the Poplar Point node, to upgrade the facilities within Poplar Point and extend infrastructure to the North Field. Construction of new electricity and natural gas infrastructure has been analyzed as part of the build-out of Alternative 1 for all resource areas.

Cumulative Impacts

Past, present, and future development places demands on electricity and natural gas service in the region. While Washington Gas and PEPCO have plans to accommodate regional growth, each future project would be required to prepare studies to determine if their supply is adequate or if on-site power generation would be required. Alternative 1 would contribute to a long-term moderate cumulative impact to electricity and natural gas service.

Conclusion

Alternative 1 would substantially increase demand for electricity and natural gas within the Project Area compared to existing conditions. As such, it would have long-term moderate adverse impact to energy systems. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- Passive heating and cool systems should be installed on all residential and office structures.
- Energy conservation measures should be incorporated into building design and construction, including but not limited to, building orientation, energy efficient window glazing, energy efficient lighting, light occupancy sensors, and Energy Star appliances.

4.5.3.4 Alternative 2

Direct and Indirect Impacts

Similar to Alternative 1, implementation of Alternative 2 would have a moderate long-term impact to energy systems would be moderate. Upon build-out of Poplar Point under Alternative 2, approximately 6.1 million gsf of new development on the site. Compared to the existing NPS and USPP facilities, the demand for electricity and natural gas would increase, however, PEPCO and Washington Gas have indicated that long-range plans account for the increase in demand and supply would be available. Alternative 2 would implement sustainable building practices, similar to Alternative 1, to the extent practicable.

Coordination similar to Alternative 1 with PEPCO and Washington Gas on specific details as to the location of any new service distribution and connections would be conducted under Alternative 2.

Cumulative Impacts

Past, present and future development places demands on electricity and natural gas service in the region. While Washington Gas and PEPCO have plans to accommodate regional growth, each future project would be required to prepare studies to determine if their supply is adequate or if on-site power generation would be required. Alternative 2 would contribute to a long-term moderate cumulative impact to electricity and natural gas service.

Conclusion

Alternative 2 would substantially increase demand for electricity and natural gas in the Project Area compared to existing conditions. As such, it would have long-term moderate adverse impact to energy systems. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.5.3.5 Alternative 3

Direct and Indirect Impacts

Similar to Alternatives 1 and 2, implementation of Alternative 3 would have a moderate long-term impact to energy systems would be moderate. Upon build-out of Poplar Point under Alternative 3, approximately 6.1 million gsf of new development on the site. Compared to the existing NPS and USPP facilities, the demand for electricity and natural gas would increase, however, PEPCO and Washington Gas have indicated that long-range plans account for the increase in demand and supply would be available. Alternative 3 would implement sustainable building practices, similar to Alternatives 1 and 2, to the extent practicable.

Coordination similar to Alternatives 1 and 2 with PEPCO and Washington Gas on specific details as to the location of any new service distribution and connections would be conducted under Alternative 3.

Cumulative Impacts

Past, present and future development places demands on electricity and natural gas service in the region. While Washington Gas and PEPCO have plans to accommodate regional growth, each future project would be required to prepare studies to determine if their supply is adequate or if on-site power generation would be required. Alternative 3 would contribute to a long-term moderate cumulative impact to electricity and natural gas service.

Conclusion

Alternative 3 would substantially increase demand for electricity and natural gas in the Project Area compared to existing conditions. As such, it would have long-term moderate adverse impact to energy systems. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

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4.6

TRANSPORTATION

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4.6.1 Roadway Capacity and Volumes

This section of the EIS summarizes the analysis completed to evaluate the traffic and transportation conditions of the alternatives presented. The purpose of this analysis is to identify and highlight the transportation differences and/or similarities among the alternatives. This includes the impacts to pedestrians, bicycles, transit, and roadways and traffic. This section begins by outlining an overview of the analysis methodology employed. Following this, a description of the planned projects and future roadway conditions is provided to define the study area and a baseline for comparison.

4.6.1.1 Methodology and Assumptions

Analysis Methods

Trip Generation

Traditionally, trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation*, 8th Edition (2008). However, for this analysis, the methodology was supplemented to account for the urban nature of the Project Area (*Trip Generation* typically provides data for non-urban, low transit use sites) and to generate trips for multiple modes of travel, including vehicles, pedestrians, bicycles, and transit.

The trips generated by site's current uses as a park and the NPS and USPP facilities would not be expected to change. While some of the circulation patterns may change (i.e. from moving the USPP facility to the North Field) the overall impact would be negligible. As such, this analysis focuses primarily on the development at Poplar Point as the major contributor to increased trip generation under the Proposed Action.

In order to calculate the number of trips by mode for Poplar Point, ITE *Trip Generation* was used to develop base vehicular-trip rates, not accounting for the reductions due to alternate modes. The residential land uses were broken down into Townhomes, Mid-Rise Apartments, and High-Rise Apartments. For the retail land uses, the Shopping Center trip rate was applied in lieu of individual trip rates such as bank, pharmacy, and supermarket because the individual rates would not account for the interaction between the retail uses. This interaction of shoppers visiting more than one store in a trip is accounted for in the Shopping Center trip rate. In order to account for internal synergy between the retail uses and the office and residential uses within Poplar Point, a 20% internal capture reduction was applied to the retail trips. The office land uses was assumed to be General Office building in order to allow for a variety of office uses. These land uses were used to determine the base number of vehicle-trips generated according to the ITE *Trip Generation*. These trips were converted into person-trips assuming average vehicle occupancy of 1.1 persons per vehicle (ppv) for the office, retail, and residential land uses.

In order to determine the trips generated by the proposed cultural uses, assumptions based on peak visitors per square foot of the cultural uses were developed. It was assumed that approximately one visitor trip would be generated per 25 feet of gross floor area. Due to the operating hours and peak hours of the cultural uses, it was assumed that very little trips would occur during the morning and afternoon peak hours of the adjacent street traffic. Additionally, the cultural uses would attract a significant amount of visitors from the

surrounding land uses of the development. Therefore, the cultural uses would not contribute a substantial amount of morning and afternoon peak hour traffic volumes. It was assumed that approximately 5% of the daily trips would occur during the morning peak hour, accounting mostly for staff. All of these trips would be entering Poplar Point. It was also assumed that approximately 10% of the daily trips would occur during the afternoon peak hour, accounting for a small percentage of visitors remaining until the cultural uses close and for the museum staff. The majority of these trips would be exiting Poplar Point. Of note, this trip rate is for person-trips, not vehicle-trips as the ITE *Trip Generation* rate estimates.

Mode Split

The mode split assumptions were based on the data from the *2006-2008 American Community Survey*, the *WMATA Ridership Survey (2006)*, observations of existing traffic, and the type and density of the surrounding land uses. Some assumptions included:

- General Office use would generate mostly regional demand, given the location of Poplar Point near the Anacostia Freeway, and the South Capitol Street and 11th Street Bridges. This would increase the desire to drive to and from Poplar Point.
- Shopping Center use would generate a lot of local demand from the Anacostia neighborhood and surrounding area. Thus, there would be a higher assumed percentage of walking and biking trips.
- Residential use trips would be the most likely to use public transportation (Metrorail and Metrobus), since they would be regular users that would be able to figure out and take advantage of the various routes and schedules provided. Although Poplar Point is located near several major vehicular routes, the Metrorail and Metrobus service would be utilized to reach destinations in the Anacostia area and further towards the center of the District.
- Cultural use trips would most likely generate a majority of vehicular trips due to visitors typically traveling by bus or carpool. However, due to the proximity of Poplar Point to public transportation, visitors would also arrive via Metrorail and Metrobus.

The assumptions stated above were used in order to develop the mode split percentages for each land use for the three Action Alternatives. Slight variations are shown for each alternative due to the proposed development patterns.

- The percentage of trips taken by transit would vary based on their respective distance to the northern portal of the Anacostia Metrorail station and on the proposed layout of the development.
- The percentage of walking trips would also vary based on the average walk distances between neighborhood locations and the major development destinations. (This is further explained in the “Pedestrian Access” section of this analysis.)
- The percentage of bicycle trips would not vary between the alternatives. Alternatives 1, 2, and 3 have an equal number of access points and only slight variations in cycle distance, which are not significant enough to impact the number of bicycle trips.
- The percentage of vehicular trips would vary for each alternative based on the number of trips taken by alternative modes. The trips that do not take place by transit, walking, or bicycle will occur in a vehicle.

Based on the above listed mode split assumptions for land use and for each alternative, mode split percentages were estimated for each of the action alternatives. These mode-split percentages were then used to calculate the number of trips generated for each mode, based on the trip generation of each action alternative.

Finally, the vehicular-trips generated for the retail uses were discounted in order to account for pass-by traffic on the surrounding roadways. Pass-by trips are those on the adjacent roadways that are made as an intermediate stop on the way to another destination. Based on the information provided in the *ITE Trip Generation*, a pass-by percentage of 20% was assumed. In addition, person-trips calculated for the vehicular mode were converted back to vehicle-trips using the average vehicle occupancy of 1.1 persons per vehicle for the office, retail, and residential land uses and of 2.5 for the cultural uses.

In addition to the Poplar Point redevelopment, the WMATA garage and Howard Road parcels would also be developed under the proposed Small Area Plan. Trip generation for the WMATA garage and Howard Road parcels were calculated similarly to the method described for the Poplar Point development alternatives. It was assumed that the two sites would have an equivalent mode split to the three action alternatives for the Poplar Point development. It was assumed that the Hotel would have a similar mode split to the residential land uses. Following the steps outlined previously for the three action alternatives, the number of trips generated by mode for each action alternative for the WMATA garage and Howard Road parcels were calculated.

Traffic Volumes

In order to perform the future roadway capacity analyses, the internal roadway networks for each of the alternatives are outlined, detailing the internal circulation and site access points. Traffic volumes were obtained from DDOT in April 2010 for the St. Elizabeth's East/West Campus Transportation Impact Evaluation performed for FHWA and DDOT (GSA, 2008). The 2030 Land Use data set (Round 7.2A) from MWCOG was used in order to develop the 2030 volume projects. This dataset included the St. Elizabeth's development and all other vicinity developments, including a projection for the Project Area. These traffic models were used to determine the future No Action traffic volumes, minus the projected Project Area-generated volumes.

Consistent with standard practice, the roadway network for the traffic model includes transportation projects located in the vicinity of the site. The No-Action traffic volumes are based on this dataset, with traffic volumes assumed for Poplar Point subtracted. Poplar Point encompasses all of TAZ (Traffic Analysis Zone) 307 in the MWCOG 2030 Land Use data set. TAZ 307 included 1,254 households, 1,096 industrial jobs, 1,027 retail jobs, 2,147 office jobs, and 2,777 other jobs. The trips generated by the projected number of households and jobs were estimated based on the number of vehicles entering and exiting Poplar Point at the access points along Good Hope Road and Howard Road. The entering and exiting volumes were distributed through the roadway network based on the future roadway conditions and regional traffic patterns. These volumes were subtracted from the 2030 volumes projections obtained in order to determine the No-Action traffic volumes.

Traffic volumes for the three alternatives were generated based on the ITE rates and mode split described previously. The nature of the proposed development and regional traffic patterns were analyzed in order to

determine the trip distribution for vehicles accessing Poplar Point. In addition, as assessment of the future roadway conditions were used to determine the routes that provide the most convenient access to the proposed development.

Based on this review and the trip distribution outlined above, the residential, office, retail, and cultural vehicular trips were distributed through the roadway network. The traffic volumes for the three action alternatives were generated by adding the site generated traffic volumes to the No Action Alternative traffic volumes.

Capacity Analyses

The capacity analyses for the future No Action and three action alternatives was performed in order to determine the for the project future LOS for the morning and afternoon peak hours for the study intersections. The capacity analyses were based on: (1) the future lane use and traffic controls (2) the peak hour traffic volumes of the study intersections previously described; and (3) the *Highway Capacity Manual 2000* (HCM) methodologies (using *Synchro, Version 7* software).

Assumptions

Planned Projects within the Study Area

Several projects in the vicinity of the Project Area would affect the surrounding roadway network. Several local plans would affect how all users (vehicles, pedestrians, bicyclist, and transit users) would access the site. The improvement projects in the vicinity of the proposed development include the 11th Street Bridges Project, the South Capitol Street Project, the *Great Streets Framework Plan* for Martin Luther King, Jr. Avenue/South Capitol Street, and the DHS Headquarters Consolidation at St. Elizabeth's Development.

Future Roadway Conditions of the Study Area

As described previously, several long-term improvement projects are planned in the vicinity of the Poplar Point development. These projects would lead to major changes in the roadway network near the Project Area. However, several of these roadway changes would not impact the Project Area. Figure 4.6.1 shows the roadway network with implementation of these conditions. The following improvements are located in the immediate vicinity of the Project Area:

- Construction of a new 8-lane freeway bridge for I-295 inbound and outbound along the alignment of the existing 11th Street Bridge;
- Construction of a new 4-lane local bridge for the 11th Street river crossing along the alignment of the existing Officer Welsh Bridge, including a 14-foot shared-use path on the downstream side of the 11th Street Bridge from O Street to Good Hope Road;
- Direct ramp connections from the 11th Street Bridges complex to/from the Anacostia Freeway (I-295) north of the bridges;
- New local interchange to/from the Anacostia Freeway and the Officer Welsh Bridge (11th Street crossing), which will provide direct access to historic Anacostia via Martin Luther King, Jr. Avenue;



Figure 4.6.1 Future Roadway Network
Source: Gorove/Slade, 2010

- Reconstruction of Frederick Douglass Memorial Bridge;
- Creation of new at-grade intersection or at-grade traffic circle to connect new Frederick Douglass Memorial Bridge, South Capitol Street, Suitland Parkway, and Howard Road SE;
- Consolidation of separated northbound and southbound portions of South Capitol Street near Suitland Parkway into a single roadway;
- Widening of Suitland Parkway to three-lanes in each direction from Firth Sterling Avenue to the new Frederick Douglass Memorial Bridge;
- Reconstruction of the interchange of Suitland Parkway and Anacostia Freeway (I-295) to include all movements;
- Reconstruction of the Anacostia Freeway (I-295) bridge over South Capitol Street and widening of the bridge over Howard Road SE;
- Reconstruction of First Sterling Avenue SE from South Capitol Street to Howard Road SE;
- Reconstruction of Howard Road SE with one lane in each direction from Martin Luther King, Jr. Avenue to Bowen Road SE;
- Widening of Martin Luther King, Jr. Avenue bridge over Suitland Parkway to accommodate improvements and 12-foot multi-use path;
- Improvement of right-of-way configurations on Martin Luther King, Jr. Avenue to include shared transit- and passenger-vehicle lane and parking lane for most sections of the corridor and shared peak travel/off-peak parking lane;
- Conversion of the one-way section of Martin Luther King, Jr. Avenue between Good Hope Road and Howard Street into a two-way street with one lane in each direction;
- Improved sidewalks, including construction of high visibility crosswalks, for South Capitol Street between Martin Luther King, Jr. Avenue and Atlantic Street and between 1st Street and Southern Avenue;
- Construction of bulb-out sidewalks for Martin Luther King, Jr. Avenue between the 11th Street Bridge and Good Hope Road and Howard Street and between St. Elizabeth's Hospital and Waclark Place, including an adjoining section of Alabama Avenue;
- Construction of bike lanes for center portion of the corridor and for Martin Luther King, Jr. Avenue between St. Elizabeth's Hospital and Atlantic Avenue; and
- Construction of streetcar transit facilities along Martin Luther King, Jr. Avenue from the Congress Heights Metro station on Alabama Avenue north to Good Hope Road.

Impact Thresholds

To adequately define the magnitude of the impact on vehicular circulation, the following thresholds were established. These thresholds describe the impacts of the alternatives relative to the existing conditions.

Negligible: Impacts would be imperceptible or not detectable. There would be no decrease in traffic level of service. Mitigation would not be required.

Minor: Impacts would be slightly perceptible and there would be a small constrains on the transportation systems compared to existing conditions. Minor adverse impacts would not require an increase in roadway capacity.

Moderate: Impacts would be apparent and would constrain transportation systems compared to existing conditions. Moderate adverse impacts would result in the need for additional roadway capacity. Mitigation measures would be required.

Major: Major adverse impacts would pose a substantial risk of exceeding the total capacity of the regional transportation systems. New transportation facilities would be required to accommodate the increased demand. Impacts could go beyond the point of impacts.

Duration

Short-term impacts include those that would occur during the construction phases; long-term impacts are those that would persist beyond construction.

4.6.1.2 No Action Alternative

The No-Action Alternative contains no new development related Poplar Point or changes in operations in southern Anacostia Park. However, other planned and committed projects in the vicinity of the Project Area are included in the future analysis. Improvements implemented under this alternative are all a result of the nearby projects and developments. For the No Action Alternative, it was assumed that no development would occur on the Howard Road parcels and WMATA garage.

Table 4.6.1 shows the projected capacity analysis results for the No Action alternative for the morning and afternoon peak hours. The results shown are delay measured in seconds per vehicle and overall LOS for the signalized intersections. Intersections with unacceptable results (LOS F) are shown in **bold**.

Table 4.6.1 No Action Alternative: Future Peak Hour Capacity Analysis Results

Intersection	Future No-Action Peak Hour Capacity Analysis Results			
	AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS
11 th Street & I-295 SB Ramps	1.7	A	4.4	A
11 th Street & I-295 NB Ramps	62	E	40.1	D
MLK, Jr. Avenue & Good Hope Road	77.9	E	174.6	F
13 th Street & Good Hope Road	10.4	B	13.4	B
14 th Street & Good Hope Road	12.6	B	11.0	B
Minnesota Avenue & Good Hope Road	11.3	B	4.4	A
MLK, Jr. Avenue & W Street	13.7	B	16.0	B
MLK, Jr. Avenue & Chicago Street	7.1	A	4.5	A
MLK, Jr. Avenue & Morris Road	11.0	B	4.1	A
MLK, Jr. Avenue & Talbert Street	10.5	B	10.0	A
MLK, Jr. Avenue & Howard Road	26.8	C	31.8	C
MLK, Jr. Avenue & Suitland Parkway Ramps	40.0	D	37.9	D
MLK, Jr. Avenue & Sumner Road	11.6	B	7.2	A
Firth Sterling Avenue & Howard Road	38.2	D	25.8	C
MLK, Jr. Avenue & Good Hope Road	66.7	E	118.6	F
I-295 NB Ramps & Suitland Parkway	56.1	E	45.5	D
I-295 SB Ramps & Suitland Parkway	25.1	C	52.8	D
MLK, Jr. Avenue & Good Hope Road	114.0	F	225.2	F
MLK, Jr. Avenue & Good Hope Road	81.4	F	19.9	B
South Capitol Circle & Howard Road	29.3	C	11.6	B
South Capitol Circle & South Capitol Street	12.0	B	232.2	F
South Capitol Circle & South Capitol Street	13.2	B	29.0	C

Source: Gorove/Slade, 2010

Conclusion

As shown in Table 4.6.1, five study intersections are projected to operate under unacceptable conditions under the No Action Alternative. The following intersections operate under unacceptable conditions during the morning and/or afternoon peak hours:

- MLK, Jr. Avenue & Good Hope Road
- South Capitol Circle & South Capitol Street

Because no development is proposed, there would be a negligible impact on the surrounding roadway network. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

4.6.1.3 Alternative 1

Trip Generation and Mode Split

Based on the assumptions outlined above, Table 4.6.3 shows the base number of trips that would be generated by Alternative 1.

Table 4.6.3 Alternative 1: Base Vehicular and Person-Trips Generated

Mode/Land Use	Size		AM Peak Hour			PM Peak Hour			Daily Total
			In	Out	Total	In	Out	Total	
Vehicle Trips									
Residential Townhomes	315	Units	22	107	129	100	54	154	1,746
Residential Mid-Rise Units	1,330	Units	165	367	532	364	263	627	6,270
Residential High-Rise Units	1,715	Units	127	382	509	342	219	561	5,892
<i>Total Residential</i>	<i>4,400,000</i>	<i>Sq. Ft</i>	<i>314</i>	<i>856</i>	<i>1,170</i>	<i>806</i>	<i>536</i>	<i>1,342</i>	<i>13,908</i>
Office	1,400,000	Sq. Ft	1,363	186	1,549	280	1,367	1,647	10,180
Retail	210,000	Sq. Ft	146	93	239	513	533	1,046	11,000
<i>(Internal Synergy)</i>	<i>20% Reduction</i>		--	--	--	<i>(102)</i>	<i>(107)</i>	<i>(209)</i>	<i>(2,200)</i>
<i>Total Retail</i>			<i>146</i>	<i>93</i>	<i>239</i>	<i>411</i>	<i>426</i>	<i>837</i>	<i>8,800</i>
Museum^	500,000	Sq. Ft	900	100	1,000	400	1,600	2,000	20,000
Total Vehicular Trips*			2,723	1,235	3,958	1,897	3,929	5,826	52,888
Person-Trips									
Residential	1.1	PPV	345	942	1,287	887	589	1,476	15,299
Office	1.1	PPV	1,499	205	1,704	308	1,504	1,812	11,198
Retail	1.1	PPV	161	102	263	452	469	921	9,680
Museum^	2.5	PPV	900	100	1,000	400	1,600	2,000	20,000
Total Person-Trips			2,905	1,349	4,254	2,047	4,162	6,209	56,177

Source: Gorove/Slade, 2010

^ Museum trips generated as person-trips.

* Combination of vehicular and person-trips.

Based on the above listed mode split assumptions for land use and for each alternative, Table 4.6.4 shows the mode split assumptions for Alternative 1. These mode-split percentages were used to calculate the number of trips generated for each mode, based on the trip generation shown above.

Table 4.6.4 Alternative 1: Mode Split Assumptions

Land Use	Vehicle	Transit		Walk	Bike
		Metrorail	Metrobus		
Residential	46%	35%	10%	7%	2%
Office	69%	20%	5%	5%	1%
Retail	49%	30%	5%	12%	4%
Museum	56%	23%	7%	12%	2%

Source: Gorove/Slade, 2010

Finally, the vehicular-trips generated for the retail uses were discounted in order to account for pass-by traffic on the surrounding roadways. Based on the information provided in the ITE *Trip Generation*, a pass-by percentage of 20% was assumed. In addition, person-trips calculated for the vehicular mode were converted back to vehicle-trips using the average vehicle occupancy of 1.1 persons per vehicle for the office, retail, and residential land uses and of 2.5 for the Museum use. The trip generation by mode for Alternative 1 is shown in Table 4.6.5 below.

Table 4.6.5 Alternative 1: Trip Generation by Mode

Mode/Land Use	AM Peak Hour			PM Peak Hour			Daily Total
	In	Out	Total	In	Out	Total	
Metr rail Person-Trips							
Residential	121	329	450	310	207	517	5,355
Office	300	41	341	62	300	362	2,240
Retail	48	31	79	136	140	276	2,904
Museum	207	23	230	92	368	460	4,600
<i>Total New Metr rail Person-Trips</i>	<i>676</i>	<i>424</i>	<i>1,100</i>	<i>600</i>	<i>1,015</i>	<i>1,615</i>	<i>15,099</i>
Metrobus Person-Trips							
Residential	35	94	129	89	59	148	1,530
Office	75	10	85	15	76	91	560
Retail	8	5	13	23	23	46	484
Museum	48	5	53	21	85	106	1,058
<i>Total New Metrobus Person-Trips</i>	<i>166</i>	<i>114</i>	<i>280</i>	<i>148</i>	<i>243</i>	<i>391</i>	<i>3,632</i>
Walking Person-Trips							
Residential	24	66	90	62	41	103	1,071
Office	75	10	85	15	76	91	560
Retail	19	13	32	54	57	111	1,162
Museum	108	12	120	48	192	240	2,400
<i>Total New Walking Person-Trips</i>	<i>226</i>	<i>101</i>	<i>327</i>	<i>179</i>	<i>366</i>	<i>545</i>	<i>5,193</i>
Bicycle Person-Trips							
Residential	7	19	26	18	12	30	306
Office	15	2	17	3	15	18	112
Retail	6	5	11	18	19	37	387
Museum	18	2	20	8	32	40	400
<i>Total New Bicycle Person-Trips</i>	<i>46</i>	<i>28</i>	<i>74</i>	<i>47</i>	<i>78</i>	<i>125</i>	<i>1,205</i>
Vehicle Trips							
Residential	144	394	538	371	245	616	6,397
Office	940	129	1,069	194	942	1,136	7,024
Retail	58	35	93	161	167	328	3,450
Museum	208	23	231	92	370	462	4,617
<i>Total New Vehicle Trips</i>	<i>1,350</i>	<i>581</i>	<i>1,931</i>	<i>818</i>	<i>1,724</i>	<i>2,542</i>	<i>21,488</i>
Total Trips*	2,464	1,248	3,712	1,792	3,426	5,218	46,617

Source: Gorove/Slade, 2010

* Combination of vehicular and person-trips

Trip generation for the Howard Road parcels and WMATA garage was calculated similarly to the method described for Alternative 1. It was assumed that the two parcels would have an equivalent mode split to Alternative 1, as shown in Table 4.6.7.

Table 4.6.7 Alternative 1: Base Vehicular Trips Generated for WMATA Garage and Howard Road Parcels

Mode/Land Use	Size		AM Peak Hour			PM Peak Hour			Daily Total
			In	Out	Total	In	Out	Total	
Vehicle Trips									
Residential	1,300	Units	68	334	402	320	173	493	5,992
Office	1,087,176	Sq. Ft	1,113	152	1,265	220	1,076	1,296	8,378
Retail	18,747	Sq. Ft	35	22	57	101	106	207	2,288
(Internal Synergy)	20% Reduction		--	--	--	(20)	(21)	(41)	(458)
Total Retail			35	22	57	81	85	166	1,830
Total Vehicular Trips			1,216	508	1,724	621	1,334	1,955	16,200
Person-Trips									
Residential	1.1	PPV	75	367	442	352	190	542	6,591
Office	1.1	PPV	1,224	168	1,392	242	1,184	1,426	9,216
Retail	1.1	PPV	39	24	63	89	94	183	2,013
Total Person-Trips			1,338	559	1,897	683	1,468	2,151	17,820

Source: Gorove/Slade, 2010

Following the steps outlined previously, Table 4.6.8 shows the number of trips generated by mode for Alternative 1 of the Poplar Point development for the WMATA and Howard Road/Epperson Properties. Alternative 1 would generate 1,784 trips during the morning peak hour, 2,014 during the afternoon peak hour, and 16,697 daily trips.

Table 4.6.8 Alternative 1 Trip Generation by Mode for WMATA Garage and Howard Road Parcels

Mode/Land Use	AM Peak Hour			PM Peak Hour			Daily Total
	In	Out	Total	In	Out	Total	
Metrorail Person-Trips							
Residential	26	129	155	123	67	190	2,307
Office	245	33	278	48	237	285	1,843
Retail	12	7	19	27	28	55	604
<i>Total New Metrorail Person-Trips</i>	<i>283</i>	<i>169</i>	<i>452</i>	<i>198</i>	<i>332</i>	<i>530</i>	<i>4,754</i>
Metrobus Person-Trips							
Residential	8	36	44	35	19	54	659
Office	61	9	70	12	59	71	461
Retail	2	1	3	4	5	9	101
<i>Total New Metrobus Person-Trips</i>	<i>71</i>	<i>46</i>	<i>117</i>	<i>51</i>	<i>83</i>	<i>134</i>	<i>1,221</i>
Walking Person-Trips							
Residential	5	26	31	25	13	38	461
Office	61	9	70	12	59	71	461
Retail	5	3	8	11	11	22	242
<i>Total New Walking Person-Trips</i>	<i>16</i>	<i>10</i>	<i>26</i>	<i>13</i>	<i>19</i>	<i>32</i>	<i>305</i>
Bicycle Person-Trips							
Residential	2	7	9	7	4	11	132
Office	12	2	14	2	12	14	92
Retail	2	1	3	4	3	7	81
<i>Total New Bicycle Person-Trips</i>	<i>16</i>	<i>10</i>	<i>26</i>	<i>13</i>	<i>19</i>	<i>32</i>	<i>305</i>
Vehicle Trips							
Residential	31	154	185	147	79	226	2,756
Office	768	105	873	153	742	895	5,781
Retail	13	9	22	31	35	66	716
<i>Total New Vehicle Trips</i>	<i>812</i>	<i>268</i>	<i>1,080</i>	<i>331</i>	<i>856</i>	<i>1,187</i>	<i>9,253</i>
Total Trips*	1,253	531	1,784	641	1,373	2,014	16,697

Source: Gorove/Slade, 2010

* Combination of vehicular and person-trips.

Table 4.6.9 shows the total number of trips that would be generated by the combination of Alternative and the WMATA garage and Howard Road parcels. Table 4.6.10 shows the combined trip generation by mode. Alternative 1 would generate 1,552 Metrorail trips during the morning peak hour, 2,145 during the afternoon peak hour, and 19,853 daily Metrorail trips. Alternative 1 would generate 397 Metrobus trips during the morning peak hour, 525 during the afternoon peak hour, and 4,853 daily Metrobus trips. Alternative 1 would generate 436 walking trips during the morning peak hour, 676 during the afternoon peak hour, and 6,357 daily walking trips. Alternative 1 would generate 100 bicycle trips during the morning peak hour, 157 during the afternoon peak hour, and 1,510 daily bicycle trips. Alternative 1 would generate the highest amount of peak hour and daily vehicular trips, with 3,011 trips during the morning peak hour, 3,729 during the afternoon peak hour, and 30,741 daily trips.

Table 4.6.9 Alternative 1: Total New Trips Generated

	AM Total	PM Total	Daily Total
Poplar Point Development	3,712	5,218	46,617
WMATA Garage	1,360	1,495	10,382
Howard Road Parcels	424	519	6,315
Total	5,496	7,232	63,314

Source: Gorove/Slade, 2010

Table 4.6.10 Alternative 1: Total New Trips Generated by Mode

Development	AM Peak Hour Total	PM Peak Hour Total	Daily Total
Metrorail Person-Trips			
Poplar Point Development	1,100	1,615	15,099
WMATA Garage	297	340	2,447
Howard Road Parcels	155	190	2,307
<i>Total New Metrorail Person-Trips</i>	<i>1,552</i>	<i>2,145</i>	<i>19,853</i>
Metrobus Person-Trips			
Poplar Point Development	280	391	3,632
WMATA Garage	73	80	562
Howard Road Parcels	44	54	659
<i>Total New Metrobus Person-Trips</i>	<i>397</i>	<i>525</i>	<i>4,853</i>
Walking Person-Trips			
Poplar Point Development	327	545	5,193
WMATA Garage	78	93	703
Howard Road Parcels	31	38	461
<i>Total New Walking Person-Trips</i>	<i>436</i>	<i>676</i>	<i>6,357</i>
Bicycle Person-Trips			
Poplar Point Development	9	11	132
WMATA Garage	14	14	92
Howard Road Parcels	3	7	81
<i>Total New Bicycle Person-Trips</i>	<i>26</i>	<i>32</i>	<i>305</i>
Vehicle Trips			
Poplar Point Development	185	226	2,756
WMATA Garage	873	895	5,781
Howard Road Parcels	22	66	716
<i>Total New Vehicle Trips</i>	<i>1,080</i>	<i>1,187</i>	<i>9,253</i>
Total Trips*	5,496	7,232	63,314

Source: Gorove/Slade, 2010

The capacity analyses for Alternative 1 were performed in order to determine the for the project future LOS for the morning and afternoon peak hours for the study intersections. The capacity analyses were based on: (1) the future lane use and traffic controls (2) the peak hour traffic volumes of the study intersections previously described; and (3) the *Highway Capacity Manual 2000* (HCM) methodologies (using *Synchro, Version 7* software).

Table 4.6.11 shows the projected capacity analysis results for Alternative 1 for the morning and afternoon peak hours. The No Action capacity analysis results are also shown for comparison. The results shown are delay measured in seconds per vehicle and overall LOS for the signalized intersections. Intersections with unacceptable results (LOS F) are shown in **bold**.

Table 4.6.11 Alternative 1: Future Peak Hour Capacity Analysis Results

Intersection	Future Alternative 1 Peak Hour Capacity Analysis Results							
	Morning Peak Hour				Afternoon Peak Hour			
	No-Action		Alternative 1		No-Action		Alternative 1	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
11 th Street & I-295 SB Ramps	1.7	A	3.0	A	4.4	A	27.5	C
11 th Street & I-295 NB Ramps	62	E	91.7	F	40.1	D	53.6	D
MLK, Jr. Avenue & Good Hope Road	77.9	E	102.9	F	174.6	F	356.9	F
13 th Street & Good Hope Road	10.4	B	10.0	A	13.4	B	13.1	B
14 th Street & Good Hope Road	12.6	B	12.6	B	11.0	B	11.2	B
Minnesota Avenue & Good Hope Road	11.3	B	11.4	B	4.4	A	4.5	A
MLK, Jr. Avenue & W Street	13.7	B	14.0	B	16.0	B	54.0	D
MLK, Jr. Avenue & Chicago Street	7.1	A	7.9	A	4.5	A	4.7	A
MLK, Jr. Avenue & Morris Road	11.0	B	11.1	B	4.1	A	4.5	A
MLK, Jr. Avenue & Talbert Street	10.5	B	10.6	B	10.0	A	10.5	B
MLK, Jr. Avenue & Howard Road	26.8	C	28.6	C	31.8	C	62.7	E
MLK, Jr. Avenue & Suitland Parkway Ramps	40.0	D	41.4	D	37.9	D	40.7	D
MLK, Jr. Avenue & Sumner Road	11.6	B	12.7	B	7.2	A	8.7	A
Firth Sterling Avenue & Howard Road	38.2	D	230.8	F	25.8	C	184.5	F
Firth Sterling Avenue & Suitland Parkway	66.7	E	215.0	F	118.6	F	190.3	F
I-295 NB Ramps & Suitland Parkway	56.1	E	74.7	E	45.5	D	103.4	F
I-295 SB Ramps & Suitland Parkway	25.1	C	46.4	D	52.8	D	100.7	F
South Capitol Street & Firth Sterling Avenue	114.0	F	128.1	F	225.2	F	249.4	F
South Capitol Circle & Suitland Parkway	81.4	F	156.6	F	19.9	B	22.9	C
South Capitol Circle & Howard Road	29.3	C	65.4	E	11.6	B	172.6	F
South Capitol Circle & South Capitol Street	12.0	B	18.7	B	232.2	F	298.5	F
South Capitol Circle & South Capitol Street	13.2	B	24.0	C	29.0	C	70.4	E

Source: Gorove/Slade, 2010

Conclusion

As shown in Table 4.6.11 above, several study intersections are projected to operate under unacceptable conditions under the No Action Alternative and Alternative 1. The following intersections operate under acceptable conditions during the morning and/or afternoon peak hour:

- 11th Street & I-295 NB Ramps
- MLK, Jr. Avenue & Good Hope Road
- Firth Sterling Avenue & Howard Road
- Firth Sterling Avenue & Suitland Parkway
- South Capitol Street & Firth Sterling Avenue
- South Capitol Circle & Suitland Parkway
- South Capitol Circle & Howard Road
- South Capitol Circle & South Capitol Street

Alternative 1 would include millions of square feet of development that would generate thousands of vehicle trips a day to and from Poplar Point. The location of a Metrorail station on the site and the availability of other alternate modes would reduce this impact, but it would still be noticeable and would result in a long-term moderate adverse impact to the local roadway network. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

In order to maintain levels of congestion similar to the No Action alternative, Alternative 1 would need to mitigate traffic through a series of improvements. Improvements at locations not directly accessing the Poplar Point may not be feasible due to several factors including limited geometrics, right-of-way, and possible negative impacts to bicycles, pedestrians and transit service. The improvements located at the access points to Poplar Point are highly recommended for the development levels contained in Alternative 1. No feasible improvements are available for the intersection of Martin Luther King, Jr. Avenue and Chicago Street.

- Adjust the signal timing and construct two eastbound left-turn lanes at the intersection of Martin Luther King, Jr. Avenue and Good Hope Road.
- Adjust the signal timing at the intersection of Martin Luther King, Jr. Avenue and W Street.
- Adjust the signal timing and construct a northbound left-turn lane at the intersection of Firth Sterling Avenue and Howard Road.
- Adjust the signal timing and construct a westbound right-turn lane at the intersection of South Capitol Circle and Howard Road.

Additional improvements at other nearby study intersections are also recommended.

- Adjust the signal timing at the following intersections:
 - 11th Street and I-295 Northbound Ramps
 - Firth Sterling Avenue and Suitland Parkway
 - I-295 Northbound Ramps and Suitland Parkway
 - I-295 Southbound Ramps and Suitland Parkway
 - South Capitol Circle and Suitland Parkway
- Adjust the signal timing and construct an eastbound left-turn lane at the intersection of Martin Luther King, Jr. Avenue and Howard Road.
- Adjust the signal timing, construct a southbound left-turn lane, and construct an additional westbound left-turn lane at the intersection of South Capitol Street and Firth Sterling Avenue.

- Adjust the signal timing, restripe the eastbound shared through-right lane to through only, and construct an additional free-flow right-turn lane at the intersection of South Capitol Circle and South Capitol Street.

Table 4.6.12 shows the projected capacity analysis results for Alternative 1, including the recommended and potential improvements, for the morning and afternoon peak hours. The results shown are delay measured in seconds per vehicle and overall LOS for the signalized intersections. Intersections with unacceptable results (LOS F) are shown in **bold**.

Table 4.6.12 Alternative 1: Future Peak Hour Capacity Analysis Results with Mitigation

Intersection	Future Alternative 1 Peak Hour Capacity Analysis Results							
	Morning Peak Hour				Afternoon Peak Hour			
	No-Action		Alternative 1		No-Action		Alternative 1	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
11 th Street & I-295 SB Ramps	1.7	A	3.0	A	4.4	A	14.9	B
11 th Street & I-295 NB Ramps	62.0	E	91.7	F	40.1	D	55.8	E
MLK, Jr. Avenue & Good Hope Road	77.9	E	113.5	F	174.6	F	224.7	F
13 th Street & Good Hope Road	10.4	B	10.1	B	13.4	B	6.4	A
14 th Street & Good Hope Road	12.6	B	12.6	B	11.0	B	10.0	A
Minnesota Avenue & Good Hope Road	11.3	B	11.4	B	4.4	A	4.5	A
MLK, Jr. Avenue & W Street	13.7	B	13.8	B	16.0	B	58.0	E
MLK, Jr. Avenue & Chicago Street	7.1	A	8.0	A	4.5	A	4.2	A
MLK, Jr. Avenue & Morris Road	11.0	B	11.9	B	4.1	A	4.8	A
MLK, Jr. Avenue & Talbert Street	10.5	B	10.0	A	10.0	A	11.6	B
MLK, Jr. Avenue & Howard Road	26.8	C	30.5	C	31.8	C	63.3	E
MLK, Jr. Avenue & Suitland Parkway Ramps	40.0	D	41.0	D	37.9	D	39.7	D
MLK, Jr. Avenue & Sumner Road	11.6	B	12.9	B	7.2	A	8.3	A
Firth Sterling Avenue & Howard Road	38.2	D	30.2	C	25.8	C	35.3	D
Firth Sterling Avenue & Suitland Parkway	66.7	E	131.0	F	118.6	F	166.4	F
I-295 NB Ramps & Suitland Parkway	56.1	E	69.6	E	45.5	D	99.9	F
I-295 SB Ramps & Suitland Parkway	25.1	C	35.3	D	52.8	D	113.8	F
South Capitol Street & Firth Sterling Avenue	114.0	F	105.5	F	225.2	F	42.6	D
South Capitol Circle & Suitland Parkway	81.4	F	153.2	F	19.9	B	22.5	C
South Capitol Circle & Howard Road	29.3	C	21.4	C	11.6	B	28.4	C
South Capitol Circle & South Capitol Street	12.0	B	18.8	B	232.2	F	304.4	F
South Capitol Circle & South Capitol Street	13.2	B	15.0	B	29.0	C	14.1	B

Source: Gorove/Slade, 2010

4.6.1.4 Alternative 2

Similar to the Trip Generation analysis conducted for Alternative 1, Table 4.6.13 shows the base number of trips generated by Alternative 2.

Table 4.6.13 Alternative 2: Base Vehicular and Person-Trips Generated

Mode/Land Use	Size		AM Peak Hour			PM Peak Hour			Daily Total
			In	Out	Total	In	Out	Total	
Vehicle Trips									
Residential Townhomes	0	Units	0	0	0	0	0	0	0
Residential Mid-Rise Units	2,380	Units	299	664	963	656	475	1,131	11,310
Residential High-Rise Units	1,715	Units	127	382	509	342	219	561	5,892
<i>Total Residential</i>	<i>4,700,000</i>	<i>Sq. Ft</i>	<i>426</i>	<i>1,046</i>	<i>1,472</i>	<i>998</i>	<i>694</i>	<i>1,692</i>	<i>17,202</i>
Office	570,000	Sq. Ft	664	91	755	122	595	717	5,096
Retail	650,000	Sq. Ft	284	181	465	1,093	1,137	2,230	22,928
<i>(Internal Synergy)</i>	<i>20% Reduction</i>		<i>--</i>	<i>--</i>	<i>--</i>	<i>(219)</i>	<i>(227)</i>	<i>(446)</i>	<i>(4,586)</i>
<i>Total Retail</i>			<i>284</i>	<i>181</i>	<i>465</i>	<i>874</i>	<i>910</i>	<i>1,784</i>	<i>18,342</i>
Museum [^]	550,000	Sq. Ft	990	110	1,100	440	1,760	2,200	22,000
Total Vehicular Trips*			2,364	1,428	3,792	2,434	3,959	6,393	62,640
Person-Trips									
Residential	1.1	PPV	469	1,150	1,619	1,098	763	1,861	18,922
Office	1.1	PPV	730	101	831	134	655	789	5,606
Retail	1.1	PPV	312	200	512	961	1,001	1,962	20,176
Museum [^]	2.5	PPV	990	110	1,100	440	1,760	2,200	22,000
Total Person-Trips			2,501	1,561	4,062	2,633	4,179	6,812	66,704

Source: Gorove/Slade, 2010

[^] Museum trips generated as person-trips.

* Combination of vehicular and person-trips.

Also similar to the analysis conducted for Alternative 1, Table 4.6.14 shows the mode split assumptions for Alternative 2. These mode-split percentages were used to calculate the number of trips generated for each mode, based on the trip generation shown previously.

Table 4.6.14 Alternative 2: Mode Split Assumptions

Land Use	Vehicle	Transit		Walk	Bike
		Metrorail	Metrobus		
Residential	38%	40%	15%	5%	2%
Office	60%	25%	10%	4%	1%
Retail	41%	35%	10%	10%	4%
Museum	48%	29%	11%	10%	2%

Source: Gorove/Slade, 2010

Finally, the vehicular-trips generated for the retail uses were discounted in order to account for pass-by traffic on the surrounding roadways. Based on the information provided in the ITE *Trip Generation*, a pass-by percentage of 20% was assumed. In addition, person-trips calculated for the vehicular mode were converted back to vehicle-trips using the average vehicle occupancy of 1.1 persons per vehicle for the office, retail, and residential land uses and of 2.5 for the Museum. Table 4.6.15 shows the trip generation by mode for Alternative 2.

Table 4.6.15 Alternative 2: Trip Generation by Mode

Mode/Land Use	AM Peak Hour			PM Peak Hour			Daily Total
	In	Out	Total	In	Out	Total	
Metrorail Person-Trips							
Residential	188	460	648	439	305	744	7,569
Office	183	25	208	34	163	197	1,402
Retail	109	70	179	336	351	687	7,062
Museum	287	32	319	128	510	638	6,380
<i>Total New Metrorail Person-Trips</i>	<i>767</i>	<i>587</i>	<i>1,354</i>	<i>937</i>	<i>1,329</i>	<i>2,266</i>	<i>22,413</i>
Metrobus Person-Trips							
Residential	70	173	243	165	114	279	2,838
Office	73	10	83	13	66	79	561
Retail	31	20	51	96	100	196	2,018
Museum	83	10	93	37	148	185	1,850
<i>Total New Metrobus Person-Trips</i>	<i>257</i>	<i>213</i>	<i>470</i>	<i>311</i>	<i>428</i>	<i>739</i>	<i>7,267</i>
Walking Person-Trips							
Residential	23	58	81	55	38	93	946
Office	29	4	33	5	27	32	224
Retail	31	20	51	96	100	196	2,018
Museum	99	11	110	44	176	220	2,200
<i>Total New Walking Person-Trips</i>	<i>182</i>	<i>93</i>	<i>275</i>	<i>200</i>	<i>341</i>	<i>541</i>	<i>5,388</i>
Bicycle Person-Trips							
Residential	9	23	32	22	15	37	378
Office	7	1	8	1	7	8	56
Retail	12	8	20	38	40	78	807
Museum	20	2	22	9	35	44	440
<i>Total New Bicycle Person-Trips</i>	<i>48</i>	<i>34</i>	<i>82</i>	<i>70</i>	<i>97</i>	<i>167</i>	<i>1,681</i>
Vehicle Trips							
Residential	163	396	559	379	265	644	6,537
Office	398	55	454	74	356	430	3,057
Retail	94	60	154	287	299	586	6,015
Museum	200	22	222	89	356	445	4,452
<i>Total New Vehicle Trips</i>	<i>855</i>	<i>533</i>	<i>1,389</i>	<i>829</i>	<i>1,276</i>	<i>2,105</i>	<i>20,061</i>
Total Trips*	2,109	1,460	3,570	2,347	3,471	5,818	56,810

Source: Gorove/Slade, 2010

* Combination of vehicular and person-trips.

Trip generation for the WMATA garage and Howard Road parcels was calculated similarly to the method described for Alternative 2. It was assumed that the two parcels would have an equivalent mode split to the Alternative 2, as shown in Table 4.6.16. It was assumed that the hotel would have a mode split similar to the residential land uses.

Table 4.6.16 Alternative 2: Base Vehicular Trips Generated for WMATA Garage and Howard Road Parcels

Mode/Land Use	Size		AM Peak Hour			PM Peak Hour			Daily Total
			In	Out	Total	In	Out	Total	
Vehicle Trips									
Residential	1,300	Units	68	334	402	320	173	493	5,992
Office	536,420	Sq. Ft	633	86	719	116	564	680	4,864
Retail	301,891	Sq. Ft	181	115	296	654	680	1,334	13,930
(Internal Synergy)	20% Reduction		--	--	--	(131)	(136)	(267)	(2,786)
Total Retail			181	115	296	523	544	1,067	11,144
Hotel	200	Rooms	59	38	97	63	55	118	1,418
Total Vehicular Trips			941	573	1,514	1,022	1,336	2,358	23,418
Person-Trips									
Residential	1.1	PPV	75	367	442	352	190	542	6,591
Office	1.1	PPV	696	95	791	128	620	748	5,350
Retail	1.1	PPV	199	127	326	575	599	1,174	12,258
Hotel	1.1	PPV	65	42	107	69	61	130	1,560
Total Person-Trips			1,035	631	1,666	1,124	1,470	2,594	25,759

Source: Gorove/Slade, 2010

Following the steps outlined previously, Table 4.6.17 shows the number of trips generated by mode for Alternative 2 of the Poplar Point with the WMATA garage and Howard Road parcels. Alternative 2 would generate 1,568 trips during the morning peak hour, 2,398 during the afternoon peak hour, and 23,814 daily trips.

Table 4.6.17 Alternative 2: Trip Generation by Mode for WMATA Garage and Howard Road Parcels

Mode/Land Use	AM Peak Hour			PM Peak Hour			Daily Total
	In	Out	Total	In	Out	Total	
Metrorail Person-Trips							
Residential	30	147	177	141	76	217	2,636
Office	174	24	198	32	155	187	1,338
Retail	70	44	114	201	210	411	4,290
Hotel	26	17	43	28	24	52	624
<i>Total New Metrorail Person-Trips</i>	<i>300</i>	<i>232</i>	<i>532</i>	<i>402</i>	<i>465</i>	<i>867</i>	<i>8,888</i>
Metrobus Person-Trips							
Residential	11	55	66	53	28	81	989
Office	70	9	79	13	62	75	535
Retail	20	13	33	58	59	117	1,226
Hotel	10	6	16	10	10	20	234
<i>Total New Metrobus Person-Trips</i>	<i>111</i>	<i>83</i>	<i>194</i>	<i>134</i>	<i>159</i>	<i>293</i>	<i>2,984</i>
Walking Person-Trips							
Residential	4	18	22	18	9	27	330
Office	28	4	32	5	25	30	214
Retail	20	13	33	58	59	117	1,226
Hotel	3	2	5	3	4	7	78
<i>Total New Walking Person-Trips</i>	<i>55</i>	<i>37</i>	<i>92</i>	<i>84</i>	<i>97</i>	<i>181</i>	<i>1,848</i>
Bicycle Person-Trips							
Residential	2	7	9	7	4	11	132
Office	7	1	8	1	6	7	54
Retail	8	5	13	23	24	47	490
Hotel	1	1	2	1	2	3	31
<i>Total New Bicycle Person-Trips</i>	<i>18</i>	<i>14</i>	<i>32</i>	<i>32</i>	<i>36</i>	<i>68</i>	<i>707</i>
Vehicle Trips							
Residential	25	128	153	121	66	187	2,276
Office	379	52	4,31	70	338	408	2,917
Retail	59	38	97	171	179	350	3,655
Hotel	23	15	37	25	19	44	539
<i>Total New Vehicle Trips</i>	<i>486</i>	<i>233</i>	<i>718</i>	<i>387</i>	<i>602</i>	<i>989</i>	<i>9,387</i>
Total Trips*	970	599	1,568	1,039	1,359	2,398	23,814

Source: Gorove/Slade, 2010

* Combination of vehicular and person-trips.

Table 4.6.18 shows the total number of trips generated by Alternative 2 and the WMATA garage and Howard Road parcels. Table 4.6.19 shows the number of trips generated for each mode by Alternative 2 and the WMATA garage and Howard Road parcels. Alternative 2 would generate 1,886 Metrorail trips during the morning peak hour, 3,133 during the afternoon peak hour, and 31,301 daily Metrorail trips. Alternative 2 would generate 664 Metrobus trips during the morning peak hour, 1,032 during the afternoon peak hour, and 10,251 daily Metrobus trips. Alternative 2 would generate 367 walking trips during the morning peak hour, 722 during the afternoon peak hour, and 7,236 daily walking trips. Alternative 2 would generate 114 bicycle trips during the morning peak hour, 235 during the afternoon peak hour, and 2,388 daily bicycle trips.

Alternative 2 would generate 2,107 vehicular trips during the morning peak hour, 3,094 during the afternoon peak hour, and 29,448 daily vehicular trips.

Table 4.6.18 Alternative 2: Total New Trips Generated

Development	AM Total	PM Total	Daily Total
Poplar Point Development	3,570	5,818	56,810
WMATA Garage	1,141	1,875	17,451
Howard Road Parcels	427	523	6,363
Total	5,138	8,216	80,624

Source: Gorove/Slade, 2010

Table 4.6.19 Alternative 2: Total New Trips Generated by Mode

Development	AM Peak Hour Total	PM Peak Hour Total	Daily Total
Metrorail Person-Trips			
Poplar Point Development	1,354	2,266	22,413
WMATA Garage	355	650	6,252
Howard Road Parcels	177	217	2,636
<i>Total New Metrorail Person-Trips</i>	<i>1,886</i>	<i>3,133</i>	<i>31,301</i>
Metrobus Person-Trips			
Poplar Point Development	470	739	7,267
WMATA Garage	128	212	1,995
Howard Road Parcels	66	81	989
<i>Total New Metrobus Person-Trips</i>	<i>664</i>	<i>1,032</i>	<i>10,251</i>
Walking Person-Trips			
Poplar Point Development	275	541	5,388
WMATA Garage	70	154	1,518
Howard Road Parcels	22	27	330
<i>Total New Walking Person-Trips</i>	<i>367</i>	<i>722</i>	<i>6,357</i>
Bicycle Person-Trips			
Poplar Point Development	82	167	1,681
WMATA Garage	23	57	575
Howard Road Parcels	9	11	132
<i>Total New Bicycle Person-Trips</i>	<i>114</i>	<i>235</i>	<i>2,388</i>
Vehicle Trips			
Poplar Point Development	1,389	2,105	20,061
WMATA Garage	565	802	7,111
Howard Road Parcels	153	187	2,276
<i>Total New Vehicle Trips</i>	<i>2,107</i>	<i>3,094</i>	<i>29,448</i>
Total Trips*	5,138	8,216	80,624

Source: Gorove/Slade, 2010

A capacity analysis similar to Alternative 1 was conducted for Alternative 2 in order to determine the for the project future LOS for the morning and afternoon peak hours for the study intersections. Table 4.6.20 shows the projected capacity analysis results for Alternative 2 for the morning and afternoon peak hours. The No

Action capacity analysis results are also shown for comparison. The results shown are delay measured in seconds per vehicle and overall LOS for the signalized intersections. Intersections with unacceptable results (LOS F) are shown in bold.

Table 4.6.20 Alternative 2: Future Peak Hour Capacity Analysis Results

Intersection	Future Alternative 2 Peak Hour Capacity Analysis Results							
	Morning Peak Hour				Afternoon Peak Hour			
	No-Action		Alternative 2		No-Action		Alternative 2	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
11 th Street & I-295 SB Ramps	1.7	A	2.7	A	4.4	A	8.5	A
11 th Street & I-295 NB Ramps	62	E	88.5	F	40.1	D	43.3	D
MLK, Jr. Avenue & Good Hope Road	77.9	E	104.0	F	174.6	F	284.8	F
13 th Street & Good Hope Road	10.4	B	10.0	A	13.4	B	13.1	B
14 th Street & Good Hope Road	12.6	B	12.7	B	11.0	B	11.3	B
Minnesota Avenue & Good Hope Road	11.3	B	11.5	B	4.4	A	4.8	A
MLK, Jr. Avenue & W Street	13.7	B	13.9	B	16.0	B	17.0	B
MLK, Jr. Avenue & Chicago Street	7.1	A	8.6	A	4.5	A	30.0	C
MLK, Jr. Avenue & Morris Road	11.0	B	11.6	B	4.1	A	4.7	A
MLK, Jr. Avenue & Talbert Street	10.5	B	10.5	B	10.0	A	11.3	B
MLK, Jr. Avenue & Howard Road	26.8	C	29.6	C	31.8	C	65.7	E
MLK, Jr. Avenue & Suitland Parkway Ramps	40.0	D	41.4	D	37.9	D	40.8	D
MLK, Jr. Avenue & Sumner Road	11.6	B	12.4	B	7.2	A	8.8	A
Firth Sterling Avenue & Howard Road	38.2	D	116.9	F	25.8	C	111.9	F
Firth Sterling Avenue & Suitland Parkway	66.7	E	114.5	F	118.6	F	139.4	F
I-295 NB Ramps & Suitland Parkway	56.1	E	67.7	E	45.5	D	75.0	E
I-295 SB Ramps & Suitland Parkway	25.1	C	31.5	C	52.8	D	79.5	E
South Capitol Street & Firth Sterling Avenue	114.0	F	126.8	F	225.2	F	254.7	F
South Capitol Circle & Suitland Parkway	81.4	F	124.7	F	19.9	B	23.2	C
South Capitol Circle & Howard Road	29.3	C	62.7	E	11.6	B	90.5	F
South Capitol Circle & South Capitol Street	12.0	B	15.4	B	232.2	F	286.9	F
South Capitol Circle & South Capitol Street	13.2	B	20.3	C	29.0	C	65.2	E

Source: Gorove/Slade, 2010

Conclusion

As shown in Table 4.6.20, several study intersections are projected to operate under unacceptable conditions under the No Action Alternative and Alternative 2. The following intersections would operate under acceptable conditions during the morning and/or afternoon peak hour:

- 11th Street & I-295 NB Ramps
- MLK, Jr. Avenue & Good Hope Road
- Firth Sterling Avenue & Howard Road
- Firth Sterling Avenue & Suitland Parkway
- South Capitol Street & Firth Sterling Avenue
- South Capitol Circle & Suitland Parkway

- South Capitol Circle & Howard Road
- South Capitol Circle & South Capitol Street

Similar to Alternative 1, Alternative 2 would include millions of square feet of development that would generate thousands of vehicle trips a day to and from Poplar Point. The location of a Metrorail station adjacent to Poplar Point and the availability of other alternate modes would reduce this impact, but it would still be noticeable. Thus, there would be a long-term moderate adverse impact to the surrounding roadway network under Alternative 2. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

In order to mitigate the impacts of Alternative 2 to the surrounding roadway network, improvements are recommended for the intersections with direct access to Poplar Point. Other improvements were also investigated for the intersections that do not provide direct access to Poplar Point. Since these intersections identified for further study were included in other transportation studies, it is possible that the improvements noted are not feasible due to several factors, including limited roadway geometrics, limited right-of-way, and negative impacts to pedestrians and bicycles. It is possible that these improvements could be included in the future design of the roadway network surrounding the development if further study determines that they are feasible and beneficial. No feasible improvements are available for the intersection of Martin Luther King, Jr. Avenue and W Street.

- Adjust the signal timing and construct two eastbound left-turn lanes at the intersection of Martin Luther King, Jr. Avenue and Good Hope Road.
- Adjust the signal timing at the intersection of Martin Luther King, Jr. Avenue and W Street.
- Adjust the signal timing and construct an eastbound right-turn lane with protected overlap at the intersection of Firth Sterling Avenue and Howard Road.
- Adjust the signal timing and construct a westbound right-turn lane at the intersection of South Capitol Circle and Howard Road.

Additional improvements at other nearby study intersections are also recommended.

- Adjust the signal timing at the following intersections:
 - 11th Street and I-295 Northbound Ramps
 - Firth Sterling Avenue and Suitland Parkway
 - I-295 Northbound Ramps and Suitland Parkway
 - I-295 Southbound Ramps and Suitland Parkway
 - South Capitol Circle and Suitland Parkway
- Adjust the signal timing and construct an eastbound left-turn lane at the intersection of Martin Luther King, Jr. Avenue and Howard Road.
- Adjust the signal timing, construct a southbound left-turn lane, and construct an additional westbound left-turn lane at the intersection of South Capitol Street and Firth Sterling Avenue.

Table 4.6.21 shows the projected capacity analysis results for the No Action alternative and for Alternative 2, including the recommended and potential improvements, for the morning and afternoon peak hours. The results shown are delay measured in seconds per vehicle and overall LOS for the signalized intersections. Intersections with unacceptable results (LOS F) are shown in **bold**.

Table 4.6.21 Alternative 2: Future Peak Hour Capacity Analysis Results with Mitigation

Intersection	Future Alternative 2 Peak Hour Capacity Analysis Results							
	Morning Peak Hour				Afternoon Peak Hour			
	No-Action		Alternative 2		No-Action		Alternative 2	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
11 th Street & I-295 SB Ramps	1.7	A	2.8	A	4.4	A	9.9	A
11 th Street & I-295 NB Ramps	62.0	E	80.0	E	40.1	D	44.9	D
MLK, Jr. Avenue & Good Hope Road	77.9	E	118.4	F	174.6	F	203.0	F
13 th Street & Good Hope Road	10.4	B	10.2	B	13.4	B	12.4	B
14 th Street & Good Hope Road	12.6	B	12.9	B	11.0	B	11.2	B
Minnesota Avenue & Good Hope Road	11.3	B	11.5	B	4.4	A	4.8	A
MLK, Jr. Avenue & W Street	13.7	B	12.9	B	16.0	B	17.5	B
MLK, Jr. Avenue & Chicago Street	7.1	A	8.4	A	4.5	A	11.9	B
MLK, Jr. Avenue & Morris Road	11.0	B	12.5	B	4.1	A	4.5	A
MLK, Jr. Avenue & Talbert Street	10.5	B	9.9	A	10.0	A	10.8	B
MLK, Jr. Avenue & Howard Road	26.8	C	31.6	C	31.8	C	69.7	E
MLK, Jr. Avenue & Suitland Parkway Ramps	40.0	D	41.0	D	37.9	D	39.8	D
MLK, Jr. Avenue & Sumner Road	11.6	B	12.7	B	7.2	A	8.3	A
Firth Sterling Avenue & Howard Road	38.2	D	60.0	E	25.8	C	27.4	C
Firth Sterling Avenue & Suitland Parkway	66.7	E	106.2	F	118.6	F	128.5	F
I-295 NB Ramps & Suitland Parkway	56.1	E	66.0	E	45.5	D	72.2	E
I-295 SB Ramps & Suitland Parkway	25.1	C	31.5	C	52.8	D	88.5	F
South Capitol Street & Firth Sterling Avenue	114.0	F	104.6	F	225.2	F	42.1	D
South Capitol Circle & Suitland Parkway	81.4	F	124.5	F	19.9	B	24.8	C
South Capitol Circle & Howard Road	29.3	C	23.6	C	11.6	B	23.9	C
South Capitol Circle & South Capitol Street	12.0	B	15.6	B	232.2	F	286.3	F
South Capitol Circle & South Capitol Street	13.2	B	14.3	B	29.0	C	13.2	B

Source: Gorove/Slade, 2010

4.6.1.5 Alternative 3

Similar to the analysis conducted for Alternatives 1 and 2, Table 4.6.22 shows the base number of trips generated by Alternative 3.

Table 4.6.22 Alternative 3: Base Vehicular and Person-Trips Generated

Mode/Land Use	Size		AM Peak Hour			PM Peak Hour			Daily Total
			In	Out	Total	In	Out	Total	
Vehicle Trips									
Residential Townhomes	258	Units	19	91	110	85	46	131	1,468
Residential Mid-Rise Units	2,021	Units	253	563	816	556	403	959	9,590
Residential High-Rise Units	2,021	Units	150	449	599	402	257	659	6,752
<i>Total Residential</i>	<i>4,750,000</i>	<i>Sq. Ft</i>	<i>422</i>	<i>1,103</i>	<i>1,525</i>	<i>1,043</i>	<i>706</i>	<i>1,749</i>	<i>17,810</i>
Office	730,000	Sq. Ft	810	110	920	152	744	896	6,166
Retail	260,000	Sq. Ft	165	106	271	591	616	1,207	12,638
<i>(Internal Synergy)</i>	<i>20% Reduction</i>		<i>--</i>	<i>--</i>	<i>--</i>	<i>(118)</i>	<i>(123)</i>	<i>(241)</i>	<i>(2,528)</i>
<i>Total Retail</i>			<i>165</i>	<i>106</i>	<i>271</i>	<i>473</i>	<i>493</i>	<i>966</i>	<i>10,110</i>
Museum^	460,000	Sq. Ft	828	92	920	368	1,472	1,840	18,400
Total Vehicular Trips*			2,225	1,411	3,636	2,036	3,415	5,451	52,486
Person-Trips									
Residential	1.1	PPV	464	1,214	1,678	1,147	777	1,924	19,591
Office	1.1	PPV	891	121	1,012	167	819	986	6,783
Retail	1.1	PPV	182	116	298	520	543	1,063	11,121
Museum^	2.5	PPV	828	92	920	368	1,472	1,840	18,400
Total Person-Trips			2,365	1,543	3,908	2,202	3,611	5,813	55,895

Source: Gorove/Slade, 2010

^ Museum trips generated as person-trips.

* Combination of vehicular and person-trips.

A similar mode split analysis completed for Alternatives 1 and 2 was conducted for Alternative 3, shown in Table 4.6.23. These mode-split percentages were used to calculate the number of trips generated for each mode, based on the trip generation shown previously.

Table 4.6.23 Alternative 3: Mode Split Assumptions

Land Use	Vehicle	Transit		Walk	Bike
		Metrorail	Metrobus		
Residential	38%	38%	12%	10%	2%
Office	63%	23%	7%	6%	1%
Retail	41%	33%	7%	15%	4%
Museum	48%	26%	9%	15%	2%

Source: Gorove/Slade, 2010

Finally, the vehicular-trips generated for the retail uses were discounted in order to account for pass-by traffic on the surrounding roadways. Based on the information provided in the ITE *Trip Generation*, a pass-by percentage of 20% was assumed. In addition, person-trips calculated for the vehicular mode were converted back to vehicle-trips using the average vehicle occupancy of 1.1 persons per vehicle for the office, retail, and residential land uses and of 2.5 for the Museum. Table 4.6.24 shows the trip generation by mode for Alternative 3.

Table 4.6.24 Alternative 3: Trip Generation by Mode

Mode/Land Use	AM Peak Hour			PM Peak Hour			Daily Total
	In	Out	Total	In	Out	Total	
Metrorail Person-Trips							
Residential	176	462	638	436	295	731	7,445
Office	205	28	233	38	189	227	1,560
Retail	60	38	98	172	179	351	3,670
Museum	215	24	239	96	382	478	4,784
<i>Total New Metrorail Person-Trips</i>	<i>656</i>	<i>552</i>	<i>1,208</i>	<i>742</i>	<i>1,045</i>	<i>1,787</i>	<i>17,459</i>
Metrobus Person-Trips							
Residential	56	145	201	138	93	231	2,351
Office	62	9	71	12	57	69	475
Retail	13	8	21	36	38	74	778
Museum	56	6	62	25	99	124	1,244
<i>Total New Metrobus Person-Trips</i>	<i>187</i>	<i>168</i>	<i>355</i>	<i>211</i>	<i>287</i>	<i>498</i>	<i>4,848</i>
Walking Person-Trips							
Residential	46	122	168	115	77	192	1,959
Office	53	8	61	10	49	59	407
Retail	27	18	45	78	81	159	1,668
Museum	124	14	138	55	221	276	2,760
<i>Total New Walking Person-Trips</i>	<i>250</i>	<i>162</i>	<i>412</i>	<i>258</i>	<i>428</i>	<i>686</i>	<i>6,794</i>
Bicycle Person-Trips							
Residential	9	25	34	23	15	38	392
Office	9	1	10	2	8	10	68
Retail	7	5	12	21	22	43	445
Museum	17	1	18	7	30	37	368
<i>Total New Bicycle Person-Trips</i>	<i>42</i>	<i>32</i>	<i>74</i>	<i>53</i>	<i>75</i>	<i>128</i>	<i>1,273</i>
Vehicle Trips							
Residential	161	418	579	395	270	665	6,767
Office	511	68	579	95	470	565	3,885
Retail	54	35	89	155	162	317	3,316
Museum	166	19	185	74	296	370	3,698
<i>Total New Vehicle Trips</i>	<i>892</i>	<i>540</i>	<i>1,432</i>	<i>719</i>	<i>1,198</i>	<i>1,917</i>	<i>17,666</i>
Total Trips*	2,746	1,834	4,580	2,530	3,984	6,514	61,687

Source: Gorove/Slade, 2010

* Combination of vehicular and person-trips.

Trip generation for the Howard Road parcels and WMATA garage were calculated using the method described for the Poplar Point development alternatives. It was assumed that the two parcels would have an equivalent mode split as Alternative 3, as shown in Table 4.6.25.

Table 4.6.25 Alternative 3: Base Vehicular Trips Generated for WMATA Garage and Howard Road Parcels

Mode/Land Use	Size		Trip Generation						Daily Total
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
Vehicle Trips									
Residential	1,300	Units	68	334	402	320	173	493	5,992
Office	309,162	Sq. Ft	407	56	463	72	353	425	3,182
Retail	51,527	Sq. Ft	63	41	104	200	208	408	4,414
(Internal Synergy)	20% Reduction		--	--	--	(40)	(42)	(82)	(884)
Total Retail			63	41	104	160	166	326	3,530
Total Vehicular Trips			538	431	969	552	692	1,244	12,704
Person-Trips									
Residential	1.1	PPV	75	367	442	352	190	542	6,591
Office	1.1	PPV	448	61	509	79	389	468	3,500
Retail	1.1	PPV	69	45	114	176	183	359	3,883
Total Person-Trips			592	473	1,065	607	762	1,369	13,974

Source: Gorove/Slade, 2010

Following the steps outlined previously, Table 4.6.26 shows the number of trips generated by mode under Alternative 3 for the WMATA garage and Howard Road parcels. Alternative 3 would generate 1,009 trips during the morning peak hour, 1,283 trips during the afternoon peak hour, and 13,111 daily trips.

Table 4.6.26 Alternative 3: Trip Generation by Mode for WMATA Garage and Howard Road Parcels

Mode/Land Use	AM Peak Hour			PM Peak Hour			Daily Total
	In	Out	Total	In	Out	Total	
Metrorail Person-Trips							
Residential	29	139	168	134	72	206	2,505
Office	103	14	117	18	90	108	805
Retail	23	15	38	58	60	118	1,281
<i>Total New Metrorail Person-Trips</i>	<i>155</i>	<i>168</i>	<i>323</i>	<i>210</i>	<i>222</i>	<i>432</i>	<i>4,591</i>
Metrobus Person-Trips							
Residential	9	44	53	42	23	65	791
Office	31	5	36	6	27	33	245
Retail	5	3	8	12	13	25	272
<i>Total New Metrobus Person-Trips</i>	<i>45</i>	<i>52</i>	<i>97</i>	<i>60</i>	<i>63</i>	<i>123</i>	<i>1,308</i>
Walking Person-Trips							
Residential	8	36	44	35	19	54	659
Office	27	4	31	5	23	28	210
Retail	10	7	17	26	28	54	582
<i>Total New Walking Person-Trips</i>	<i>45</i>	<i>47</i>	<i>92</i>	<i>66</i>	<i>70</i>	<i>136</i>	<i>1,451</i>
Bicycle Person-Trips							
Residential	2	7	9	7	4	11	132
Office	4	1	5	1	4	5	35
Retail	3	2	5	7	7	14	155
<i>Total New Bicycle Person-Trips</i>	<i>9</i>	<i>10</i>	<i>19</i>	<i>15</i>	<i>15</i>	<i>30</i>	<i>322</i>
Vehicle Trips							
Residential	25	128	153	122	65	187	2,276
Office	257	34	291	45	222	267	2,005
Retail	20	14	34	53	55	108	1,158
<i>Total New Vehicle Trips</i>	<i>302</i>	<i>176</i>	<i>478</i>	<i>220</i>	<i>342</i>	<i>562</i>	<i>5,439</i>
Total Trips*	556	453	1,009	571	712	1,283	13,111

Source: Gorove/Slade, 2010

* Combination of vehicular and person-trips.

Table 4.6.27 shows the total number of trips generated by Alternative 3 combined with the WMATA garage and Howard Road parcels. Table 4.6.28 shows the number of trips generated for each mode for Alternative 3 combined with the WMATA garage and Howard Road parcels. Alternative 3 would generate 1,531 Metrorail trips during the morning peak hour, 2,219 during the afternoon peak hour, and 22,050 daily Metrorail trips. Alternative 3 would generate 452 Metrobus trips during the morning peak hour, 621 during the afternoon peak hour, and 6,156 daily Metrobus trips. Alternative 3 would generate 504 walking trips during the morning peak hour, 822 during the afternoon peak hour, and 8,245 daily walking trips. Alternative 3 would generate the 158 during the afternoon peak hour, and 1,595 daily bicycle trips. Alternative 3 would generate 1,910 vehicular trips during the morning peak hour, 2,479 during the afternoon peak hour, and 23,105 daily vehicular trips.

Table 4.6.27 Alternative 3: Total New Trips Generated

Development	AM Total	PM Total	Daily Total
Poplar Point Development	3,481	5,016	48,040
WMATA Garage	582	760	6,748
Howard Road Parcels	427	523	6,363
Total	4,490	6,299	61,151

Source: Gorove/Slade, 2010

Table 4.6.28 Alternative 3: Total New Trips Generated by Mode

Development	AM Peak Hour Total	PM Peak Hour Total	Daily Total
Metrorail Person-Trips			
Poplar Point Development	1,208	1,787	17,459
WMATA Garage	155	226	2,086
Howard Road Parcels	168	206	2,505
<i>Total New Metrorail Person-Trips</i>	<i>1,531</i>	<i>2,219</i>	<i>22,050</i>
Metrobus Person-Trips			
Poplar Point Development	355	498	4,848
WMATA Garage	44	58	517
Howard Road Parcels	53	65	791
<i>Total New Metrobus Person-Trips</i>	<i>452</i>	<i>621</i>	<i>6,156</i>
Walking Person-Trips			
Poplar Point Development	412	686	6,794
WMATA Garage	48	82	792
Howard Road Parcels	44	54	659
<i>Total New Walking Person-Trips</i>	<i>504</i>	<i>822</i>	<i>8,245</i>
Bicycle Person-Trips			
Poplar Point Development	74	128	1,273
WMATA Garage	10	19	190
Howard Road Parcels	9	11	132
<i>Total New Bicycle Person-Trips</i>	<i>93</i>	<i>158</i>	<i>1,595</i>
Vehicle Trips			
Poplar Point Development	1,432	1,917	17,666
WMATA Garage	325	375	3,163
Howard Road Parcels	153	187	2,276
<i>Total New Vehicle Trips</i>	<i>1,910</i>	<i>2,479</i>	<i>23,105</i>
Total Trips*	4,490	6,299	61,151

Source: Gorove/Slade, 2010

A capacity analysis similar to Alternatives 1 and 2 was conducted for Alternative 3 in order to determine the for the project future LOS) for the morning and afternoon peak hours for the study intersections. Table 4.6.29 shows the projected capacity analysis results for Alternative 3 for the morning and afternoon peak hours. The No Action Alternative capacity analysis results are also shown for comparison. The results shown are delay measured in seconds per vehicle and overall LOS for the signalized intersections. Intersections with unacceptable results (LOS F) are shown in **bold**.

Table 4.6.29 Alternative 3: Future Peak Hour Capacity Analysis Results

Intersection	Future Alternative 3 Peak Hour Capacity Analysis Results							
	Morning Peak Hour				Afternoon Peak Hour			
	No-Action		Alternative 3		No-Action		Alternative 3	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
11 th Street & I-295 SB Ramps	1.7	A	2.7	A	4.4	A	7.9	A
11 th Street & I-295 NB Ramps	62	E	87.7	F	40.1	D	42.6	D
MLK, Jr. Avenue & Good Hope Road	77.9	E	101.3	F	174.6	F	260.9	F
13 th Street & Good Hope Road	10.4	B	10.0	A	13.4	B	13.1	B
14 th Street & Good Hope Road	12.6	B	12.6	B	11.0	B	11.1	B
Minnesota Avenue & Good Hope Road	11.3	B	11.3	B	4.4	A	4.6	A
MLK, Jr. Avenue & W Street	13.7	B	13.8	B	16.0	B	21.4	C
MLK, Jr. Avenue & Chicago Street	7.1	A	7.9	A	4.5	A	7.7	A
MLK, Jr. Avenue & Morris Road	11.0	B	11.2	B	4.1	A	4.4	A
MLK, Jr. Avenue & Talbert Street	10.5	B	10.6	B	10.0	A	10.6	B
MLK, Jr. Avenue & Howard Road	26.8	C	27.8	C	31.8	C	47.5	D
MLK, Jr. Avenue & Suitland Parkway Ramps	40.0	D	41.1	D	37.9	D	39.6	D
MLK, Jr. Avenue & Sumner Road	11.6	B	12.3	B	7.2	A	8.4	A
Firth Sterling Avenue & Howard Road	38.2	D	104.5	F	25.8	C	58.0	E
Firth Sterling Avenue & Suitland Parkway	66.7	E	109.8	F	118.6	F	132	F
I-295 NB Ramps & Suitland Parkway	56.1	E	67.1	E	45.5	D	72.4	E
I-295 SB Ramps & Suitland Parkway	25.1	C	31.0	C	52.8	D	76.2	E
South Capitol Street & Firth Sterling Avenue	114.0	F	124.7	F	225.2	F	245.6	F
South Capitol Circle & Suitland Parkway	81.4	F	120.2	F	19.9	B	22.4	C
South Capitol Circle & Howard Road	29.3	C	60.8	E	11.6	B	68.1	E
South Capitol Circle & South Capitol Street	12.0	B	15.0	B	232.2	F	276.8	F
South Capitol Circle & South Capitol Street	13.2	B	19.4	B	29.0	C	57.8	E

Source: Gorove/Slade, 2010

Conclusion

As shown in Table 4.6.29, several study intersections are projected to operate under unacceptable conditions under the No Action Alternative and Alternative 3. The following intersections would operate under acceptable conditions during the morning and/or afternoon peak hour:

- 11th Street & I-295 NB Ramps
- MLK, Jr. Avenue & Good Hope Road
- Firth Sterling Avenue & Howard Road

- Firth Sterling Avenue & Suitland Parkway
- South Capitol Street & Firth Sterling Avenue
- South Capitol Circle & Suitland Parkway
- South Capitol Circle & South Capitol Street

Similar to Alternatives 1 and 2, Alternative 3 would include millions of square feet of development that would generate thousands of vehicle trips a day to and from Poplar Point. The location of a Metrorail station adjacent to Poplar Point and the availability of other alternate modes would reduce this impact, but it would still be noticeable. Thus, there would be a long-term moderate adverse impact to the surrounding roadway network under Alternative 3. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

In order to mitigate the impacts of Alternative 3 to the surrounding roadway network, improvements are recommended for the intersections with direct access to Poplar Point. Other improvements were also investigated for the intersections that do not provide direct access to Poplar Point. Since these intersections identified for further study were included in other transportation studies, it is possible that the improvements noted are not feasible due to several factors, including limited roadway geometrics, limited right-of-way, and negative impacts to pedestrians and bicycles. It is possible that these improvements could be included in the future design of the roadway network surrounding the development if further study determines that they are feasible and beneficial. No feasible improvements are available for the intersections of Martin Luther King, Jr. Avenue and W Street or Martin Luther King, Jr. Avenue and Chicago Street.

- Adjust the signal timing and construct an eastbound left-turn lane at the intersection of Martin Luther King, Jr. Avenue and Good Hope Road.
- Adjust the signal timing and construct an eastbound right-turn lane with protected overlap at the intersection of Firth Sterling Avenue and Howard Road.
- Adjust the signal timing and construct an additional westbound right-turn lane at the intersection of South Capitol Circle and Howard Road.

Additional improvements at other nearby study intersections are also recommended.

- Adjust the signal timing at the following intersections:
 - 11th Street and I-295 Northbound Ramps
 - Firth Sterling Avenue and Suitland Parkway
 - I-295 Northbound Ramps and Suitland Parkway
 - I-295 Southbound Ramps and Suitland Parkway
 - South Capitol Circle and Suitland Parkway
 - South Capitol Circle and South Capitol Street
- Adjust the signal timing and construct an eastbound left-turn lane at the intersection of Martin Luther King, Jr. Avenue and Howard Road.
- Adjust the signal timing, construct a southbound left-turn lane, and construct an additional westbound left-turn lane at the intersection of South Capitol Street and Firth Sterling Avenue.

Table 4.6.30 shows the projected capacity analysis results for the No Action alternative and for Alternative 3, including the recommended and potential improvements, for the morning and afternoon peak hours. The results shown are delay measured in seconds per vehicle and overall LOS for the signalized intersections. Intersections with unacceptable results (LOS F) are shown in **bold**.

Table 4.6.30 Alternative 3: Future Peak Hour Capacity Analysis Results with Mitigation

Intersection	Future Alternative 3 Peak Hour Capacity Analysis Results							
	Morning Peak Hour				Afternoon Peak Hour			
	No-Action		Alternative 3		No-Action		Alternative 3	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
11 th Street & I-295 SB Ramps	1.7	A	2.8	A	4.4	A	9.0	A
11 th Street & I-295 NB Ramps	62.0	E	79.3	E	40.1	D	43.5	D
MLK, Jr. Avenue & Good Hope Road	77.9	E	115.0	F	174.6	F	199.6	F
13 th Street & Good Hope Road	10.4	B	10.2	B	13.4	B	12.6	B
14 th Street & Good Hope Road	12.6	B	12.8	B	11.0	B	11.0	B
Minnesota Avenue & Good Hope Road	11.3	B	11.4	B	4.4	A	4.6	A
MLK, Jr. Avenue & W Street	13.7	B	13.3	B	16.0	B	21.6	C
MLK, Jr. Avenue & Chicago Street	7.1	A	7.5	A	4.5	A	7.7	A
MLK, Jr. Avenue & Morris Road	11.0	B	12.0	B	4.1	A	4.5	A
MLK, Jr. Avenue & Talbert Street	10.5	B	9.9	A	10.0	A	10.9	B
MLK, Jr. Avenue & Howard Road	26.8	C	29.2	C	31.8	C	46.8	D
MLK, Jr. Avenue & Suitland Parkway Ramps	40.0	D	40.7	D	37.9	D	39.2	D
MLK, Jr. Avenue & Sumner Road	11.6	B	12.5	B	7.2	A	7.9	A
Firth Sterling Avenue & Howard Road	38.2	D	58.9	E	25.8	C	25.3	C
Firth Sterling Avenue & Suitland Parkway	66.7	E	106.4	F	118.6	F	122.4	F
I-295 NB Ramps & Suitland Parkway	56.1	E	64.9	E	45.5	D	70.9	E
I-295 SB Ramps & Suitland Parkway	25.1	C	31.7	C	52.8	D	77.6	E
South Capitol Street & Firth Sterling Avenue	114.0	F	103.0	F	225.2	F	41.3	D
South Capitol Circle & Suitland Parkway	81.4	F	118.1	F	19.9	B	25.1	C
South Capitol Circle & Howard Road	29.3	C	22.3	C	11.6	B	22.2	C
South Capitol Circle & South Capitol Street	12.0	B	15.2	B	232.2	F	276.4	F
South Capitol Circle & South Capitol Street	13.2	B	14.0	B	29.0	C	12.5	B

Source: Gorove/Slade, 2010

4.6.2 Pedestrian Circulation

4.6.2.1 Methodology and Assumptions

A high quality pedestrian network is essential to a vibrant, multi-modal urban neighborhood. There is a broad range of planning principles, best practices, and DDOT standards that guide the design of pedestrian networks. It is anticipated that these design elements and the DDOT minimum standards would be incorporated into the final development program regardless of which alternative is selected.

At this stage of the design process, each of the action alternatives is anticipated to meet all DDOT standards and improve the number and quality of pedestrian access routes. There would be some variation among the design alternatives that would impact walk distances between major destination points and some variation in the number and type of access points. These variations may change the routing and volume of pedestrians along major pathways.

Analysis Methods

The following section outlines the pedestrian access analysis performed for each of the action alternatives in order to measure the quality of the walking environment.

Sidewalk Width Requirements

Based on the trip generation rates outlined above, Gorove/Slade estimated the peak period pedestrian volumes anticipated along the busiest access route located between the Project Area and the southern Metrorail portal. This location is the primary hub of Metrobus activity and an access route between the Project Area and Martin Luther King Jr. Avenue. These rates may change if bus routes are rerouted to streets adjacent to the Project Area or through the Project Area, which is likely given the road improvements and ridership demand associated with new residents and employees.

Gorove/Slade used these pedestrian volumes to evaluate sidewalk width requirements. Pedestrian capacity analysis was conducted by assigning pedestrian traffic, estimating peak demand and calculating the minimum effective sidewalk width using the Highway Capacity Manual. Effective widths for LOS D and E were estimated. Based on this analysis, pedestrian volumes are unlikely to exceed minimum DDOT pedestrian facility design standards; therefore, sidewalks constructed to DDOT design standards while be sufficient. Given the pedestrian volumes between the Project Area and the adjacent neighborhood, sidewalk width measurements were not used as a measure of effectiveness because minimum widths are sufficient. The primary issue is the lack of sidewalks and crosswalks, not the width of existing or planned sidewalks and crosswalks and curb ramps.

Pedestrian volumes would need to exceed 2,000 pedestrians during the peak period to require effective sidewalk widths in excess of 6 feet. Table 4.6.31 lists the effective sidewalk widths requirements associated with pedestrian volumes.

Table 4.6.31 Sidewalk Widths

LOS	Sidewalk Widths			
	6 feet	8 feet	10 feet	12 feet
D	2,000	2,500	3,500	4,000
E	3,000	4,000	5,000	6,000

Source: Gorove/Slade, 2010

It should be reiterated, that major man-made and natural features within the study area negatively impact the quality of pedestrian conditions by increasing walk distances between major origins and destinations. These barriers would remain under all alternatives and would limit the pedestrian improvements associated with the build alternatives.

Measures of Effectiveness

The mobility of pedestrians in the study area was evaluated by examining the number of pedestrian access points, walk distances, and the ability of the network to encourage and facilitate walking. The number and spacing of access points is a good indicator of overall site access. For this analysis, the number of access points was totaled for each alternative and the average distance between access points was calculated. A site with more closely spaced access points provides greater access than a site with fewer access points that are further apart. Ideally, access points would be located every 400 feet.

Walking distances were measured for each alternative between three neighborhood locations and the major design features of each alternative. These measurements allow for a comparison of walking distances among alternatives. Lower walking distances are preferable because people are more likely to walk when their destination, such as employment location or Metrorail station, is within a ½ mile; although for less significant generators, such as a local retail establishment or a bus stop, a ¼ mile walk distance is ideal.

The neighborhood locations, or starting points for each measurement, were the intersection of Martin Luther King, Jr. Avenue and South Capitol Street, the northern Metrorail station portal, and the intersection of Martin Luther King, Jr. Avenue and V Street SE. These intersections were selected because they are located along the core of the existing Anacostia commercial, transit, and vehicle corridor and represent the middle point between the Project Area and the Anacostia residential neighborhoods located to the south and east. The major design features, or destinations for each measurement, were the main waterfront feature for each alternative, cultural attractions (where there were more than one major cultural attraction the average walk distance to both destinations was used), the beginning of large open space or entrance to open space (where there were more than one major open space element the average walk distance to both destinations was used), and the retail core.

Impact Thresholds

To adequately define the magnitude of the impact on pedestrian circulation, the following thresholds were established. These thresholds describe the impacts of the alternatives relative to the existing conditions.

Negligible: Impacts would be imperceptible or not detectable. There would be no decrease in pedestrian amenities. Mitigation would not be required.

Minor: Impacts would be slightly perceptible and there would be a small constrains on the transportation systems compared to existing conditions. Minor adverse impacts would not require an increase in pedestrian facilities.

Moderate: Impacts would be apparent and would constrain transportation systems compared to existing conditions. Moderate adverse impacts would result in the need for additional pedestrian facilities. Mitigation measures would be required.

Major: Major adverse impacts would pose a substantial risk of exceeding the total capacity of the regional transportation systems. New transportation facilities would be required to accommodate the increased demand. Affects could go beyond the point of impacts.

4.6.3.2 No Action Alternative

Under the No Action Alternative, pedestrian conditions within the Project Area and along access routes would be improved due to approved road construction projects and planned great streets initiatives. These projects are expected to improve walking conditions between the north and south sides of the Anacostia River, the north and south Metrorail station portals, the southern portal and the adjacent neighborhoods, and along Martin Luther King Jr. Avenue, Suitland Parkway, and Howard Road. Expected improvements include installing missing sidewalks, widening some existing sidewalks, providing for adequate curbs ramps, crosswalks and pedestrian countdown signals, and additional pedestrian amenities that would improve overall pedestrian experience.

Sidewalk Width Requirements

Pedestrian capacity analysis was conducted for the No Action Alternative by assigning pedestrian traffic, estimating peak demand, and calculating the minimum effective sidewalk width using the Highway Capacity Manual. Effective widths for LOS D and E were estimated. Based on this analysis, pedestrian volumes are unlikely to exceed minimum DDOT pedestrian facility design standards; therefore, sidewalks constructed to DDOT design standards would be sufficient. Given the pedestrian volumes in the study area, sidewalk width measurements were not used as a measure of effectiveness because minimum widths are sufficient. The primary issue is the lack of sidewalks and crosswalks, not the width of existing or planned sidewalks and crosswalks and curb ramps.

Pedestrian volumes would need to exceed 2,000 pedestrians during the peak period to require effective sidewalk widths in excess of 6 feet. It should be reiterated, that major man-made and natural features within the study area negatively impact the quality of pedestrian conditions by increasing walk distances between major origins and destinations. These barriers would remain under the No Action Alternative and improvements associated with action alternatives would not be implemented in order to enhance pedestrian access.

Measures of Effectiveness

The mobility of pedestrians in the study area was evaluated by examining the number of pedestrian access points, walk distances, and the ability of the network to encourage and facilitate walking.

For this analysis, the number of access points was totaled for the No Action Alternative and the average distance between access points was calculated. A site with more closely spaced access points provides greater access than a site with fewer access points that are further apart. Ideally, access points would be located every 400 feet. The spacing of access points impacts the attractiveness of walking between the Project Area and the adjacent neighborhood. The No Action Alternative would have only 5 access points that are spaced an average of 1,838 feet apart, which is much greater than the 400-foot ideal.

Walking distances were also measured for the No Action Alternative between three neighborhood locations and the major design features of the study area. These measurements allow for a comparison of walking distances among alternatives. The major design features of the No Action Alternative, or destinations for each measurement, were the main waterfront feature and the beginning of large open space or entrance to open space.

The No Action Alternative would have an average walk distance of approximately 2,360 feet to the waterfront and approximately 2,260 feet to the open space. Note that actual walk distances along sidewalks and pathways were measured, which provides a more accurate depiction of walk distances than a measure of the direct line or radius distance.

Conclusion

The No Action Alternative would not generate pedestrian volumes such that they would have a negative impact on pedestrian conditions. The primary impact of pedestrian activity would be along internal site streets. Under the No Action Alternative 1, there would be some changes to pedestrian circulation by the completion of the riverwalk trail. However, there would be no new site access points added and the existing barriers to pedestrian movement would remain. As such, the short- and long-term impact to pedestrian circulation would be minor under the No Action Alternative. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- DDOT and NPS should consider creating new pedestrian access points between the Anacostia community and the Project Area.

4.6.2.3 Alternative 1

Sidewalk Width Requirements

Based on the trip generation rates outlined previously, the peak period pedestrian volumes anticipated along the busiest access route located between the Project Area and the southern Metrorail portal were estimated.

This location is the primary hub of Metrobus activity and an access route between the site and Martin Luther King Jr. Avenue. The forecasted rates are listed in Table 4.6.32. These rates may change if bus routes are rerouted to streets adjacent to the Project Area or through the Project Area, which is likely given the road improvements and ridership demand associated with new residents and employees.

Table 4.6.32 Alternative 1: Projected Pedestrian Volumes

Development	AM Total	PM Total	Daily Total
Poplar Point Development	327	545	5,193
WMATA Garage	78	93	703
Howard Road Parcels	31	38	461
<i>Total</i>	<i>436</i>	<i>676</i>	<i>6,357</i>

Source: Gorove/Slade, 2010

The pedestrian volumes were used to evaluate sidewalk width requirements. Pedestrian capacity analysis was conducted by assigning pedestrian traffic, estimating peak demand and calculating the minimum effective sidewalk width using the Highway Capacity Manual. Effective widths for LOS D and E were estimated. Based on this analysis, pedestrian volumes are unlikely to exceed minimum DDOT pedestrian facility design standards; therefore, sidewalks constructed to DDOT design standards would be sufficient.

Alternative 1 could potentially generate an additional 676 pedestrian trips between the Project Area and the southern portal during a typical evening peak period. Pedestrian volumes would need to exceed 2,000 pedestrians during the peak period to require effective sidewalk widths in excess of 6 feet. Given the pedestrian volumes between the Project Area and the adjacent neighborhood, sidewalk width measurements were not used as a measure of effectiveness because minimum widths are sufficient. The primary issue is the lack of sidewalks and crosswalks, not the width of existing or planned sidewalks and crosswalks and curb ramps.

It should be reiterated, that major man-made and natural features within the study area negatively impact the quality of pedestrian conditions by increasing walk distances between major origins and destinations. These barriers would remain under all alternatives and would limit the pedestrian improvements associated with the build alternatives.

Measures of Effectiveness

The mobility of pedestrians in the study area was evaluated by examining the number of pedestrian access points, walk distances, and the ability of the network to encourage and facilitate walking. Alternative 1 would provide improved mobility between the riverfront, development, and the adjacent neighborhood and increase the number of site access points compared to the No Action Alternative. The number and spacing of access points is a good indicator of overall site access. For this analysis, the number of access points was totaled and the average distance between access points was calculated. A site with more closely spaced access points provides greater access than a site with fewer access points that are further apart. Ideally, access points would be located every 400 feet. The spacing of access points impacts the attractiveness of walking between the Project Area and the adjacent neighborhood. Alternative 1 would have 7 access points

with an average spacing of approximately 988 feet. This is an improvement compared to the No Action Alternative, with 5 access points. While the average spacing between access points for Alternative 1 is approximately half that of the No Action alternative (1,838 feet), it is still much greater than the 400-foot ideal distance.

Alternative 1 would also reduce walk distances to major destinations within the Project Area and the adjacent neighborhood and transit stops. The major design features of Alternative 1, or destinations for each measurement, were the main waterfront feature, cultural attractions, and the beginning of large open space or entrance to open space. Table 4.6.33 shows the average walk distance from each measurement start point and the stated destination for the No Action alternative and Alternative 1. Note that actual walk distances along sidewalks and pathways were measured, which provides a more accurate depiction of walk distances than a measure of the direct line or radius distance.

Table 4.6.33 Alternative 1: Walk Distance Analysis

Destination	No-Action Alternative	Alternative 1
Waterfront	2,360	2,393
Cultural Attraction	N/A	2,278
Open Space	2,260	908
<i>Average</i>	<i>2,310</i>	<i>1,860</i>

Source: Gorove/Slade, 2010

Alternative 1 would reduce average walk distance compared to the No Action Alternative because of the additional access points and improved walking conditions within the Project Area. Under the No Action Alternative there are fewer direct walking routes to the waterfront and open space and more barriers to access.

Conclusion

Alternative 1 would not generate pedestrian volumes such that they would have a negative impact on pedestrian conditions. The primary impact of pedestrian activity would be along internal site streets. It is possible that the Alternative 1 would have a positive moderate impact on pedestrian conditions by creating incentives to improve site access routes and pedestrian facilities throughout the study area. This would lead to better walking conditions and better site access. Thus, the long-term beneficial impact would be moderate. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

No mitigation is required.

4.6.2.4 Alternative 2

Sidewalk Width Requirements

A similar pedestrian volume analysis as was completed for Alternative 1 was conducted for Alternative 2, yielding the results shown in Table 4.6.34.

Table 4.6.34 Alternative 2: Projected Pedestrian Volumes

Development	AM Total	PM Total	Daily Total
Poplar Point Development	275	541	5,388
WMATA Garage	70	154	1,518
Howard Road Parcels	22	27	330
<i>Total</i>	<i>367</i>	<i>722</i>	<i>7,236</i>

Source: Gorove/Slade, 2010

The pedestrian volumes were used to evaluate sidewalk width requirements. Pedestrian capacity analysis was conducted by assigning pedestrian traffic, estimating peak demand and calculating the minimum effective sidewalk width using the Highway Capacity Manual. Effective widths for LOS D and E were estimated. Based on this analysis, pedestrian volumes are unlikely to exceed minimum DDOT pedestrian facility design standards; therefore, sidewalks constructed to DDOT design standards would be sufficient. Alternative 2 could potentially generate an additional 722 pedestrian trips between the Project Area and the southern portal during a typical evening peak period. Pedestrian volumes would need to exceed 2,000 pedestrians during the peak period to require effective sidewalk widths in excess of 6 feet. Given the pedestrian volumes between the Project Area and the adjacent neighborhood, sidewalk width measurements were not used as a measure of effectiveness because minimum widths are sufficient. The primary issue is the lack of sidewalks and crosswalks, not the width of existing or planned sidewalks and crosswalks and curb ramps.

It should be reiterated that major man-made and natural features within the study area negatively impact the quality of pedestrian conditions by increasing walk distances between major origins and destinations. These barriers would remain under each of the alternatives and would limit the pedestrian improvements associated with the action alternatives.

Measures of Effectiveness

A similar analysis as outlined for Alternative 1 was conducted for Alternative 2; however, the major design features of Alternative 2, or destinations for each measurement, were the main waterfront feature, cultural attractions, the beginning of large open space or entrance to open space, and the retail core.

Table 4.6.35 shows the average walk distance from each measurement start point and the stated destination for the No Action Alternative and Alternative 2. Note that actual walk distances along sidewalks and pathways were measured, which provides a more accurate depiction of walk distances than a measure of the direct line or radius distance.

Table 4.6.35 Alternative 2: Walk Distance Analysis

Destination	No-Action Alternative	Alternative 2
Waterfront	2,360	2,292
Cultural Attraction	N/A	2,884
Open Space	2,260	2,210
Retail Core	N/A	1,529
<i>Average</i>	<i>2,310</i>	<i>2,229</i>

Source: Gorove/Slade, 2010

Alternative 2 shows that there would be a reduction in average walk distance because of the additional access points and improved walking conditions within the Project Area compared to the No Action Alternative, or existing conditions. Under the No Action Alternative there are fewer direct walking routes to the waterfront and open space and more barriers to access.

Conclusion

Alternative 2 would not generate pedestrian volumes such that they would have a negative impact on pedestrian conditions. As a result, the long-term beneficial impact would be moderate, similar to Alternative 1. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

No mitigation is required.

4.6.2.5 Alternative 3

Sidewalk Width Requirements

A similar pedestrian volume analysis as was completed for Alternatives 1 and 2 was conducted for Alternative 3. The results are shown in Table 4.6.36.

Table 4.6.36 Alternative 3: Projected Pedestrian Volumes

Development	AM Total	PM Total	Daily Total
Poplar Point Development	412	686	6,794
WMATA Garage	48	82	792
Howard Road Parcels	44	54	659
<i>Total</i>	<i>504</i>	<i>822</i>	<i>8,245</i>

Source: Gorove/Slade, 2010

The pedestrian volumes were used to evaluate sidewalk width requirements. Pedestrian capacity analysis was conducted by assigning pedestrian traffic, estimating peak demand and calculating the minimum effective sidewalk width using the Highway Capacity Manual. Effective widths for LOS D and E were

estimated. Based on this analysis, pedestrian volumes are unlikely to exceed minimum DDOT pedestrian facility design standards; therefore, sidewalks constructed to DDOT design standards would be sufficient.

Alternative 3 could potentially generate an additional 822 pedestrian trips between the Project Area and the southern portal during a typical evening peak period. Pedestrian volumes would need to exceed 2,000 pedestrians during the peak period to require effective sidewalk widths in excess of 6 feet. Given the pedestrian volumes between the Project Area and the adjacent neighborhood, sidewalk width measurements were not used as a measure of effectiveness because minimum widths are sufficient. The primary issue is the lack of sidewalks and crosswalks, not the width of existing or planned sidewalks and crosswalks and curb ramps.

It should be reiterated, that major man-made and natural features within the study area negatively impact the quality of pedestrian conditions by increasing walk distances between major origins and destinations. These barriers would remain under each of the alternatives and would limit the pedestrian improvements associated with the action alternatives.

Measures of Effectiveness

A similar analysis as outlines for Alternatives 1 and 2 was conducted for Alternative 3, however, the major design features of Alternative 3, or destinations for each measurement, were the main waterfront feature, cultural attractions, the beginning of large open space or entrance to open space, and the retail core.

Table 4.6.37 shows the average walk distance from each measurement start point and the stated destination for the No Action Alternative, or exiting condition, compared to Alternative 3. Note that actual walk distances along sidewalks and pathways were measured, which provides a more accurate depiction of walk distances than a measure of the direct line or radius distance.

Table 4.6.37 Alternative 3: Walk Distance Analysis

Destination	No-Action Alternative	Alternative 2
Waterfront	2,360	2,518
Cultural Attraction	N/A	2,811
Open Space	2,260	1,083
Retail Core	N/A	893
<i>Average</i>	<i>2,310</i>	<i>1,826</i>

Source: Gorove/Slade, 2010

Alternative 3 shows that there would be a reduction in average walk distance because of the additional access points and improved walking conditions within the Project Area compared to the No Action Alternative. Under the No Action Alternative there are fewer direct walking routes to the waterfront and open space and more barriers to access.

Conclusion

Alternative 3 would not generate pedestrian volumes such that they would have a negative impact on pedestrian conditions. As a result, the long-term beneficial impacts would be moderate, similar to Alternatives 1 and 2. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

No mitigation is required.

DRAFT

4.6.3 Bicycle Circulation

4.6.3.1 Methodology and Assumptions

A high quality bicycle network can have a significant impact on the number of cycling trips, especially for occasional or novice cyclists. Bicycling can alleviate demand on other modes and promote an active lifestyle. The Project Area can be an excellent location for cyclists because some trips are beyond walking distance, but within reasonable bicycling distance (between 2 to 3 miles). In addition, there are many multi-use trails that link the Project Area with external destinations and the topography of the Project Area and access routes are favorable for cycling.

Analysis Methods

There is a broad range of planning principles, best practices, and DDOT standards that will guide the design of the bicycle network within the Project Area. It is anticipated that these design elements and the DDOT minimum standards would be installed in the Project Area under each of the action alternatives.

At this stage of the design process, each design alternative is anticipated to meet all DDOT standards within the Project Area. This would include improved cycling conditions within the Project Area and an increased number of access points. There would be some variation within the site that would affect cycling distances between major destinations and some variation in the number and type of access points. These variations would not be substantial enough to affect the number of bicycle trips, but it would affect bike parking and bike sharing strategies.

Measures of Effectiveness

The mobility of bicyclists in the study area was evaluated by examining the number of site access points, cycling distances, and the ability of the network to encourage and facilitate bicycling.

The number of access points was totaled for each alternative and the average distance between access points was calculated. Each of the action alternatives would have an equal number of bicycle access points and average distance between access points. Figure 4.6.2 shows the start and finish point for bicycle distance measurements. Two-mile measurements were taken. There may be slight variations in cycle distance among the alternatives, but the distances are not substantial enough to affect the number of bicycle trips. Given that variants may be slight, measurements were taken from existing access points.

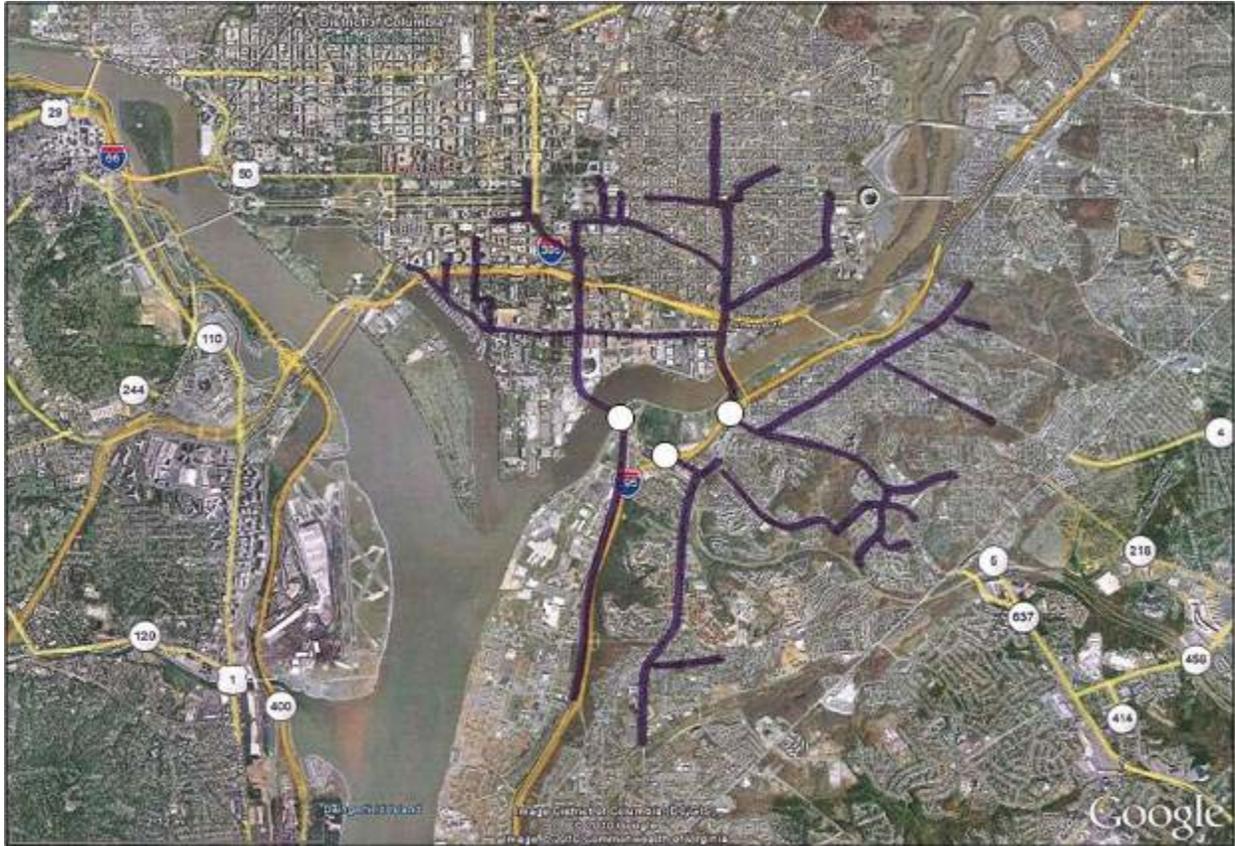


Figure 4.6.2 Two-Mile Bike Distances from Poplar Point
 Source: Gorove/Slade, 2010

Impact Thresholds

To adequately define the magnitude of the impact on bicycle circulation, the following thresholds were established. These thresholds describe the impacts of the alternatives relative to the existing conditions.

Negligible: Impacts would be imperceptible or not detectable. There would be no decrease in bicycle circulation. Mitigation would not be required.

Minor: Impacts would be slightly perceptible and there would be a small constrains on the transportation systems compared to existing conditions. Minor adverse impacts would not require an increase in bicycle facilities.

Moderate: Impacts would be apparent and would constrain transportation systems compared to existing conditions. Moderate adverse impacts would result in the need for additional bicycle facilities. Mitigation measures would be required.

Major: Major adverse impacts would pose a substantial risk of exceeding the total capacity of the regional transportation systems. New transportation facilities would be required to accommodate the increased demand. Affects could go beyond the point of impacts.

4.6.3.2 No Action Alternative

Under the No Action Alternative, bicycle conditions within the Project Area and along access routes would experience some improvement as result of the 11th Street and Fredrick Douglass Bridge projects. These projects are expected to improve bicycling conditions between the Project Area and locations north of the Anacostia River. There would also be some improvement between the Project Area access routes and the neighborhood, but barriers would remain. There are no plans to improve conditions between the study area and the adjacent neighborhood or to add additional Project Area access points for bicyclists; therefore, site access and access to the 11th Street and Fredrick Douglass Bridges from the adjacent neighborhood would continue to be an issue.

Measures of Effectiveness

The mobility of bicyclists in the study area was evaluated by examining the number of site access points, cycling distances, and the ability of the network to encourage and facilitate bicycling. The number of access points was totaled for the No Action Alternative and the average distance between access points was calculated. The No Action Alternative would have only 5 access points, with an average spacing of 1,838 feet between them. In addition, two-mile measurements were also taken, as outlined previously. These are shown in Figure 4.6.2 and would not change under the No Action Alternative.

Conclusion

The No Action would experience improved bicycle circulation as a result of planned improvements to the 11th Street and Frederick Douglass Bridges. However, no new access points would be added in the Project Area to connect bicyclists to the adjacent Anacostia community. As a result, the long-term beneficial impacts would be minor. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- The District and NPS should consider creating new bicycle connections between the Anacostia community and the Project Area.

4.6.3.3 Alternative 1

At this stage of the design process, Alternative 1 is anticipated to meet all DDOT standards within the Project Area for bicycle facilities. This would include improved cycling conditions within the Project Area and an increased number of access points. There will be some variation within the Project Area that would impact cycling distances between major destinations and some variation in the number and type of access points. These variations would have a negligible impact the number of bicycle trips, but it would have a moderate impact bike parking and bike sharing strategies. Therefore, Under Alternative 1, bicyclists would be best served by having bike parking throughout the Project Area and would not gain any benefit from having a centralized bike parking station because of the spacing of buildings and other features. The spacing of built

features has the opposite effect on bike sharing. The clustering of buildings in Alternative 1 would make walking between internal site destinations more attractive.

Measures of Effectiveness

The mobility of bicyclists in the study area was evaluated by examining the number of site access points, cycling distances, and the ability of the network to encourage and facilitate bicycling. Alternative 1 would increase the number of site access points compared to the No Action Alternative, as well as provide improved mobility between the riverfront, development, and the adjacent neighborhood. Cycling distances to destinations outside the Project Area would not change substantially compared to the No Action Alternative, but the quality of access points may increase the number of trips made by bicycle.

The number of access points was totaled for Alternative 1 and the average distance between access points was calculated. Alternative 1 would have 7 access points with an average spacing of approximately 988 feet. This is an improvement compared to the No Action alternative, which would maintain the existing 5 access points. In addition, the average spacing between access points for Alternative 1 is approximately half that of the No Action Alternative (1,838 feet). The two-mile measurements shown in Figure 4.6.2 would not change under Alternative 1.

Conclusion

The additional bicycle trips associated with Alternative 1 would not have a negative impact on bicycling conditions in the study area or on the mobility and accessibility of other modes. The primary impact of bicycle activity would be multi-use trails that would link the Project Area with downtown Washington, DC and major developments south of the Project Area. There would be increased bicycle traffic between the Project Area and the commercial and residential uses located south of the Project Area along bike lanes and shared streets. Thus, Alternative 1 would have a long-term moderate beneficial impact on bicycling conditions by creating improving bicycle conditions within the site and along site access routes. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- Distribute bicycle parking throughout the Project Area instead of creating a centralized bike parking station.
- Establish bicycle sharing stations within Poplar Point.

4.6.4.4 Alternative 2

Similar to Alternative 1, it is anticipated that these design elements and the DDOT minimum standards would be installed in the Project Area regardless of the final design. However, the clustering of buildings and open space features near the Metrorail station in Alternative 2 would justify a bike parking station at a central location within Poplar Point, in addition to dispersed bike parking facilities location throughout the Project

Area. The clustering of buildings in Alternative 2 may make walking between internal site destinations more attractive.

Measures of Effectiveness

Similar to Alternative 1, Alternative 2 would increase the number of site access points compared to the No Action Alternative, as well as provide improved mobility between the riverfront, development, and the adjacent neighborhood. The number of access points was totaled for Alternative 2 and the average distance between access points was calculated. Alternative 2 would have 6 access points with an average spacing of approximately 988 feet. The average spacing between access points for Alternative 2 is approximately half that of the No Action Alternative (1,838 feet), although one fewer access point is proposed compared to Alternative 1.

Conclusion

The additional bicycle trips associated with Alternative 2 would not have a negative impact on bicycling conditions in the study area or on the mobility and accessibility of other modes. Similar to Alternative 1, Alternative 2 would have a long-term moderate beneficial impact on bicycling conditions. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- Create a centralized bicycle parking facility within Poplar Point, as well as distributing bicycle parking stations throughout the Project Area.
- Establish bicycle sharing stations within Poplar Point.

4.6.4.5 Alternative 3

Similar to Alternatives 1 and 2, it is anticipated that these design elements and the DDOT minimum standards would be installed in the Project Area regardless of the final design. However, the clustering of buildings and open space features near the Metrorail station in Alternative 3 may justify a bike parking station at a central location within the site, in addition to dispersing bicycle parking facilities throughout the Project Area. The distances between buildings in Alternative 3 may create conditions that allow for several bicycle sharing stations within the Poplar Point. Multiple bike sharing stations within Poplar Point would allow internal site trips to be easily made by bicycle.

Measures of Effectiveness

Similar to Alternative 1 and 2, Alternatives 3 would increase the number of site access points compared to the No Action Alternative, as well as provide improved mobility between the riverfront, development, and the adjacent neighborhood. The number of access points was totaled for Alternative 3 and the average distance between access points was calculated. Alternative 3 would have 7 access points with an average

spacing of approximately 988 feet, the same as Alternative 1. The average spacing between access points for Alternative 3 is approximately half that of the No Action Alternative (1,838 feet).

Conclusion

The additional bicycle trips associated with Alternative 3 would not have a negative impact on bicycling conditions in the study area or on the mobility and accessibility of other modes. Similar to Alternatives 1 and 2, Alternative 3 would have a long-term moderate beneficial impact on bicycling conditions. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- Create a centralized bicycle parking facility within Poplar Point, as well as distributing bicycle parking stations throughout the Project Area.
- Establish multiple bicycle sharing stations within Poplar Point.

4.6.4 Transit Systems

4.6.4.1 Methodology and Assumptions

Transit is a major feature of the study area transportation network. As noted in the mode split and trip generation section, a significant number of site trips will be made by transit. The existing neighborhood already uses transit at high rates and trip rates will increase with population growth, background development and planned transportation improvements. The transit sections describe transit conditions under each of the alternatives and evaluate the impact of the development alternatives on the quality of transit service.

Impact Thresholds

To adequately define the magnitude of the impact on transit systems, the following thresholds were established. These thresholds describe the impacts of the alternatives relative to the existing conditions.

Negligible: Impacts would be imperceptible or not detectable. There would be no decrease in transit service. Mitigation would not be required.

Minor: Impacts would be slightly perceptible and there would be a small constrains on the transportation systems compared to existing conditions. Minor adverse impacts would not require an increase in transit facilities.

Moderate: Impacts would be apparent and would constrain transportation systems compared to existing conditions. Moderate adverse impacts would result in the need for additional transit facilities. Mitigation measures would be required.

Major: Major adverse impacts would pose a substantial risk of exceeding the total capacity of the regional transportation systems. New transportation facilities would be required to accommodate the increased demand. Affects could go beyond the point of impacts.

4.6.4.2 No Action Alternative

Under the No Action Alternative, transit conditions would be expected to change due to the implementation of streetcar service along Martin Luther King, Jr. Avenue. DDOT is currently installing the streetcar tracks along Firth Sterling Road west of Suitland Parkway. Streetcars will operate along Firth Sterling Road, Howard Road, and Martin Luther King, Jr. Avenue in the study area. It is not known when the construction of the streetcar line will be completed, but recent media reports indicate that it may be sometime in 2012.

Streetcars will substantially upgrade transit accessibility and mobility in the study area. It will link Bolling Air Force Base, the Anacostia Metrorail Station, Martin Luther King, Jr. Avenue, and Benning Road. The *Great Streets Framework Plan* (DDOT, 2005c) forecasted that there will be 4,000 daily streetcar boardings in the study area. The forecast was based on existing and planned development in the study area.

In addition, the *Great Streets Framework Plan* (DDOT, 2005c) indicated that Metrobus service changes may occur once streetcar is operational, such as creating feeder bus routes to the streetcar line. This may improve service above and beyond the benefits associated with streetcar. Some bus routes that mirror the streetcar route may be eliminated because streetcar will provide a more attractive travel option. It is likely that bus stops and other existing transit amenities will be upgraded to complement streetcar.

There is expected to be a substantial amount of transfer traffic between Metrorail, Metrobus and streetcar. The southern Metrorail portal will likely be a major hub of transfer activity. The south station portal is currently designed as a transfer hub so it is likely that the station will be able to accommodate the additional traffic moving between different services. Changes are anticipated in the immediate vicinity of the station due to the construction of the stop. These changes will likely improve pedestrian conditions between the different services.

No major changes are expected to Metrorail service, though if current trends continue, ridership will increase year over year. In addition to expected growth, there are several major developments that will add trips to Metrorail. The biggest of these developments will be at the St. Elizabeth's Campus located south of the site along Martin Luther King, Jr. Avenue. The project is forecasted to add 4,200 rail trips. Most of these riders will travel between the campus and the Metrorail stations via a shuttle bus. Project plans have indicated that shuttle stops will be located at the northern portal of the Anacostia station, though the southern portal is an option as well. The shuttles and passengers transferring between the station and shuttle will add vehicle and pedestrian traffic to the area. Shuttle movements, pedestrian pathways, streetcar service and other changes to the street network will need to be coordinated to provide for the most efficient operation.

Currently, there is excess capacity on the Anacostia station and on the Green Line, though crowding is common during peak periods. The fair gate area and station platform were designed to handle more ridership than currently use the station. There is additional space on the fair gate level if the number of fare gates is needed to accommodate new trips. WMATA is able to add line capacity by increasing train sizes from 6 cars to 8 cars during the peak period and reducing headways. Eight cars is the maximum number of cars that can operate per train due to station size.

The addition of streetcar, the associated changes with bus services, and background developments will alter pedestrian patterns throughout the study area. Most of these changes will occur along the streetcar corridor including at the southern Metrorail portal and along Martin Luther King, Jr. Avenue. Sidewalks constructed to meet DDOT design standards should be able to accommodate future demand.

Under the No Action Alternative, the increase in transit use generated in the Project Area would be marginal as new facilities would be installed and park visitation and employee numbers would be expected to increase moderately over time. Although there would be a substantial increase in transit systems in the vicinity of the Project Area due to other planned and proposed projects, the No Action Alternative would have a negligible short- and long-term impact on transit systems. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

4.6.4.3 Alternative 1

As stated previously, transit is a major feature of the study area transportation network. As noted in the mode split and trip generation for Alternative 1, a substantial number of trips to and from the Project Area would be made by transit. The existing neighborhood already uses transit at high rates and trip rates would increase with population growth, background development and planned transportation improvements.

Redevelopment of Poplar Point under Alternative 1 is forecast to generate a substantial number of new transit trips. These trips would be distributed among existing and planned transportation services. Table 4.6.38 lists the total number of new transit trips.

Table 4.6.38 Alternative 1: Total New Transit Trips

Development	AM Total	PM Total	Daily Total
Poplar Point Development	1,380	2,006	18,731
WMATA Garage	370	420	3,009
Howard Road Parcels	199	244	2,966
<i>Total</i>	<i>1,949</i>	<i>2,670</i>	<i>24,706</i>

Source: Gorove/Slade, 2010

The majority of new transit trips would be Metrorail trips. Table 4.6.39 lists the total new Metrorail trips for Alternative 1. The total daily boarding for Alternative 1 represents a 132% increase in the average daily station entries and exits. The large increase is due in part to the low number of entries and exits at the existing station. The vast majority of the trips would be accommodated through the northern portal. Landscape architects would need to ensure that sidewalk capacity is sufficient to accommodate volumes during peak periods at the portal. As noted above in the pedestrian section, it is not expected that many people would chose to walk between the Project Area and the southern portal because the northern portal is more convenient and provides the same quality of service. Sidewalks between the Project Area and the southern portal would not need to be expanded beyond DDOT's minimum standards to accommodate increased rail ridership.

As noted above, WMATA has been expanding Green Line capacity to meet growing demand. Data was not available to conduct station or line capacity analysis. The impact to the station is not anticipated to exceed station capacity because it was designed to accommodate more passengers than it is under existing conditions.

Table 4.6.39 Alternative 1: Total New Metrorail Trips

Development	AM Total	PM Total	Daily Total
Poplar Point Development	1,100	1,615	15,099
WMATA Garage	297	340	2,447
Howard Road Parcels	155	190	2,307
<i>Total</i>	<i>1,552</i>	<i>2,145</i>	<i>19,853</i>

Source: Gorove/Slade, 2010

Table 4.6.40 lists the total new Metrobus trips. The total daily trips of Alternative 1 would represent a 12% increase in total bus activity based on existing average daily ridership for bus routes directly serving the study area. The impact of bus trips would be less than for Metrorail because of the high existing ridership on all bus routes stopping within the study area. The total number of new Metrobus trips includes trips that might be taken by streetcar since the timing and stop location of streetcar service is not yet known.

Table 4.6.40 Alternative 1: Total New Metrobus Trips

Development	AM Total	PM Total	Daily Total
Poplar Point Development	280	391	3,632
WMATA Garage	73	80	562
Howard Road Parcels	44	54	659
<i>Total</i>	<i>397</i>	<i>525</i>	<i>4,853</i>

Source: Gorove/Slade, 2010

Under existing conditions and Alternative 1, the vast majority of study area bus routes stop at the southern portal where the bus turnaround and transfer hub is located. The nearest streetcar stop is also expected to stop at the southern portal. This would result in the vast majority of bus and streetcar riders walking between the southern portal and the Project Area, though it would be possible to access streetcar and bus stops located along Martin Luther King, Jr. Avenue via new Project Area access points located at Chicago Street and V Street. As noted above in the pedestrian analysis section, hourly pedestrian volumes between the site and transit stops would not require additional sidewalk capacity; however it may necessitate improvements to the southern portal or to bus routing and stop locations.

Crowding under existing conditions is common during peak periods at bus shelters at the southern portal. The additional streetcar passengers, background growth and site trips may warrant expanding bus facilities and bus line capacity. In addition, crowding on bus routes could occur. This could be minimized by increasing the number of buses running on the existing routes and/or adding bus stops and routes within the Project Area. The ideal walk distance to a bus stop that provides local connections is $\frac{1}{4}$ mile. Walk distance between the site and the southern portal is currently a 1,500' walk to the northern portal or slightly more than a quarter mile. This places most attractions and buildings within the Project Area beyond the ideal walk distance.

Conclusion

Alternative 1 would affect transit conditions due to the forecasted increase in transit trips. As such, the long-term impact would be moderate. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- Work with WMATA to route some bus lines through the Project Area or near the Project Area along Howard Road to reduce crowding at the southern portal and reduce the number of pedestrians walking between the Project Area and the southern portal.

- Work with WMATA to increase the number of buses running on nearby routes to reduce waiting times and minimize queues by moving passengers through quicker.
- Work with WMATA to locating bus stops closer to the Project Area or add stops in the Project Area to increase bus ridership and reducing walk distances. The ideal walk distance to a bus stop that provides local connections is ¼ mile. Walk distance between the site and the southern portal is currently a 1,500' walk to the northern portal or slightly more than a quarter mile. This places most site attractions and buildings beyond the ideal walk distance.

4.6.5.4 Alternative 2

A similar analysis as outlined in Alternative 1 was conducted for Alternative 2 to forecast the number of new transit trips. These trips will be distributed among existing and planned transportation services. Table 4.6.41 lists the total number of new transit trips.

Table 4.6.41 Alternative 2: Total New Transit Trips

Development	AM Total	PM Total	Daily Total
Poplar Point Development	1,824	3,005	29,680
WMATA Garage	483	862	8,247
Howard Road Parcels	243	298	3,625
<i>Total</i>	<i>2,550</i>	<i>4,165</i>	<i>41,552</i>

Source: Gorove/Slade, 2010

The majority of new transit trips would be Metrorail trips. Table 4.6.42 lists the total new Metrorail trips for Alternative 2. The total daily boarding for Alternative 2 represents a 209% increase in the average daily station entries and exits. The large increase is due in part to the low number of entries and exits at the existing station. The vast majority of the trips would be accommodated through the northern portal. Landscape architects would need to ensure that sidewalk capacity is sufficient to accommodate volumes during peak periods at the portal. As noted above in the pedestrian section, it is not expected that many people would chose to walk between the Project Area and the southern portal because the northern portal is more convenient and provides the same quality of service. Sidewalks between the Project Area and the southern portal would not need to be expanded beyond DDOT's minimum standards to accommodate increased rail ridership.

Table 4.6.42 Alternative 2: Total New Metrorail Trips

Development	AM Total	PM Total	Daily Total
Poplar Point Development	1,354	2,266	22,413
WMATA Garage	355	650	6,252
Howard Road Parcels	177	217	2,636
<i>Total</i>	<i>1,886</i>	<i>3,133</i>	<i>31,301</i>

Source: Gorove/Slade, 2010

Table 4.6.43 lists the total new Metrobus trips. The total daily trips for Alternative 2 would represent a 26% increase in total bus activity based on existing average daily ridership for bus routes directly serving the study

area. The impact of bus trips would be less than for Metrorail because of the high existing ridership on all bus routes stopping within the study area. The total number of new Metrobus trips includes trips that might be taken by streetcar since the timing and stop location of streetcar service is not yet known.

Table 4.6.43 Alternative 2: Total New Metrobus Trips

Development	AM Total	PM Total	Daily Total
Poplar Point Development	470	739	7,267
WMATA Garage	128	212	1,995
Howard Road Parcels	66	81	989
<i>Total</i>	<i>664</i>	<i>1,032</i>	<i>10,251</i>

Source: Gorove/Slade, 2010

Under existing conditions and Alternative 2, the vast majority of study area bus routes stop at the southern portal where the bus turnaround and transfer hub is located. The nearest streetcar stop is also expected to stop at the southern portal. This would result in the vast majority of bus and streetcar riders walking between the southern portal and the Project Area, though it would be possible to access streetcar and bus stops located along Martin Luther King, Jr. Avenue via new Project Area access points located at Chicago Street and V Street. As noted above in the pedestrian analysis section, hourly pedestrian volumes between the site and transit stops would not require additional sidewalk capacity; however it may necessitate improvements to the southern portal or to bus routing and stop locations.

Similar to Alternative 1, crowding under existing conditions is common during peak periods at bus shelters at the southern portal. The additional streetcar passengers, background growth and site trips may warrant expanding bus facilities and bus line capacity. In addition, crowding on bus routes could occur. This could be minimized by increasing the number of buses running on the existing routes and/or adding bus stops and routes within the Project Area. The ideal walk distance to a bus stop that provides local connections is $\frac{1}{4}$ mile. Walk distance between the site and the southern portal is currently a 1,500' walk to the northern portal or slightly more than a quarter mile. This places most attractions and buildings within the Project Area beyond the ideal walk distance.

Conclusion

Alternative 1 would affect transit conditions due to the forecasted increase in transit trips. As such, the long-term impact would be moderate. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.6.5.5 Alternative 3

A similar analysis as outlined in Alternatives 1 and 2 was conducted for Alternative 3 to forecast the number of new transit trips. These trips would be distributed among existing and planned transportation services.

Table 4.6.44 lists the total number of new transit trips.

Table 4.6.44 Alternative 3: Total New Transit Trips

Development	AM Total	PM Total	Daily Total
Poplar Point Development	1,563	2,285	22,307
WMATA Garage	199	284	2,603
Howard Road Parcels	221	271	3,296
<i>Total</i>	<i>1,983</i>	<i>2,840</i>	<i>28,206</i>

Source: Gorove/Slade, 2010

The majority of new transit trips would be Metrorail trips. Table 4.6.45 lists the total new Metrorail trips for Alternative 3. The total daily boarding for Alternative 3 would represent a 147% increase in the average daily station entries and exits. The large increase is due in part to the low number of entries and exits at the existing station. The vast majority of the trips would be accommodated through the northern portal. Landscape architects would need to ensure that sidewalk capacity is sufficient to accommodate volumes during peak periods at the portal. As noted above in the pedestrian section, it is not expected that many people would chose to walk between the Project Area and the southern portal because the northern portal is more convenient and provides the same quality of service. Sidewalks between the Project Area and the southern portal would not need to be expanded beyond DDOT's minimum standards to accommodate increased rail ridership.

As noted above, WMATA has been expanding Green Line capacity to meet growing demand. Data was not available to conduct station or line capacity analysis. The impact to the station is not anticipated to exceed station capacity because it was designed to accommodate more passengers than it is under existing conditions.

Table 4.6.45 Alternative 3: Total New Metrorail Trips

Development	AM Total	PM Total	Daily Total
Poplar Point Development	1,208	1,787	17,459
WMATA Garage	155	226	2,086
Howard Road Parcels	168	206	2,505
<i>Total</i>	<i>1,531</i>	<i>2,219</i>	<i>22,050</i>

Source: Gorove/Slade, 2010

Table 4.6.46 lists the total new Metrobus trips. The total daily trips of Alternative 3 would represent a 16% increase in total bus activity based on existing average daily ridership for bus routes directly serving the study area. The impact of bus trips would be less than for Metrorail because of the high existing ridership on all bus routes stopping within the study area. The total number of new Metrobus trips includes trips that might be taken by streetcar since the timing and stop location of streetcar service is not yet known.

Table 4.6.45 Alternative 3: Total New Metrobus Trips

Development	AM Total	PM Total	Daily Total
Poplar Point Development	355	498	4,848
WMATA Garage	44	58	517
Howard Road Parcels	53	65	791
<i>Total</i>	<i>452</i>	<i>621</i>	<i>6,156</i>

Source: Gorove/Slade, 2010

Under existing conditions and Alternative 3, the vast majority of study area bus routes stop at the southern portal where the bus turnaround and transfer hub is located. The nearest streetcar stop is also expected to stop at the southern portal. This would result in the vast majority of bus and streetcar riders walking between the southern portal and the Project Area, though it would be possible to access streetcar and bus stops located along Martin Luther King, Jr. Avenue via new Project Area access points located at Chicago Street and V Street. As noted above in the pedestrian analysis section, hourly pedestrian volumes between the site and transit stops would not require additional sidewalk capacity; however it may necessitate improvements to the southern portal or to bus routing and stop locations.

Similar to Alternatives 1 and 2, crowding under existing conditions is common during peak periods at bus shelters at the southern portal. The additional streetcar passengers, background growth and site trips may warrant expanding bus facilities and bus line capacity. In addition, crowding on bus routes could occur. This could be minimized by increasing the number of buses running on the existing routes and/or adding bus stops and routes within the Project Area. The ideal walk distance to a bus stop that provides local connections is $\frac{1}{4}$ mile. Walk distance between the site and the southern portal is currently a 1,500' walk to the northern portal or slightly more than a quarter mile. This places most attractions and buildings within the Project Area beyond the ideal walk distance.

Conclusion

Alternative 1 would affect transit conditions due to the forecasted increase in transit trips. As such, the long-term impact would be moderate. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

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ENVIRONMENTAL HEALTH

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4.7.1 Noise

The following describes the methodology and assumptions used in determining the impacts the action and no action alternatives would have on noise levels. This section details the methods used for evaluation, the geographic area which encompasses these resources, and the thresholds used for determining the magnitude of the impacts. Site development has the potential to result in the generation of noise during development phases of demolition, earthwork/excavation, foundation installation, and dewatering. Additionally, the operation of the Project Area after construction also provides a possibility for noise generation.

4.7.1.1 Methodology and Assumptions

Analysis Methods

A general analysis was used to determine the impacts related to noise generation the action alternatives would have on the area of analysis. The analysis was conducted by reviewing relevant local and federal policies and existing literature relating to the site. Literature included environmental reports and analyses conducted within the vicinity of the Project Area to gain an understating of the site's context and the potential impacts. A major component of this analysis is the distinction between impacts resulting from construction activities, which are short-term in nature, and those that would result from the operation of the Project Area, which are long-term.

Assumptions

The geographic area used in the analysis to determine the impacts the action alternatives would have on noise is limited to 250 feet around the perimeter of the Project Area. This distance was chosen because at 250 feet the loudest piece of machinery would be around 80 dB, the accepted level per the Washington, DC Noise Control Act.

The Washington, DC Noise Control Act limits weekday construction and demolition noise to 80 dBA (hourly average) from 7:00 a.m. to 7:00 p.m., and 55 dBA from 7:00 p.m. and 7:00 a.m. unless a variance is granted. It is expected that the majority of construction activities would be conducted during daylight hours. Construction equipment commonly used during site preparation and other construction activities are shown in Table 4.7.1. The noise levels shown represent equipment operating at full power and are equivalent to noise experienced on a sidewalk next to a busy urban street. Noise decreases with distance at a rate of about 6 dB per doubling of distance from the noise source. Therefore, receptors more than 50 feet from the construction site would experience reduced noise levels from the peak levels shown in Table 4.7.1. Equipment operating at less than full power would also have lower noise levels.

Table 4.7.1 Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level, L _{max} (dBA ¹) 50 feet from Source
Air Compressor	81
Backhoe	80
Concrete Mixer	85
Mobile Crane	83
Dozer	85
Grader	85
Pile Driver	96-101
Truck	88
Rotary Drilling Rig ³	87

Source: SDOT FTA, 2006

¹ As described in Chapter 3 of this EIS, A-weighted (dBA) sound pressure levels are typically used to account for the response of the human ear.

As shown in Table 4.7.1, individual pieces of construction equipment when operated at full power could result in noise levels that would exceed 80 dBA (hourly average) at a distance of 50 feet from the construction site. However, per Section 2704-2 of the Noise Control Act, individual pieces of construction equipment are exempt from the construction noise limits at all times. However, per Section 2704-2, equipment must be operated so as to comply with the noise limits established in Section 2802 of the Noise Control Act. Construction equipment can achieve the 80 dBA hourly average noise limit by operating at reduced power settings, by operating for periods of less than one hour continuously, or a combination of both.

Impact Thresholds

To adequately define the magnitude of the impact of noise levels, the following thresholds were established. These thresholds will characterize the impacts of the alternatives relative to the existing conditions.

Negligible: The noise generated during construction or operation is not discernable above background noise levels.

Minor: The noise generated during construction or operation is sometimes discernable above background noise levels, but would be short-term in duration and would not be a nuisance to sensitive receptors.

Moderate: The noise is readily apparent and/or is easily discernable by sensitive noise receptors above background levels, but remains below levels established by regulatory guidelines. The effects are primarily local; however, noise is periodically noticeable offsite.

Major: The noise generated during construction or operation exceeds levels established by regulatory guidelines, greatly impacts sensitive noise receptors, or is frequently noticeable a great distance from the site.

Unless otherwise noted, all impacts relating to noise are assumed to be local impacts that affect only the immediate area of the noise source. No impacts to regional noise conditions are anticipated from any of the proposed alternatives.

4.7.1.2 No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no construction activities on-site. Routine maintenance would continue to occur associated with the operation of Anacostia Park. Further, the USPP headquarters and aviation facility would continue in their current locations onsite. As a result, the use of heavy machinery and other noise generating equipment would not be necessary. Short-term noise impacts would be negligible.

Under the No Action Alternative, no new noise sources would be added to the site. The current land uses would persist, including the Aviation facility and the associated maintenance hangar. It is assumed that the levels of noise described in Section 3.6.1 would also persist. The long-term impact would be negligible.

Cumulative Impacts

There would be negligible short-and long-term impacts to noise levels as a result of the No Action Alternative. There would thus be negligible cumulative impacts to this resource. Any additional noise produced in the vicinity of the Project Area would be the result of the other projects and not the No Action Alternative.

Conclusion

Under the No Action Alternative, there would be negligible short-and long-term impacts to noise levels as no new construction or operational activities are planned to occur. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

No mitigation is required.

4.7.1.3 Alternative 1

Direct and Indirect Impacts

Construction Impacts

Construction activities, such as pile driving for the installation of foundations and pilings, are anticipated to occur as part of Alternative 1, along with the use of heavy trucks. A substantial amount of grading and excavation would also occur within Poplar Point to create the terraced areas. Some grading and construction

would take place within Southern Anacostia Park implement the proposed park improvements. In addition, grading and building construction would occur in the North Field to relocate the USPP headquarters and aviation facility to this portion of the Project Area.

The Project Area is currently developed with park uses associated with the southern extent of Anacostia Park. There are currently no residential uses located onsite. Noise sensitive receptors within the Project Area are limited to park users.

Implementation of Alternative 1 would involve development of a mix of residential, office, and retail uses on 40 acres near the point. Because residential uses are not currently located within Poplar Point and the bulk of recreational uses occur to the north within southern Anacostia Park, the impacts to noise sensitive receptors within Poplar Point would be minor.

As part of Alternative 1, development activity would occur within southern Anacostia Park and the North Field. These areas are currently heavily utilized by park users. It should be noted that the majority of park visitors are on site during the weekend when construction activity would not be scheduled to occur. Nonetheless, park users would be exposed to a short-term increase in ambient noise levels during the construction period. In accordance with District construction noise limits. In addition, mitigation measures would be required to limit exposure of park users to construction noise levels. However, even with implementation of mitigation measures, construction noise levels would expose on site sensitive receptors to substantial noise volumes. The short-term construction-related noise impacts to park users would be moderate and adverse.

Alternative 1 proposes development throughout the Poplar Point portion of the site, specifically at the “point” and along the southern edge adjacent to Historic Anacostia. Along the southern edge of the site, current noise levels are elevated due to its proximity to I-295, a major transportation corridor. Given this current elevated noise level, construction noise would only be periodically discernable above background noise levels. Construction noise is expected to be greatest during the preparation of building foundations phases when operation of pile drivers would be required. Construction of the USPP headquarters and aviation facility would also place construction equipment within the vicinity of the adjacent residential neighborhood. The construction contractor would be responsible for ensuring compliance with the Noise Control Act. If the construction contractor determined that it would not be possible to achieve the District’s construction noise limits, the contractor would be required to take additional steps to reduce noise or would be required to obtain a variance in accordance with the procedures specified in Section 2706 of the Noise Control Act.

The movement of heavy trucks transporting construction materials could also cause an adverse noise impact to the adjacent residential community and noise levels would be greater if the residences are located adjacent to the designated truck route. To the extent practicable, truck routes would be selected to use major arterial roadways to minimize travel adjacent to residential areas. Noise impacts associated with truck transport of material would be minimized by operating heavy trucks within the daytime construction hours specified in the Noise Control Act. In addition, potential impacts to any given residence would be limited to

the time required for a truck to pass a given point along the route. With implementation of mitigation, short-term construction-related noise impacts to the adjacent neighborhood would be moderate and adverse.

Operational Impacts

Under Alternative 1, Poplar Point would contain a mix of residential, office, and retail uses. Development within Poplar Point would be concentrated at the Point. As such, it would be located at a great enough distance from the roadway noise on I-295 and noise associated with the operation of the streetcar. Further, the location of Poplar Point adjacent to Southern Anacostia Park would ensure that noise levels are within the District's standards for mixed-use development.

The location of the remaining 70-acre park set aside within Poplar Point would act as a buffer between the more intensive development in Poplar Point and the mix of active and passive recreation uses in Southern Anacostia Park. As such, park visitors within southern Anacostia Park would not be exposed to substantial noise levels generated by activities within Poplar Point. Similarly, sensitive receptors living within Poplar Point would not be exposed to noise generated by active recreation uses in southern Anacostia Park. The long-term impact to these two sensitive receptors would be minor.

As part of Alternative 1, the USPP headquarters and aviation facility would be relocated from the northern part of Poplar Point to the North Field. Operation of the USPP and aviation facility currently occurs as part of operation of the park. Therefore, relocation of these uses to the North Field would not cause a change in noise levels within the park to which park users are routinely exposed. The impact to the park would be negligible.

However, relocation of the USPP headquarters and aviation facility to the North Field would increase the noise levels experienced by nearby residential uses that are not currently located in the vicinity of these uses. Residential uses are located east of the North Field and are divided from the Project Area by I-295. Background traffic noise on I-295 a distance from the aviation facility would minimize noise levels experienced by nearby residential uses. Thus, the increase in noise levels would be minor.

As part of Alternative 1, improvements would be implemented within southern Anacostia Park, including striping fields, adding picnic areas, and reconfiguring roadways and parking. These improvements are expected to increase the number of visitors to southern Anacostia Park. However, due to the separation of the park from the nearby residential uses by I-295, these residential uses would not experience a perceivable increase in noise levels. The impact would be negligible. Park uses are currently exposed to vehicular traffic noise due to the park's location adjacent to I-295. Implementation of Alternative 1 would result in any changes to this existing condition. As such, the impact would be negligible.

Cumulative Impacts

When considering the short-term impacts to noise levels resulting from the construction at Poplar Point, together with the 11th Street Bridges and Frederick Douglass Bridge construction, there could be a moderate adverse short-term cumulative impact to noise levels. However, this would only occur if the construction activities happened simultaneously. As with Alternative 1, the cumulative projects would be required to

implement noise reduction measures and comply with the District's Noise Control Act. There would be no long-term cumulative noise impacts due to the operation of the Project Area from surrounding uses by I-295 and the Anacostia River.

Conclusion

Alternative 1 would have moderate short-term adverse impacts to sensitive noise receptors during the site preparation and construction phases. The use of heavy machinery would be detectable against ambient noise levels off-site. There would be negligible to minor adverse long-term impacts during the site's operation under each of the Alternative 1. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- The construction team should select truck routes to minimize the potential for noise impacts to sensitive noise receptors (e.g., residences) from trucks during construction, particularly during truck trips to and from the site to haul demolition waste, excavated soil, and construction materials.
- The construction team should attempt to limit truck trips to the hours of 7:00 a.m. to 7:00 p.m., particularly for routes that may be located near residential areas.
- All construction equipment should be equipped with residential-grade mufflers and/or other suitable noise attenuation devices.
- Use of pile driving should be minimized where possible on the project site.
- When feasible, the construction contractor should use rubber-tired equipment as opposed to track equipment.
- The construction contractor should establish a "noise disturbance coordinator" prior to the start of construction. The noise disturbance coordinator should be responsible for responding to any local complaints about construction noise. The disturbance coordinator should determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and should be required to implement reasonable measures such that the complaint is resolved. All signs posted at the construction site should list the telephone number for the disturbance coordinator.

4.7.1.4 Alternative 2

Direct and Indirect Impacts

Construction Impacts

Similar construction activities to Alternative 1, including development at Poplar Point, improvements to southern Anacostia Park, and relocation of the USPP headquarters and aviation facility to the North Field, would occur under Alternative 2. As such, implementation of Alternative 2 would result in minor adverse impacts noise sensitive receptors in Poplar Point and moderate adverse impacts to noise sensitive receptors in Southern Anacostia Park. Mitigation measures would be required to limit exposure of park users to

construction noise levels, however, construction noise levels would expose on site sensitive receptors to substantial noise volumes.

Alternative 2 proposes development throughout the Poplar Point portion of the site, specifically centered around the Metro station and adjacent to Historic Anacostia. This would result in similar impacts as Alternative 1 to the nearby residential uses due to the similar construction activities, compliance with local noise ordinances, and the existing noise levels of I-295. As such, with implementation of mitigation, short-term construction-related noise impacts to the adjacent neighborhood would be moderate and adverse.

Operational Impacts

Under Alternative 2, development within Poplar Point, improvements to southern Anacostia Park, and the relocation of the USPP headquarters and aviation facility to the North Field. The implementation of these actions would result in similar long-term operational impacts to noise levels within the Project Area as Alternative 1. As such, the long-term impact to sensitive noise receptors within the Project Area at Poplar Point and southern Anacostia Park would be minor. Long-term operational impacts from the aviation facility to residential uses near the North Field would also be minor due to the distance from the facility and the background noise levels generated by I-295.

Cumulative Impacts

When considering the short-term impacts to noise levels resulting from the construction at Poplar Point, together with the 11th Street Bridges and Frederick Douglass Bridge construction, there could be a moderate adverse short-term cumulative impact to noise levels. However, this would only occur if the construction activities happened simultaneously. As with Alternative 2, the cumulative projects would be required to implement noise reduction measures and comply with the District's Noise Control Act. There would be no long-term cumulative noise impacts due to the operation of the Project Area from surrounding uses by I-295 and the Anacostia River.

Conclusion

Alternative 2 would have moderate short-term adverse impacts to sensitive noise receptors during the site preparation and construction phases. The use of heavy machinery would be detectable against ambient noise levels off-site. There would be negligible to minor adverse long-term impacts during the site's operation under each of the Alternative 2. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.7.1.5 Alternative 3

Direct and Indirect Impacts

Construction Impacts

Similar construction activities to Alternatives 1 and 2, including development at Poplar Point, improvements to southern Anacostia Park, and relocation of the USPP headquarters and aviation facility to the North Field, would occur under Alternative 3. As such, implementation of Alternative 3 would result in minor adverse impacts noise sensitive receptors in Poplar Point and moderate adverse impacts to noise sensitive receptors in southern Anacostia Park. Mitigation measures would be required to limit exposure of park users to construction noise levels, however, construction noise levels would expose on site sensitive receptors to substantial noise volumes.

Alternative 3 proposes development throughout the Poplar Point portion of the site, specifically centered around the Metro station and adjacent to Historic Anacostia. This would result in similar impacts as Alternatives 1 and 2 to the nearby residential uses due to the similar construction activities, compliance with local noise ordinances, and the existing noise levels of I-295. As such, with implementation of mitigation, short-term construction-related noise impacts to the adjacent neighborhood would be moderate and adverse.

Operational Impacts

Under Alternative 3, development within Poplar Point, improvements to southern Anacostia Park, and the relocation of the USPP headquarters and aviation facility to the North Field. The implementation of these actions would result in similar long-term operational impacts to noise levels within the Project Area as Alternatives 1 and 2. As such, the long-term impact to sensitive noise receptors within the Project Area at Poplar Point and Southern Anacostia Park would be minor. Long-term operational impacts from the aviation facility to residential uses near the North Field would also be minor due to the distance from the facility and the background noise levels generated by I-295.

Cumulative Impacts

When considering the short-term impacts to noise levels resulting from the construction at Poplar Point, together with the 11th Street Bridges and Frederick Douglass Bridge construction, there could be a moderate adverse short-term cumulative impact to noise levels. However, this would only occur if the construction activities happened simultaneously. As with Alternative 3, the cumulative projects would be required to implement noise reduction measures and comply with the District's Noise Control Act. There would be no long-term cumulative noise impacts due to the operation of the Project Area from surrounding uses by I-295 and the Anacostia River.

Conclusion

Alternative 3 would have moderate short-term adverse impacts to sensitive noise receptors during the site preparation and construction phases. The use of heavy machinery would be detectable against ambient noise levels off-site. There would be negligible to minor adverse long-term impacts during the site's operation under each of the Alternative 3. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

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4.7.2 Air Quality

4.7.2.1 Methodology

The following describes the methodology and assumptions used in determining the impacts the action alternatives would create relative to air quality and global climate change. This section details the methods used for evaluation, the geographic area which encompasses these resources, and the thresholds used for determining the magnitude of the impacts.

Analysis Methods

The Clean Air Act Amendments of 1990 require federal agencies to ensure that their actions are consistent with the Clean Air Act and with federally enforceable air quality management plans (i.e., State Implementation Plans). The implementation of this requirement is known as the General Conformity Rule. The conformity assessment process is intended to ensure that federal agency actions:

- Would cause or contribute to new violations of National Ambient Air Quality Standards;
- Would increase the frequency or severity of any existing violations of ambient air quality standards; and
- Would delay the timely attainment of ambient air quality standards, which are the same criteria used to assess a significant air quality impact under NEPA.

The EPA has determined specific federal actions, or portions thereof, to be exempt from the General Conformity Rule. Actions are exempt where the total of all reasonably foreseeable direct and indirect emissions:

- Would be less than specified emission rate thresholds, known as de minimis limits (outlined in Section 3.6.2); and
- Would be less than 10% of the area's annual emission budget (outlined in Section 3.6.2).

For global climate change, a general analysis was used to determine the potential impacts the action alternatives would have on the area of analysis. The analysis was conducted by reviewing the potential sources for GHG emissions and opportunities to reduce their impact. A major component of this analysis is the distinction between impacts resulting from construction activities (short-term) versus operational activities (long-term).

Assumptions

The geographic area used in the analysis to determine the impacts the action alternatives would have on air quality and global climate change is defined by the MWAQC. This region includes the District of Columbia, along with several counties in northern Virginia and Maryland. The region is roughly defined by the boundaries for the DC-MD-VA Metropolitan Statistical Area and was required to prepare an air quality plan under Section 174 of the federal Clean Air Act Amendments of 1990.

A general description of impacts under both the construction and operational phase of the project is presented in the following sections. It should be noted that in order to calculate emissions from construction and operation of the Poplar Point development, various assumptions regarding specific activities needed to be made where site-specific information had not yet been developed. Assumptions are described in each of the following sections and detailed emission calculation spreadsheets are presented in **Appendix B**.

Impact Thresholds

To adequately define the magnitude of each impact related to air quality, the following thresholds were established. These thresholds describe the impacts of the action alternatives relative to the MWAQC region. Positive impacts would improve air quality and reduce the emission of particulate matter and pollutants of concern for the region.

Negligible: A negligible impact on air quality would occur if emissions generated by the construction or operation of the project would be barely, or infrequently noticeable offsite.

Minor: A minor impact would occur if emissions generated by the construction or operation of the project would be periodically noticeable offsite.

Moderate: A moderate impact would occur if emissions generated by the construction or operation of the project would frequently be noticeable offsite in the form of visible dust or exhaust plumes, would have a measurable impact on regional air quality, or would exceed general conformity *de minimis* levels.

Major: A major impact would occur if emissions generated by the construction or operation of the project would cause or contribute to a violation of the NAAQS or other regulatory guideline.

Duration

Short-term impacts include those that occur during the development phases; long-term impacts include those that would persist after construction is complete.

4.7.2.2 No Action Alternative

Direct and Indirect Impacts

Construction Impacts

Under the No Action Alternative, no construction activities would be expected to occur within the Project Area. The NPS NACE headquarters and USPP headquarters and aviation facility would remain in their current location. Thus, the North Field would be retained for open space and recreation uses as under existing conditions. No major modifications would be undertaken within southern Anacostia Park beyond routine maintenance. Therefore, the No Action Alternative would not generate construction emissions. The impact air quality would be negligible.

Operational Impacts

Under the No Action Alternative, no changes to the operations of southern Anacostia Park would be expected to occur. No substantial increase in park visitors would be expected to occur because there would be no changes to the facilities. Routine maintenance activities would continue to take place. The Project Area would continue to be used for open space and park uses. NPS and USPP would continue to use and maintain their existing facilities within the Project Area. No increase in employees or operational functions would be expected to occur. Thus, the long-term operational air quality impact would be negligible.

Global Climate Change

The No Action Alternative would not result in new development or changes to the project site. Under the No Action Alternative, the Project Area would continue house the NPS NACE headquarters, USPP headquarters and aviation facility as well as the park. Maintenance and landscape activities conducted by NPS would continue to occur. Because no new structures would be constructed on the project site, there would be no increase in energy use or other factors that generate additional GHG emissions. Landscape and public open space activities would be expected to continue, consistent with current conditions. As such, there would be no increase in GHGs, and therefore, the No Action Alternative would have no impact on global climate change.

Cumulative Impacts

Development is currently and would be expected to occur in the vicinity of the Project Area under the No Action Alternative. Redevelopment projects are underway or planned that would generate both construction and operational air quality emissions and greenhouse gas emissions. However, no changes would be expected to occur in the Project Area under the No Action Alternative. Therefore, the No Action would not contribute to a cumulative air quality impact. The short- and long-term air quality impact would be negligible.

Conclusion

Under the No Action Alternative, there would be negligible short-and long-term impacts to air quality as no new construction or operational activities are planned to occur. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

No mitigation is required.

4.7.2.3 Alternative 1

Direct and Indirect Impacts

Construction Impacts

There would be minor short-term air quality impacts associated with the construction Alternative 1. These impacts would be primarily caused by exhaust emissions from construction equipment and fugitive dust emissions from earthmoving activities. Fugitive dust emissions have not been quantified since detailed construction phasing schedules and mitigation plans have not yet been developed. However, fugitive dust emissions during construction would be minimized by using best management practices including watering roads during periods of dryness, limiting vehicle speeds on unpaved roads, and revegetating disturbed areas as soon as practicable following construction.

A summary of estimated emissions from construction equipment are presented in Table 4.7.1. A detailed spreadsheet containing the assumptions and emission calculations from heavy duty construction equipment is provided in **Table B-1 in Appendix B**. The emission estimates presented in Table 4.7.1 are based on the assumed mix of construction equipment and hours of operation presented in the detailed spreadsheet.

Table 4.7.1 Estimated Emissions From Construction Equipment (tons)

Source	VOC	CO	NO_x	SO₂	PM	CO₂ (short tons)	CO₂ (metric tons)
Construction Equipment	1.5	7.0	10.5	0.3	1.3	1,215	1,102

As shown in Table 4.7.1, emissions during construction of Alternative 1 would be well below the general conformity *de minimis* thresholds (50 tons/year VOCs, 100 tons/year NO_x, and 100 tons/year PM_{2.5}). Construction emissions from each of the three action alternatives are expected to be generally equivalent due to the similar size of the site to be developed under each alternative and similar size and types of buildings proposed. The differences in design among the three action alternatives would not result in a substantial difference in the amount of emissions released during site preparation activities.

Operational Impacts

The main types of long-term emissions sources associated with the operation and use of the Project Area under the action alternatives would fall into the following categories:

- Motor vehicle trips associated with the residential, office, retail, and cultural facilities development
- Emissions from natural gas usage in buildings associated primarily with space and water heating
- Emissions associated with the offsite generation of electricity used
- Emissions from miscellaneous activities on the property (USPP aviation facility)

Estimated emissions and assumptions for each of these sources and activities are described in the following sections. Detailed spreadsheets used in estimating the emissions are provided in [Appendix B](#).

Motor Vehicles

Motor vehicle trips associated with land transfer and redevelopment of Poplar Point would be a substantial source of total project-related emissions. Many of the motor vehicle trips associated with the redevelopment of Poplar Point may be redirected trips from elsewhere in the Washington, DC metro area; however, for the purposes of this analysis, all of the trips are assumed to be new trips.

Total motor vehicle trips associated with Alternative 1 include trips generated by the Poplar Point development, the WMATA garage, and the Howard Road parcels. Table 4.7.2 shows total vehicular trips for Alternative 1 at project buildout (2035) and at the completion of Phase 1 (2015). Based on the land uses estimates developed for Phase 1, total trip generation for Phase 1 was expected to be 20% of total project buildout vehicular trips.

Table 4.7.2 Alternative 1: Trip Generation

Land Use	Vehicular Trips for Poplar Point Development	Vehicular Trips for WMATA and Howard Road Parcels	Total Vehicular Trips (Buildout 2035)	Total Vehicular Trips (Phase 1 - 2015)
Residential	6,397	2,756	9,153	1,831
Office	7,024	5,781	12,805	2,561
Retail	3,450	716	4,166	833
Museum	4,617	--	4,617	923
TOTAL	21,488	9,253	30,741	6,148

Source: Gorove/Slade, 2010

Alternative 1 would generate the most number of new vehicle trips of the action alternatives. Thus, Alternative 1 would have the greatest motor vehicle emissions.

Emission summaries for motor vehicle trips for Phase 1 (2015) and project buildout (2035) for Alternative 1 are presented in Table 4.7.3 Detailed emission calculations for motor vehicle trips are presented in Table B-2 in [Appendix B](#). Emission factors used to calculate emissions from motor vehicles were calculated from emissions by vehicle type presented in the Baltimore Nonattainment Area PM_{2.5} State Implementation Plan (SIP) and Base Year Inventory (MDE, 2008). These emission factors are somewhat conservative in that the SIP used a vehicle fleet mix for 2005, and due to improvements in motor vehicle emissions technology, emissions from motor vehicles in 2015 and 2035 would be lower than those presented in Table 4.7.3.

Table 4.7.3 Alternative 1: Emission Summary for Motor Vehicles.

Phase	VOC	CO	Estimated Total Emissions (tons)				
			NO _x	SO ₂	PM _{2.5}	PM ₁₀	CO ₂
Phase 1 (2015)	26.7	456.7	25.9	0.3	0.6	1.3	22,215
Buildout (2035)	133.5	2,283.6	129.7	1.7	2.9	6.4	111,076

Emissions from Natural Gas Usage

Natural gas would be used for space heating and water heating in buildings within the Poplar Point development area. To the extent that ground source heat pumps were used to provide heating and cooling needs, natural gas consumption and emissions would be reduced.

Emissions from natural gas usage were based on building square footage estimates for Alternative 1 and standard benchmarks for natural gas usage per total floor area for comparable structures in Baltimore, Maryland (DOE, 2010). Baltimore is used as a benchmark for this analysis because Baltimore represents the nearest benchmark city to the Washington, DC metro area for which data are available. Building square footage estimates for Alternative 1 are presented in Table 4.7.4 below. Detailed emission calculations are presented in **Table B-3 in Appendix B** and a summary of emissions is presented in Table 4.7.5.

Table 4.7.4 Alternative 1: Building Square Footage Estimates

Building Type	Benchmark Model Used	2015 (2035)
Residential	Midrise Apartment	882,620 (4,413,100)
Retail	Strip Mall	42,700 (213,500)
Office	Large Office	280,000 (1,400,000)
Cultural / Other	Large Hotel	100,000 (500,000)

Table 4.7.5 Alternative 1: Emission Summary for Natural Gas Usage

Phase	Total Natural Gas Used (MMSCF)	Estimated Total Emissions (tons)					
		VOC	CO	NOx	SO₂	PM₁₀	CO₂
Phase 1 (2015)	28	0.1	1.2	0.7	0.0	0.1	1,666
Buildout (2035)	139	0.4	5.8	3.5	0.0	0.5	8,330

Notes: MMSCF = Millions of standard cubic feet of natural gas.

In general, the action alternatives would have similar natural gas consumption rates, and therefore, similar emissions levels.

Emissions from Offsite Electricity Generation

The majority of electricity used in the Poplar Point development area would be generated offsite using the current fleet of generating stations within the North American Electric Reliability Corporation (NERC)

Reliability First Corporation (RFC) region. Emission factors for the RFC East subregion, to which the Washington, DC metro area belongs, are provided in the EPA eGRID report (EPA, 2008).

Similar to natural gas usage, emissions from offsite electricity generation were based on building square footage estimates for Alternative 1 and standard benchmarks for electricity usage per total floor area for comparable structures in Baltimore, Maryland (DOE, 2010). Building square footage estimates for each building type for each alternative were presented in Table 4.7.4 above. Detailed emission calculations are presented in Table 4.7.6 below.

Table 4.7.6 Alternative 1: Emission Summary for Offsite Electricity Generation

Phase	Total Electricity Usage (MW-hr)	Estimated Total Emissions (tons)					
		VOC	CO	NOx	SO ₂	PM ₁₀	CO ₂
Phase 1 (2015)	10,603	n/a	n/a	8.6	41.3	n/a	6,038
Buildout (2035)	53,015	n/a	n/a	43.2	206.5	n/a	30,192

Notes: MW-hr = megawatt-hours
n/a = not available

Emissions from Miscellaneous Activities

Miscellaneous activities within the Project Area that would generate emissions of air pollutants include the USPP headquarters and aviation facility and the NPS NACE headquarters. Emissions from these activities have not been quantified since no modifications to these existing emission sources and no new sources of emissions have been identified. Existing USPP operations and NPS maintenance and operations activities would continue in new locations; however, these activities and emissions are expected to be unchanged from current levels.

Summary of Emissions and Impacts

A summary of emissions for Phase 1 from each of the main emission sources associated with Alternative 1 is presented in Table 4.7.7.

Table 4.7.7 Alternative 1: Estimated Emissions From Phase 1 (tons/year)

Source	VOC	CO	NO _x	SO ₂	PM _{2.5}	PM ₁₀	CO ₂ (short tons)	CO ₂ (metric tons)
Motor Vehicle Trips	26.7	456.7	25.9	0.3	0.6	1.3	22,215	20,149
Natural Gas Use	0.1	1.2	0.7	0.0	0.1	0.1	1,666	1,511
Offsite Electricity Generation	n/a	n/a	8.6	41.3	n/a	n/a	6,038	5,477
Miscellaneous Activities ¹	--	--	--	--	--	--	--	--
TOTAL	26.8	457.9	35.2	41.6	0.7	1.4	29,919	27,137

¹ Emissions from miscellaneous activities have not been quantified and no changes from baseline are expected.

As shown in Table 4.7.7, the largest emission source associated with the land transfer and redevelopment of Poplar Point would be emissions from motor vehicles associated with employees, residents, and visitors commuting to and from Poplar Point. Emissions from motor vehicles presented in Table 4.7.7 are very conservative. Actual emissions in 2015 would be lower than the emissions presented in Table 4.7.7 due to the improvements in motor vehicle emissions technology that would be implemented by the time the Poplar Point development is operational. In addition, emissions from commute vehicles could be further reduced through measures identified in the transportation management program (TMP) described in Section 4.6 Transportation.

General Conformity

Table 4.7.7 shows that expected annual emissions of VOC, NO_x, and PM_{2.5} for Phase 1 of Alternative 1 would be well below the general conformity *de minimis* levels of 50 tons per year for VOC, 100 tons per year for NO_x, and 100 tons per year for PM_{2.5}. As such, the initial phase of Alternative 1 would be in conformance with the SIP and all requirements of the General Conformity Regulations. Due to substantial uncertainties associated with the timing of the phases, emission sources, motor vehicle fleet mix, and characteristics of the Alternative 1 buildout by 2035, it not meaningful or practical to use these preliminary emission estimates to conduct a general conformity analysis on these more distant project phases

Based on the analysis of the initial phase of the development, Alternative 1 would have a minor impact on local and regional air quality and is not expected to cause or contribute to an exceedance of any NAAQS or interfere with the attainment or maintenance of any NAAQS. Emissions from the development and new roadways and traffic associated with Alternative 1 would be included in future air quality modeling for the Washington, DC metropolitan area SIP as part of the update to the regional Transportation Improvement Program (TIP). Therefore, emissions from future phases of Alternative 1 would be specifically accounted for in the SIP and this would meet the General Conformity requirements for the future project phases and project buildout.

Global Climate Change

Construction and operation of the Alternative 1 would generate short- and long-term sources of GHGs. Short-term sources of project-generated GHG emissions would be the off-road construction equipment and on-road vehicles used for site preparation, grading, and construction of Alternative 1. Construction emissions would be short-term in nature and would not persist following completion of construction. As such, short-term impact to global climate change under Alternative 1 would be minor.

Compared to the existing NPS and USPP facilities, there would be a net increase in GHG emissions produced at the project site during operation of the Alternative 1. The consumption of fossil fuels to generate electricity and to provide heating and hot water for the developed areas, as well as the consumption of fuel by on-road mobile vehicles associated with vehicle trips generated by deliveries, residents, visitors and employees would be the primary sources of long-term GHG emissions.

As shown in Table 4.7.7 above, the principal operational emission sources associated with the land transfer and redevelopment Poplar Point would be vehicle trips, natural gas usage in buildings for space and water heating, and emissions from offsite electric generating stations. Total emissions of greenhouse gases (primarily CO₂) are expected to range from 29,919 short tons/year for Alternatives 1, or 27,137 metric tons/year. Based on these emission calculations and assumptions, CO₂ emissions from Alternative 1 (27,137 metric tons/year) would be slightly greater than the 25,000 metric tons/year indicator level as described in the CEQ draft guidance memo (CEQ, 2010).

Alternative 1 would include a number of sustainability features designed to minimize energy and water consumption onsite and increase the overall efficiency of the site operations. These measures would minimize the amount of GHG emissions that are produced during operation. Further, due to the location of the project site within the close proximity to the Anacostia Metrostation, visitors would be expected to access the site primarily through public transit. There are no Metrobus stops located within the Project Area; however, several routes provide service near the southern entrance to the Anacostia Metrostation.

Further, it is presumed that all new structures associated with the Poplar Point development would include standard building energy efficiency features. In addition, should any of the structures be constructed to Leadership in Energy and Environmental Design (LEED) standards, additional energy savings and a corresponding reduction in GHG emissions would be realized. No additional mitigation measures for GHG emissions are proposed. Given the expected energy efficient design and that calculated GHG emissions from the development are just over the CEQ indicator level, Alternative 1 would be expected to have a minor impact on global climate change.

Cumulative Impacts

Local air quality impacts from both construction and operation of Alternative are expected to be minor. To the extent that construction activities within the Project Area coincide with other construction projects in the vicinity, there could be minor localized cumulative impacts on air quality. Construction and operation of Alternative 1 would have a minor cumulative regional air quality impacts.

Conclusion

Construction and operational emissions from Alternative 1 would be just around the General Conformity *de minimis* thresholds and would not interfere with the region's progress towards attainment of the federal air quality standards. The short- and long-term adverse impacts would be minor. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

The following mitigation measures are recommended during construction to further reduce potential impacts on air quality:

- Low sulfur fuel should be used in all heavy-duty diesel construction equipment.
- Equipment should be shut down when it is not in use.
- Motor vehicles, including delivery trucks, should not be left idling for periods exceeding 5 minutes.
- Water should be applied as needed to reduce fugitive dust during earthmoving and site preparation activities.

4.7.2.4 Alternative 2

Direct and Indirect Impacts

Construction Impacts

As with Alternative 1, there would be minor short-term air quality impacts associated with the construction. These impacts would be primarily caused by exhaust emissions from construction equipment and fugitive dust emissions from earthmoving activities. A summary of estimated emissions from construction equipment are presented in Table 4.7.1 above. As shown, emissions during construction of Alternative 1 would be well below the general conformity *de minimis* thresholds (50 tons/year VOCs, 100 tons/year NO_x, and 100 tons/year PM_{2.5}). Construction emissions from each of the three action alternatives are expected to be generally equivalent due to the similar size of the site to be developed under each alternative and similar size and types of buildings proposed. The differences in design among the three action alternatives would not result in a substantial difference in the amount of emissions released during site preparation activities. Thus, the short-term construction air quality impact of Alternative 2 would be minor.

Operational Impacts

As with Alternative 1, the main types of long-term emissions sources associated with the operation and use of the Project Area under Alternative 2 would be motor vehicle trips associated with the residential, office, retail, and cultural facilities development; emissions from natural gas usage in buildings associated primarily with space and water heating; emissions associated with the offsite generation of electricity used; and emissions from miscellaneous activities on the property (USPP aviation facility).

Motor Vehicles

Motor vehicle trips associated with land transfer and redevelopment of Poplar Point would be a substantial source of total project-related emissions under Alternative 2. Many of the motor vehicle trips associated with the redevelopment of Poplar Point may be redirected trips from elsewhere in the Washington, DC metro area; however, for the purposes of this analysis, all of the trips are assumed to be new trips. Total motor vehicle trips associated with Alternative 2 include trips generated by the Poplar Point development, the WMATA garage, and the Howard Road parcels. Table 4.7.8 shows total vehicular trips for Alternative 2 at project buildout (2035) and at the completion of Phase 1 (2015).

Table 4.7.8 Alternative 2: Trip Generation

Land Use	Vehicular Trips for Poplar Point Development	Vehicular Trips for WMATA and Howard Road Parcels	Total Vehicular Trips (Buildout 2035)	Total Vehicular Trips (Phase 1 - 2015)
Residential	6,537	2,276	8,813	1,763
Office	3,057	2,917	5,974	1,195
Retail	6,015	3,655	9,670	1,934
Museum	4,452	539	4,991	998
TOTAL	20,061	9,387	29,448	5,890

Source: Gorove/Slade, 2010

Alternative 2 would generate fewer vehicle trips than Alternative 1. Emission summaries for motor vehicle trips for Phase 1 (2015) and project buildout (2035) for Alternative 2 are presented in Table 4.7.9.

Table 4.7.9 Alternative 2: Emission Summary for Motor Vehicles.

Phase	Estimated Total Emissions (tons)						
	VOC	CO	NOx	SO ₂	PM _{2.5}	PM ₁₀	CO ₂
Phase 1 (2015)	23.1	394.7	22.4	0.3	0.5	1.1	19,198
Buildout (2035)	115.4	1,973.4	112.1	1.5	2.5	5.5	95,987

Emissions from Natural Gas Usage

Natural gas would be used for space heating and water heating in buildings within the Poplar Point development area. Emissions from natural gas usage were based on building square footage estimates for Alternative 2 and standard benchmarks for natural gas usage per total floor area for comparable structures in Baltimore, Maryland (DOE, 2010). Building square footage estimates for Alternative 2 are presented in Table 4.7.10 below. A summary of emissions is presented in Table 4.7.11.

Table 4.7.10 Alternative 2: Building Square Footage Estimates

Building Type	Benchmark Model Used	2015 (2035)
Residential	Midrise Apartment	940,500 (4,702,500)
Retail	Strip Mall	131,050 (655,250)
Office	Large Office	114,000 (570,000)
Cultural / Other	Large Hotel	110,000 (550,000)

Table 4.7.11 Alternative 2: Emission Summary for Natural Gas Usage

Phase	Total Natural Gas Used (MMSCF)	Estimated Total Emissions (tons)					
		VOC	CO	NOx	SO ₂	PM ₁₀	CO ₂
Phase 1 (2015)	31	0.1	1.3	0.8	0.0	0.1	1,863
Buildout (2035)	155	0.4	6.5	3.9	0.0	0.6	9,316

Notes: MMSCF = Millions of standard cubic feet of natural gas.

In general, the action alternatives would have similar natural gas consumption rates, and therefore, similar emissions levels.

Emissions from Offsite Electricity Generation

The majority of electricity used in the Poplar Point development area would be generated offsite. Similar to natural gas usage, emissions from offsite electricity generation were based on building square footage estimates for Alternative 2 and standard benchmarks for electricity usage per total floor area for comparable structures in Baltimore, Maryland (DOE, 2010). Detailed emission calculations are presented in Table 4.7.12.

Table 4.7.12 Alternative 2: Emission Summary for Offsite Electricity Generation

Phase	Total Electricity Usage (MW-hr)	Estimated Total Emissions (tons)					
		VOC	CO	NOx	SO ₂	PM ₁₀	CO ₂
Phase 1 (2015)	10,669	n/a	n/a	8.7	41.6	n/a	6,076
Buildout (2035)	53,344	n/a	n/a	43.5	207.8	n/a	30,379

Notes: MW-hr = megawatt-hours
n/a = not available

Emissions from Miscellaneous Activities

Similar to Alternative 1, miscellaneous activities within the Project Area that would generate emissions of air pollutants include the USPP headquarters and aviation facility and the NPS NACE headquarters. Emissions from these activities have not been quantified because no modifications to these existing emission sources and no new sources of emissions have been identified.

Summary of Emissions and Impacts

A summary of emissions for Phase 1 from each of the main emission sources associated with Alternative 2 is presented in Table 4.7.13.

Table 4.7.13 Alternative 2: Estimated Emissions From Phase 1 (tons/year)

Source	VOC	CO	NO _x	SO ₂	PM _{2.5}	PM ₁₀	CO ₂ (short tons)	CO ₂ (metric tons)
Motor Vehicle Trips	23.1	394.7	22.4	0.3	0.5	1.1	19,198	17,413
Natural Gas Use	0.1	1.3	0.8	0.0	0.1	0.1	1,863	1,690
Offsite Electricity Generation	n/a	n/a	8.7	41.6	n/a	n/a	6,076	5,511
Miscellaneous Activities ¹	--	--	--	--	--	--	--	--
TOTAL	23.2	396.0	31.9	41.9	0.6	1.2	27,137	24,614

¹ Emissions from miscellaneous activities have not been quantified and no changes from baseline are expected.

General Conformity

Table 4.7.13 shows that expected annual emissions of VOC, NO_x, and PM_{2.5} for Phase 1 of Alternative 2 would be well below the general conformity *de minimis* levels of 50 tons per year for VOC, 100 tons per year for NO_x, and 100 tons per year for PM_{2.5}. As such, the initial phase of Alternative 2 would be in conformance with the SIP and all requirements of the General Conformity Regulations. Based on the analysis of the initial phase of the development, Alternative 2 would have a minor impact on local and regional air quality and is not expected to cause or contribute to an exceedance of any NAAQS or interfere with the attainment or maintenance of any NAAQS.

Global Climate Change

Construction and operation of the Alternative 2 would generate short- and long-term sources of GHGs. Construction emissions would be short-term in nature and would not persist following completion of construction. As with Alternative 1, short-term impact to global climate change under Alternative 2 would be minor.

As shown in Table 4.7.13 above, the principal operational emission sources associated with the land transfer and redevelopment Poplar Point would be vehicle trips, natural gas usage in buildings for space and water heating, and emissions from offsite electric generating stations. Total emissions of greenhouse gases

(primarily CO₂) would be 27,137 short tons/year for Alternatives 2, or 24,614 metric tons/year. Based on these emission calculations and assumptions, CO₂ emissions from Alternative 2 would not exceed the 25,000 metric tons/year indicator level as described in the CEQ draft guidance memo (CEQ, 2010).

Alternative 2 would also include a number of sustainability features designed to minimize energy and water consumption onsite and increase the overall efficiency of the site operations. Further, it is presumed that all new structures associated with the Poplar Point development would include standard building energy efficiency features. In addition, should any of the structures be constructed to Leadership in Energy and Environmental Design (LEED) standards, additional energy savings and a corresponding reduction in GHG emissions would be realized. No additional mitigation measures for GHG emissions are proposed. Given the expected energy efficient design and that calculated GHG emissions from the development are just under the CEQ indicator level, Alternative 2 would have a minor impact on global climate change.

Cumulative Impacts

Local air quality impacts from both construction and operation of Alternative are expected to be minor. To the extent that construction activities within the Project Area coincide with other construction projects in the vicinity, there could be minor localized cumulative impacts on air quality. Construction and operation of Alternative 2 would have a minor cumulative regional air quality impacts.

Conclusion

Construction and operational emissions from Alternative 2 would be just under the General Conformity *de minimis* thresholds and would not interfere with the region's progress towards attainment of the federal air quality standards. The short- and long-term adverse impacts would be minor. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.7.2.5 Alternative 3

Direct and Indirect Impacts

Construction Impacts

As with Alternatives 1 and 2, there would be minor short-term air quality impacts associated with the construction. These impacts would be primarily caused by exhaust emissions from construction equipment and fugitive dust emissions from earthmoving activities. A summary of estimated emissions from construction equipment are presented in Table 4.7.1 above. As shown, emissions during construction of Alternative 1 would be well below the general conformity *de minimis* thresholds (50 tons/year VOCs, 100 tons/year NO_x, and 100 tons/year PM_{2.5}). Construction emissions from each of the three action alternatives

are expected to be generally equivalent due to the similar size of the site to be developed under each alternative and similar size and types of buildings proposed. The differences in design among the three action alternatives would not result in a substantial difference in the amount of emissions released during site preparation activities. Thus, the short-term construction air quality impact of Alternative 3 would be minor.

Operational Impacts

As with Alternatives 1 and 2, the main types of long-term emissions sources associated with the operation and use of the Project Area under Alternative 3 would be motor vehicle trips associated with the residential, office, retail, and cultural facilities development; emissions from natural gas usage in buildings associated primarily with space and water heating; emissions associated with the offsite generation of electricity used; and emissions from miscellaneous activities on the property (USPP aviation facility).

Motor Vehicles

Motor vehicle trips associated with land transfer and redevelopment of Poplar Point would be a substantial source of total project-related emissions under Alternative 3. Many of the motor vehicle trips associated with the redevelopment of Poplar Point may be redirected trips from elsewhere in the Washington, DC metro area; however, for the purposes of this analysis, all of the trips are assumed to be new trips. Total motor vehicle trips associated with Alternative 3 include trips generated by the Poplar Point development, the WMATA garage, and the Howard Road parcels. Table 4.7.14 shows total vehicular trips for Alternative 3 at project buildout (2035) and at the completion of Phase 1 (2015).

Table 4.7.14 Alternative 3: Trip Generation

Land Use	Vehicular Trips for Poplar Point Development	Vehicular Trips for WMATA and Howard Road Parcels	Total Vehicular Trips (Buildout 2035)	Total Vehicular Trips (Phase 1 - 2015)
Residential	6,767	2,276	9,043	1,809
Office	3,885	2,005	5,890	1,178
Retail	3,316	1,158	4,474	895
Museum	3,698	--	3,698	740
TOTAL	17,666	5,439	23,105	4,621

Source: Gorove/Slade, 2010

Alternative 3 would generate fewer vehicle trips than Alternative 1. Emission summaries for motor vehicle trips for Phase 1 (2015) and project buildout (2035) for Alternative 3 are presented in Table 4.7.15.

Table 4.7.15 Alternative 3: Emission Summary for Motor Vehicles.

Phase	Estimated Total Emissions (tons)						
	VOC	CO	NO_x	SO₂	PM_{2.5}	PM₁₀	CO₂
Phase 1 (2015)	19.4	331.7	18.8	0.3	0.4	0.9	16,133
Buildout (2035)	96.9	1658.1	94.2	1.3	2.1	4.6	80,648

Emissions from Natural Gas Usage

Natural gas would be used for space heating and water heating in buildings within the Poplar Point development area. Emissions from natural gas usage were based on building square footage estimates for Alternative 3 and standard benchmarks for natural gas usage per total floor area for comparable structures in Baltimore, Maryland (DOE, 2010). Building square footage estimates for Alternative 3 are presented in Table 4.7.16 below. A summary of emissions is presented in Table 4.7.17.

Table 4.7.16 Alternative 3: Building Square Footage Estimates

Building Type	Benchmark Model Used	2015 (2035)
Residential	Midrise Apartment	941,360 (4,706,800)
Retail	Strip Mall	52,000 (260,000)
Office	Large Office	146,000 (730,000)
Cultural / Other	Large Hotel	92,000 (460,000)

Table 4.7.17 Alternative 3: Emission Summary for Natural Gas Usage

Phase	Total Natural Gas Used (MMSCF)	Estimated Total Emissions (tons)					
		VOC	CO	NOx	SO₂	PM₁₀	CO₂
Phase 1 (2015)	27	0.1	1.2	0.7	0.0	0.1	1,647
Buildout (2035)	137	0.4	5.8	3.4	0.0	0.5	8,233

Notes: MMSCF = Millions of standard cubic feet of natural gas.

In general, the action alternatives would have similar natural gas consumption rates, and therefore, similar emissions levels.

Emissions from Offsite Electricity Generation

The majority of electricity used in the Poplar Point development area would be generated offsite. Similar to natural gas usage, emissions from offsite electricity generation were based on building square footage estimates for Alternative 3 and standard benchmarks for electricity usage per total floor area for comparable structures in Baltimore, Maryland (DOE, 2010). Detailed emission calculations are presented in Table 4.7.18.

Table 4.7.18 Alternative 3: Emission Summary for Offsite Electricity Generation

Phase	Total Electricity Usage (MW-hr)	Estimated Total Emissions (tons)					
		VOC	CO	NO _x	SO ₂	PM ₁₀	CO ₂
Phase 1 (2015)	9,740	n/a	n/a	7.9	37.9	n/a	5,547
Buildout (2035)	48,698	n/a	n/a	39.7	189.7	n/a	27,734

Notes: MW-hr = megawatt-hours
n/a = not available

Emissions from Miscellaneous Activities

Similar to Alternatives 1 and 2, miscellaneous activities within the Project Area that would generate emissions of air pollutants include the USPP headquarters and aviation facility and the NPS NACE headquarters. Emissions from these activities have not been quantified because no modifications to these existing emission sources and no new sources of emissions have been identified.

Summary of Emissions and Impacts

A summary of emissions for Phase 1 from each of the main emission sources associated with Alternative 3 is presented in Table 4.7.19.

Table 4.7.19 Alternative 3: Estimated Emissions From Phase 1 (tons/year)

Source	VOC	CO	NO _x	SO ₂	PM _{2.5}	PM ₁₀	CO ₂ (short tons)	CO ₂ (metric tons)
Motor Vehicle Trips	19.4	331.7	18.8	0.3	0.4	0.9	16,133	14,633
Natural Gas Use	0.1	1.2	0.7	0.0	0.1	0.1	1,647	1,493
Offsite Electricity Generation	n/a	n/a	7.9	37.9	n/a	n/a	5,547	5,031
Miscellaneous Activities ¹	--	--	--	--	--	--	--	--
TOTAL	19.5	332.9	27.4	38.2	0.5	1.0	23,327	21,157

¹ Emissions from miscellaneous activities have not been quantified and no changes from baseline are expected.

General Conformity

Table 4.7.19 shows that expected annual emissions of VOC, NO_x, and PM_{2.5} for Phase 1 of Alternative 3 would be well below the general conformity *de minimis* levels of 50 tons per year for VOC, 100 tons per year for NO_x, and 100 tons per year for PM_{2.5}. As such, the initial phase of Alternative 3 would be in conformance with the SIP and all requirements of the General Conformity Regulations. Based on the analysis of the initial phase of the development, Alternative 3 would have a minor impact on local and regional air quality and is not expected to cause or contribute to an exceedance of any NAAQS or interfere with the attainment or maintenance of any NAAQS.

Global Climate Change

Construction and operation of the Alternative 3 would generate short- and long-term sources of GHGs. Construction emissions would be short-term in nature and would not persist following completion of construction. As with Alternatives 1 and 2, short-term impact to global climate change under Alternative 3 would be minor.

As shown in Table 4.7.19 above, the principal operational emission sources associated with the land transfer and redevelopment Poplar Point would be vehicle trips, natural gas usage in buildings for space and water heating, and emissions from offsite electric generating stations. Total emissions of greenhouse gases (primarily CO₂) would be 23,327 short tons/year for Alternatives 3, or 21,157 metric tons/year. Based on these emission calculations and assumptions, CO₂ emissions from Alternative 3 would not exceed the 25,000 metric tons/year indicator level as described in the CEQ draft guidance memo (CEQ, 2010).

Alternative 3 would also include a number of sustainability features designed to minimize energy and water consumption onsite and increase the overall efficiency of the site operations. Further, it is presumed that all new structures associated with the Poplar Point development would include standard building energy efficiency features. In addition, should any of the structures be constructed to Leadership in Energy and Environmental Design (LEED) standards, additional energy savings and a corresponding reduction in GHG emissions would be realized. No additional mitigation measures for GHG emissions are proposed. Given the expected energy efficient design and that calculated GHG emissions from the development are just under the CEQ indicator level, Alternative 3 would have a minor impact on global climate change.

Cumulative Impacts

Local air quality impacts from both construction and operation of Alternative are expected to be minor. To the extent that construction activities within the Project Area coincide with other construction projects in the vicinity, there could be minor localized cumulative impacts on air quality. Construction and operation of Alternative 3 would have a minor cumulative regional air quality impacts.

Conclusion

Construction and operational emissions from Alternative 3 would be just under the General Conformity *de minimis* thresholds and would not interfere with the region's progress towards attainment of the federal air quality standards. The short- and long-term adverse impacts would be minor. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for Alternative 1.

4.7.3 Hazardous Materials

4.7.3.1 Methodology and Assumptions

The following describes the methodology and assumptions used in determining the impacts the action alternatives would create relative to hazardous materials. This section details the methods used for evaluation, the geographic area which encompasses these resources, and the thresholds used for determining the magnitude of the impacts.

Analysis Methods

A general analysis was used to determine the potential impacts related to exposure to hazardous materials the action alternatives would have on the area of analysis. The analysis was conducted by reviewing relevant local and federal policies, and existing reports and analyses conducted for the Project Area. A major component of this analysis is the distinction between impacts resulting from construction activities (short-term) versus operational activities (long-term).

Federal agencies responsible for an action in a nonattainment area are required to determine that the action either conforms to the region's attainment plan or is exempt from conformity. Federal actions are exempt from conformity determinations when the total of all reasonably foreseeable direct and indirect emissions of nonattainment pollutants would either be: (1) less than their specified emission rate thresholds, known as *de minimis* limits, or (2) less than 10 percent of the area's annual emissions budget. The general conformity *de minimis* limits for ozone nonattainment areas inside an ozone transport region are 50 tons per year for VOC and 100 tons per year for nitrogen oxides (NO_x).

Assumptions

The geographic area used in the analysis to determine the impacts the action alternatives would have on hazardous materials includes the area of disturbance within the Project Area. Impacts within the Project Area include airborne particles (dust), dermal contact, incidental ingestion associated with surface and subsurface soils, and dermal contact and incidental ingestion associated with water resources. Soil disturbance during construction and operation within the Project Area has the potential to generate airborne particles that may contain hazardous materials. Thus, the analysis also considers potential impacts to adjacent properties.

Impact Thresholds

To adequately define the magnitude of each impact related to hazardous materials, the following thresholds were established. These thresholds describe the impacts of the action alternatives relative to the existing conditions. Positive impacts would improve public health and safety and reduce the risk of exposure to hazardous materials, while adverse impacts would have the potential to increase the risk of exposure or other incidents.

Negligible: Public health and safety would not be affected, or the effects would be below detection limits.

Minor: The impact or risk is slight, but detectable, and/or the alternative would result in small impacts on public health and safety in a localized area.

Moderate: The impact is readily apparent and/or would be easily detectable. The effects would be primarily local; however, there could be offsite impacts as well.

Major: There would be a substantial effects on public health and safety. The impacts may have local and regional consequences.

Duration

Short-term impacts include those that would occur during the development phases; long-term impacts include those that would persist after construction is complete.

4.7.3.2 No Action Alternative

Direct and Indirect Impacts

As discussed in Section 3.6.3, portions of the Project Area within Poplar Point contain hazardous materials, including metals, pesticides, organics, and PAHs in surface and subsurface soils. Groundwater samples taken from the site also contained concentrations of petroleum products in excess of local and federal standards. These contaminants are associated with the former use of Poplar Point for plan nurseries.

Under the No Action Alternative, redevelopment of Poplar Point as a mixed-use community would not occur. The Project Area would continue to operate as the southern extent of Anacostia Park. Routine maintenance activities would occur as part of the park operations. Further, the existing contamination within Poplar Point would be remediated by NPS as part of the No Action Alternative. Thus, there should be a negligible short-term adverse impact to human health during remediation activities. The long-term impact would be minor beneficial because the contamination would no longer persist.

Cumulative Impacts

Under the No Action Alternative, the Project Area would be remediated, and the potential for human health impacts would no longer exist. Because the contamination is localized within the Project Area, these impacts, when considered together with ongoing or planned projects in the study area, would not contribute to a short-term or long-term cumulative impact to human health.

Conclusion

Implementation of the No Action Alternative would not introduce any new impacts to the Project Area related to hazardous materials. Further, remediation of the Project Area would occur as part of the No Action Alternative. The long-term impact would be minor and beneficial. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

- Hazardous waste materials found onsite, including asbestos-containing materials (ACM) and lead-based paints, should be removed and contained by licensed contractors and trained personnel in a manner consistent with applicable handling regulations.
- Any asbestos-containing materials or lead-based paint should be collected, transported, and disposed of by a specially licensed contractor in accordance with the requirements of Title 40 CFR Volume 23 Part 763. Hazardous materials removed from the site should be shipped in a manner consistent with applicable transfer regulations to appropriate waste disposal facilities.
- NPS should maintain fences around contaminated areas until remediation is complete.

4.7.3.4 Alternative 1

Direct and Indirect Impacts

Construction-Related Impacts

Construction under Alternative 1 would involve substantial ground disturbing activities in the northwestern and southeastern portions of Poplar Point to construct a mix of residential, retail, and office uses. In addition, the central portion of Poplar Point would be set aside for park uses and recreation improvements would be implemented. The USPP headquarters and aviation facility would be relocated to the North Field and recreational improvements would be implemented in southern Anacostia Park. Therefore, Alternative 1 would involve substantial ground disturbing activities during the construction phase.

As discussed in Section 3.6.3, Poplar Point is known to contain hazardous materials, including metals, petroleum products, pesticides, and organics in the surface and subsurface soil and ground water associated with the previous use of Poplar Point as plant nurseries and other historic operations. No contamination is known to exist within other parts of the Project Area. Thus, ground disturbing activities within Poplar Point, particularly in the areas of the former Architect of the Capitol property and DC Lanham Tree Nursery property, would have the potential to expose construction workers to hazardous materials through direct contact with surface and subsurface soils and groundwater resources. In addition, construction could generate dust that would expose adjacent property owners to hazardous materials through inhalation of airborne particles containing pollutants. Therefore, without remediation of contamination, Alternative 1 could have a major short-term adverse impact to human health associated with hazardous materials. However, since the Project Area would be fully remediated prior to the commencement of construction activities, Alternative 1 would have a negligible short-term beneficial impact on human health.

Operational Impacts

Under Alternative 1, the Project Area would be developed with a mix of new residential, retail, office, and park uses. There would be continued operation of park uses in southern Anacostia Park and USPP headquarters and aviation facility, although these functions would be relocated to the North Field. Because

the existing contamination would be remediated prior to the start of construction of Alternative 1 there would be a long-term beneficial impact during operation.

Cumulative Impacts

Construction activities under Alternative 1 could have the potential to adversely impact human health through the disturbance of known contaminants. Because the contamination is located within the Project Area, when considered together with ongoing or planned projects in the study area, Alternative 1 would not contribute to a short-term or long-term cumulative impact to human health.

Conclusion

Because the Project Area would be remediated to meet local and federal standards, short-term adverse impacts would be negligible and long-term impacts would be beneficial. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for No Action Alternative.

4.7.3.5 Alternative 2

Direct and Indirect Impacts

Construction

All site contamination would be fully remediated to local and federal standards for human habitation prior to commencing construction under Alternative 2, and thus short-term impacts would be negligible. Construction under Action Alternative 2 would involve similar construction activities as Alternative 1. As part of Alternative 2, development would occur where the wetlands currently exist, necessitating the removal of the existing wetlands and the construction of new wetlands in the northwestern and northeastern portions of the project site near the Anacostia River. Alternative 2 would involve substantial ground disturbing activities during the construction phase—more ground disturbing activities than would occur as part of Alternative 1.

Operation

Similar to Alternative 1, the Project Area would be developed with a mix of new residential, retail, office, and park uses under Alternative 2. There would be continued operation of park uses in southern Anacostia Park and USPP headquarters and aviation facility, although these functions would be relocated to the North Field. Because the existing contamination would be remediated prior to the start of construction of Alternative 2 there would be a long-term beneficial impact during operation.

Cumulative Impacts

Similar to Alternative 1, the site would be remediated under Alternative 2 to meet local and federal standards for human habitation. As such, impacts would be negligible.

Conclusion

Without full remediation of the site, Alternative 2 could have major short-term adverse impacts to human health and a moderate long-term adverse impact. However, since the site would be remediated to meet local and federal standards for human habitation, short-term adverse impacts would be negligible and long-term positive impacts would be major. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for No Action Alternative.

4.7.3.6 Alternative 3

Direct and Indirect Impacts

Construction-Related Impacts

All site contamination would be fully remediated to local and federal standards for human habitation prior to commencing construction under Alternative 3, and thus short-term impacts would be negligible. Construction under Action Alternative 3 would involve similar construction activities as Alternatives 1 and 2. As part of Alternative 3, new residential, retail, and office development would be concentrated in the eastern portion of the site, where the distance between the Anacostia neighborhood and the waterfront is the shortest. The entire western portion of the project site would be reserved for open space and recreational uses. Alternative 3 would preserve the healthiest wetlands and create new wetlands to offset the wetlands lost by development.

Operational Impacts

Similar to Alternatives 1 and 2, the Project Area would be developed with a mix of new residential, retail, office, and park uses under Alternative 3. There would be continued operation of park uses in southern Anacostia Park and USPP headquarters and aviation facility, although these functions would be relocated to the North Field. Because the existing contamination would be remediated prior to the start of construction of Alternative 3 there would be a long-term beneficial impact during operation.

Cumulative Impacts

Similar to Alternatives 2 and 3, the site would be remediated under Alternative 3 to meet local and federal standards for human habitation. As such, impacts would be negligible.

Conclusion

Without full remediation, Alternative 3 could have major short-term adverse impacts to human health and moderate long-term adverse impacts. However, since the site would be remediated, short-term impacts would be negligible and long-term positive impacts would be major. There would be no irreversible environmental impacts. This alternative would not result in unacceptable impacts to or impairment of a key park resource.

Mitigation

Same as for No Action Alternative.

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