south capitol street

record of decision

and

supplemental final environmental impact statement/section 4(f) evaluation

August 2015

District Department of Transportation

Introduction

The District Department of Transportation (DDOT), in cooperation with the Federal Highway Administration (FHWA), is proposing the South Capitol Street Project to increase pedestrian and vehicular safety, improve multi-modal transportation options, increase community accessibility, and support economic development along the South Capitol Street corridor on both sides of the Anacostia River in the District of Columbia. The FHWA is the lead federal agency responsible for compliance with the National Environmental Policy Act (NEPA). DDOT is the local lead agency for the proposed South Capitol Street Project. Cooperating agencies are the District Department of the Environment, the National Capitol Planning Commission, the National Park Service (NPS), the U.S. Army Corps of Engineers (USACE), the U.S. Coast Guard (USCG), and the U.S. Navy. Participating Agencies are the Architect of the Capitol, the National Oceanic and Atmospheric Administration, the National Marine Fisheries Service, and the U.S. Department of the Interior, Fish and Wildlife Service.

What is this document?

As allowed under Section 1319(b) of the Moving Ahead for Progress in the 21st Century Act (MAP-21), this document is a combined Record of Decision (ROD) and *Supplemental Final Environmental Impact Statement / Section 4(f) Evaluation* (Supplemental FEIS) for the South Capitol Street Project. The Supplemental FEIS updates and augments the *Final Environmental Impact Statement / Section 4(f) Evaluation* (FEIS) that was prepared for this Project, which was released for public comment in March 2011. It describes the purpose of the Supplemental FEIS in the NEPA process, and presents changes relative to the Preferred Alternative, environmental conditions and potential impacts since the FEIS. This Supplemental FEIS contains all necessary supplemental information regarding design changes made to the Preferred Alternative in the FEIS. In addition to the FEIS, FHWA decision-making was based on information contained in the *Supplemental Draft Environmental Impact Statement / Section 4(f) Evaluation* (Supplemental DEIS) published in the December 12, 2014 issue of the Federal Register, comments received on the Supplemental DEIS and the Supplemental FEIS. The ROD presents the basis for the decision to identify the Revised Preferred Alternative as the Selected Alternative and summarizes the environmental commitments that will be incorporated in the project during and after construction.

What has already happened?

On April 26, 2005, the FHWA issued a Notice of Intent (NOI) to prepare an Environmental Impact Statement for the project. On February 15, 2008, the FHWA issued a Notice of Availability (NOA) for the *South Capitol Street Draft Environmental Impact Statement /Section 4(f) Evaluation* (DEIS). The DEIS examined the environmental consequences of a no build alternative and two build alternatives (Build Alternative 1 and Build Alternative 2). DDOT held public hearings on March 4 and 5, 2008 to obtain public comments on the DEIS.

The FHWA released the FEIS for public comment on March 22, 2011. The FEIS documented the analysis of a modified version of Build Alternative 2, identified as the FEIS Preferred Alternative, chosen in response to public and agency comments on the DEIS. DDOT conducted public hearings on April 26 and 28, 2011 to obtain comments on the Preferred Alternative and findings of the FEIS.

After publication of the FEIS there were two major changes proposed in the design of the FEIS Preferred Alternative. The first major change was a determination by DDOT that the navigational needs on the Anacostia River could be met with a significantly less expensive fixed-span bridge in lieu of the moveable span bridge. In the second instance, DDOT decided to change the alignment of the proposed new Frederick Douglass Memorial Bridge to a location immediately south of and parallel to the existing bridge. This alignment change would not require right-of-way from the Joint Base Anacostia Bolling.

Due to these design changes, a new alternative was developed. This new alternative was named the Revised Preferred Alternative since the FEIS identified a Preferred Alternative, and the design changes noted above are modifications to the FEIS Preferred Alternative. The design changes noted above were determined to have "significant" environmental impacts not considered in the FEIS; therefore, FHWA determined a supplement to the FEIS was required in accordance with its implementing NEPA regulations. The Supplemental DEIS was published in the December 19, 2014 edition of the *Federal Register* and circulated for agency and public review.

What is included in this document?

The ROD provides the basis for the FHWA decision to select the environmentally preferred Revised Preferred Alternative as the Selected Alternative for the South Capitol Street Project. In addition, it summarizes the results of compliance with Section 106 of the National Historic Preservation Act and documents Section 4(f) approvals in accordance with 23 CFR 774. Of equal importance, with regards to the criteria for mitigation as required by the Council of Environmental Quality, the ROD sets forth the environmental commitments that are intended to avoid, minimize, rectify or reduce the potential impacts of the Project as described in the Supplemental FEIS, or compensate for the impacts.

The Supplemental FEIS includes 13 chapters.

Chapter 1 – Purpose and Need introduces the Project and presents a summary of the purpose and need for the project.

Chapter 2 – Alternatives provides background information on the alternatives previously considered but rejected for the Project, and a description of the Revised Preferred Alternative.

Chapter 3 – Affected Environment examines the same environmental resources or topics that were described in the FEIS and details which of these resources did or did not experience a substantive change in conditions. See illustration on the following page.

Chapter 4 – Environmental Consequences discloses the potential impacts of the Revised Preferred Alternative. Similar to Chapter 3, the same environmental resources or topics that were included in the FEIS were examined, but only new information or circumstances relevant to the Revised Preferred Alternative are examined in detail. Impacts that would occur regardless of either the FEIS Preferred Alternative or the Revised Preferred alternative are not examined in depth. See illustration.

Chapter 5 – Section 4(f) Evaluation provides documentation necessary to support determinations of project compliance with Section 4(f) of the U.S. Department of Transportation Act and its implementing regulations.

Chapters 6 through 12 provide the list of preparers; the supplemental documents' distribution list; a history of the activities meant to solicit public and agency comments and coordination; a glossary; list of acronyms used in the document; an index; and references.

Chapter 13 – Index of Technical Reports includes a synopsis of the nine technical reports prepared to support the supplemental documents (which differ from the 21 technical reports prepared for the DEIS and FEIS).

In addition, the Supplemental FEIS includes all comments received on the Supplemental DEIS, and responses to these comments.

What happens next?

The FHWA intends to issue a Statute of Limitations (SOL) notice in the Federal Register indicating that one or more federal agencies have taken final action that grant permits, licenses, or approvals for the Project. This SOL notice establishes that claims seeking judicial review of those federal agency actions will be barred unless such claims are filed on or before 150 days after publication of the notice in the *Federal Register*. With the issuance of the ROD, DDOT will seek to obtain the

AFFECTED ENVIRONMENT

No Change for:

Air Quality
Economy and Employment
Geology, Topography, and Soils
Noise
Water Quality
Wildlife and Habitat
Visual Quality

Change for:

Community Cohesion and Facilities
Cultural Resources
Environmental Justice
Floodplains
Hazardous Materials
Land Use
Pedestrian and Bicycle Facilities
Threatened and Endangered Species
Traffic and Transportation
Wetlands

ENVIRONMENTAL CONSEQUENCES

No Change for:

Air Quality
Community Cohesion and Facilities
Economy and Employment
Energy
Floodplains
Hazardous Materials
Land Use
Traffic and Transportation-Traffic Safety

Change for:

Cultural Resources
Environmental Justice
Geology, Topography and Soils
Noise
Pedestrian and Bicycle Facilities
Section 4(f)
Traffic and Transportation
Visual Quality
Water Quality
Wetlands
Wildlife and Habitats

required permitting approvals from other federal agencies, such as the USACE, USCG and NPS. These agencies may issue their own RODs in compliance with NEPA or they may adopt the FHWA ROD.

record of decision

south capitol street project

Decision

This Record of Decision (ROD) sets forth the basis for the decision regarding the Selected Alternative for the South Capitol Street Project. The Selected Alternative is the Revised Preferred Alternative as described in the *Supplemental Final Environmental Impact Statement/Section 4(f) Evaluation* (Supplemental FEIS). It includes the reconstruction of South Capitol Street from Firth Sterling Avenue SE to D Street and Suitland Parkway from Martin Luther King, Jr. Avenue SE to South Capitol Street; replacement of the Frederick Douglass Memorial Bridge; and streetscape improvements to New Jersey Ave SE. In addition, South Capitol Street will be reconfigured into an urban boulevard providing a grand scenic gateway to the nation's capital.

As documented in the Supplemental FEIS, the Selected Alternative meets the purpose and need for the Project, which focuses on improving safety, multimodal mobility, accessibility in the corridor, and the support of economic development. All practicable means to avoid and minimize environmental harm have been adopted.

The Selected Alternative was developed and analyzed in the *Supplemental Final Environmental Impact Statement/Section 4(f) Evaluation* and selected for the Project because it further reduced the risks, impacts, right-of-way requirements and costs associated with the Preferred Alternative identified in the *Final Environmental Impact Statement/Section 4(f) Evaluation* (herein referred to as the FEIS Preferred Alternative) previously approved in March 2011.

The estimated cost of the Selected Alternative is $1.033 billion.

In consideration of the South Capitol Street undertaking, the Federal Highway Administration (FHWA) in partnership with the District Department of Transportation

(DDOT) and other federal agencies studied and evaluated a range of alternatives consistent with earlier planning efforts as required by the provisions of Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and the Moving Ahead for Progress in the 21st Century Act (MAP-21), which replaced SAFETEA-LU on July 6, 2012. FHWA concurs with the alternative selected by DDOT.

This decision is based upon full consideration of information contained in the *Draft Environmental Impact Statement/Section 4(f) Evaluation* (DEIS), which was approved in February 2008; the *Final Environmental Impact Statement/Section 4(f) Evaluation* (FEIS), which was approved in March 2011; the *Supplemental Draft Environmental Impact Statement/Section 4(f) Evaluation* (Supplemental DEIS), which was approved in December 2014; and the Supplemental FEIS, which was approved in August 2015. The decision was also based on public hearings held on March 4 and 5, 2008 and January 22, 2015; public meetings held on April 26 and 28, 2011, July 30, 2013, May 15, 2014; public and agency comments; other alternatives considered; and environmental consequences. The environmental review process for this action is in full compliance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations, and all other applicable Federal regulations.

Alternatives Considered for the Project

A no-build and build alternatives for the Project were described and analyzed in the DEIS, FEIS, Supplemental DEIS, and Supplemental FEIS. The build alternatives include Build Alternatives 1 and 2, which were included in both the DEIS and FEIS; the Preferred Alternative identified in the FEIS (FEIS Preferred Alternative), which was a modification of Build Alternative 2; and the Revised Preferred Alternative, which was the only build alternative in the Supplemental DEIS and Supplemental FEIS.

All of the build alternatives would provide new and consistent streetscape features and pedestrian and bicycle facilities from Firth Sterling Avenue SE to D Street SE. Additionally, all of the build alternatives provide streetscape features along Suitland Parkway and New Jersey Avenue SE, including new or modified connections between major roadways.

A central part of the Project, and the build alternatives, is the replacement of the existing Frederick Douglass Memorial Bridge on a new alignment at a location south of the current alignment. The new bridge would visually and aesthetically support South Capitol Street as a grand urban boulevard by improving the vista toward the U.S. Capitol, Washington Monument, and Monumental Core from the Anacostia River.

The type of new bridge considered for the Project is an important difference among the build alternatives. Build Alternatives 1 and 2 and the FEIS Preferred Alternative would maintain the type of bridge with an opening span (i.e., movable bridge) that preserves the existing navigation channel of the Anacostia River. Four movable bridge types identified in the *Frederick Douglass Memorial Bridge Alignment Study Report* (DDOT 2007) were

evaluated in terms of their compatibility with the FEIS Preferred Alternative and Build Alternatives 1 and 2:

- Cable-Stayed Swing Bridge
- Stayed Bascule Bridge
- Arched Bascule Bridge
- Retractile Bridge

Following release of the FEIS, new information about current and planned navigation along the Anacostia River, including the navigation requirements of the U.S. Navy, led to the decision by DDOT, coordinated with the U.S. Coast Guard, to construct the new bridge as a fixed span structure under the Revised Preferred Alternative, which would result in substantial cost savings.

It was also determined that 99.8 percent of current and projected vessel traffic on the Anacostia River could be accommodated by a fixed bridge with 42 feet of vertical clearance. Records indicate that the swing span of the existing bridge was opened 21 times over a ten-year period from 2002 to 2012. Since 2007, the span was opened four times for navigation purposes. In addition, the construction of a fixed bridge would not preclude the relocation of the Display Ship Barry from its berth at the Navy Yard.

DDOT also decided to change the alignment of the new bridge to avoid the need to obtain right-of-way within the northernmost portion of the Joint Base Anacostia-Bolling (JBAB). Acquiring the needed right-of-way from JBAB would require an Act of Congress with no guarantee that the property could be obtained. The new bridge alignment for the Revised Preferred Alternative does not require right-of-way from JBAB.

No Build Alternative

The No Build Alternative would not involve any new construction in the corridor as a result of the Project. However, other planned and committed projects located within or in the vicinity of the Project Area would move forward as they were planned. In addition, planned maintenance activities would be conducted to the existing infrastructure, as necessary.

Existing structural, geometric and operational deficiencies of the existing bridge would remain in place, and would not be corrected. The anticipated increase in traffic throughout the Project Area as a result of development of other projects in the corridor would adversely affect overall congestion and traffic safety in the Project Area.

Therefore, the No Build Alternative would not increase safety, improve multimodal mobility or accessibility, or support economic development. The No Build Alternative would also not meet the purpose and need as described in the EIS. The Project purpose and need remained the same in the Supplemental EIS.

Selected Alternative: Revised Preferred Alternative in the Supplemental FEIS

The Selected Alternative is the Revised Preferred Alternative identified in the Supplemental DEIS and the Supplemental FEIS. This is also the environmentally preferable alternative and incorporates all practicable means to avoid or minimize environmental harm and addresses the purpose and need for the Project.

The design elements of the Selected Alternative are as follows:

- South Capitol Street will be rebuilt as a six-lane boulevard with a landscaped median west of the Anacostia River. This will include reconstruction of the at-grade intersections at I, N, O, P, K, and L Streets, and the conversion of the existing grade-separated intersection at South Capitol Street / M Street into an at-grade intersection. Streetscape improvements will be included along the section of South Capitol Street north of I-695.

- Streetscape improvements along New Jersey Avenue SE between M Street SE and D Street SE.

- The I-695 / South Capitol Street interchange will be reconstructed. The existing ramp from northbound South Capitol Street to eastbound I-695 will be converted to an at-grade intersection. The eastbound I-695 ramp to southbound South Capitol Street will be converted to an urban interchange ramp with South Capitol Street.

- The alignment for the new Frederick Douglass Memorial Bridge was shifted parallel to and directly adjacent to the south side or downstream from the existing bridge superstructure.

- The alignment for the new Frederick Douglass Memorial Bridge will require demolition of the northern structure of two piers and associated mooring and breasting structures that are located on the west bank of the Anacostia River to the south of the existing bridge. These piers are inactive remnants of an earlier fuel storage facility and are no longer in use.

- Traffic ovals of approximately 250 feet by 555 feet in size will be placed at the both the western and eastern approaches to the new bridge. Both ovals will be oriented in the same direction. Construction of the west oval will require acquisition of additional right-of-way. The east traffic oval will be located entirely within the existing DDOT right-of-way. The west oval will connect South Capitol Street, Potomac Avenue and Q Street SW. The east oval will connect with the realigned South Capitol Street and Suitland Parkway, and provide a direct roadway connection with the Poplar Point section of Anacostia Park, including its shared-use paths.

- The existing Suitland Parkway/I-295 interchange will be converted into a modified diamond with a two-lane loop ramp for I-295 southbound at Suitland Parkway, and a new traffic signal at the merge point with Suitland Parkway. Ramp B (southbound I-295

to westbound Suitland Parkway) would eliminate the existing condition of southbound I-295 motorists using Howard Road SE to access northbound South Capitol Street.

- A section of the I-295 Bridge over Firth Sterling Avenue SE and an inactive railroad right-of-way will be replaced. In addition, the I-295 Bridge over Howard Road SE will be widened.

- The existing pedestrian over-pass bridge over Suitland Parkway between Barry Farms and Stanton Road SE will be reconstructed. In addition, a new pedestrian/bike trail will be provided along Suitland Parkway up to the existing trailhead at Stanton Road SE.

- The Martin Luther King, Jr. Avenue SE overpass at Suitland Parkway will be converted into an urban diamond interchange. This will include the widening of Martin Luther King, Jr. Avenue SE at Suitland Parkway to accommodate a new multi-use trail. Construction of the new interchange will eliminate the existing Suitland Parkway ramps with Sheridan Road SE and Stanton Road SE.

The fixed span of the new bridge will provide a minimum vertical clearance of 42 feet below the structure and a horizontal clearance of 150 feet, which will accommodate 99.8 percent of current and projected future vessel traffic on the Anacostia River. The new bridge will support six travel lanes (three lanes in each direction), and bicycle/pedestrian paths on both sides of the bridge. The visual appearance of the new bridge will in part be determined through a visual quality management process incorporated as part of the overall contractor selection process.

Implementation of the Selected Alternative would be organized by geographic segments (numbered 1 through 5) for construction planning purposes. At a total estimated cost of $1.033 billion, the entire Project would not be constructed under a single construction contract. Each segment has logical termini and independent utility. The locations of the segments are as follows.

- Segment 1: Areas immediately west and east of the Anacostia River (includes a new bridge and traffic ovals on both sides of the river).

- Segment 2: I-295 and the area where Suitland Parkway connects with South Capitol Street.

- Segment 3: Suitland Parkway east of Firth Sterling Avenue.

- Segment 4: South Capitol Street from N Street to D Street.

- Segment 5: New Jersey Avenue SE between M Street SE and D Street SE.

See Section 2.3 of the Supplemental FEIS for further information on the description of the Selected Alternative.

Section 106 Considerations

Section 106 Properties

The previous Section 106 determination for the FEIS Preferred Alternative was updated due to effects of the Selected Alternative. Based on the adverse effects of the Selected Alternative's impacts to the L'Enfant Plan of the City of Washington, DC, the Section 106 "adverse effect" determination remains unchanged. The District of Columbia State Historic Preservation Office (DC SHPO) concurred with the updated "adverse effect" determination; however, the undertaking, the measures to minimize harm and the mitigation incorporated into the Project meet the requirements of a "net benefit" to this resource (see Section 4(f) Considerations below). The Selected Alternative will not adversely affect any other historic property within the Area of Potential Effects (APE) that was developed for the Selected Alternative, including Suitland Parkway and Anacostia Park.

Consultation and Resolution of Adverse Effect

Consultation was conducted with the DC SHPO, the Advisory Council on Historic Preservation (ACHP), the National Capital Planning Commission (NCPC), the Commission on Fine Arts (CFA), the National Park Service (NPS), the U.S. Navy, and other interested organizations and stakeholders, such as the Capitol Hill Restoration Society and Friends of Garfield Park. This consultation covered the identification of historic properties in the APE, the assessment of effects, proposed measures to minimize harm, and mitigation measures to be incorporated into the Project to preserve the function and values of the affected Section 106 resources.

Subsequently, an Amended and Restated Memorandum of Agreement (MOA) was signed by all parties, except NCPC who withdrew their role as signatory. The Amended and Restated MOA also specified mitigation commitments, the process to be undertaken for review of preliminary and final design plans, and additional coordination requirements for subsequent Project phases. A copy of the Amended and Restated MOA is included as Attachment A of this ROD.

Section 4(f) Considerations

Section 4(f) Properties

The Selected Alternative will require use of land from three Section 4(f) properties or resources: (1) L'Enfant Plan of the City of Washington, DC; (2) Suitland Parkway; and (3) Anacostia Park. All three properties qualify as Section 4(f) resources because they are listed or eligible for listing on the National Register of Historic Places (NRHP). Anacostia Park also qualifies as a Section 4(f) resource as a publicly-owned, public park or recreational resource.

No Prudent and Feasible Avoidance Alternatives

There is no feasible and prudent avoidance alternative to the use of land from the affected Section 4(f) properties. The No Build Alternative avoids use of all Section 4(f) resources but would not meet the Project's purpose and need. Avoidance of the corridor was also considered, but was rejected because it would not meet the Project's purpose and need.

De Minimis Impact Findings

Subsequent to completion of the Section 106 process, a finding was made that the Selected Alternative will not have an adverse effect on Suitland Parkway. As noted above, the DC SHPO concurred with this determination. Therefore, a determination was made that the use of Suitland Parkway would be a *de minimis* impact with regards to Section 4(f) compliance.

The Selected Alternative will require construction within Anacostia Park to re-construct the public access road and pathways into the park's Poplar Point section due to the proposed implementation of the new east traffic oval. An existing one-way access road in the park will be reconstructed as a two-way main access road with a direct connection to the northeast leg of the east traffic oval. This access road will include shared use paths on both sides of the roadway. Other roadways in the Poplar Point section of the park that will no longer be needed will be removed from the park, leading to a net reduction in impervious roadways. These elements of the Selected Alternative will not have an adverse effect on Anacostia Park in accordance with Section 106. Therefore, these elements will not affect the features, attributes, or activities qualifying the park as a Section 4(f) resource. The NPS agreed with this assessment. As a result of NPS concurrence and the Section 106 "no adverse effect" determination, a finding was made that the use of Anacostia Park would be a *de minimis* impact with regards to Section 4(f) compliance.

Net Benefit Finding

The DC SHPO, the official with jurisdiction over the L'Enfant Plan, concurred in the finding of the *Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property* (Net Benefit Agreement). A Net Benefit Agreement was signed for the FEIS Preferred Alternative. The updated Section 4(f) Net Benefit Agreement is included as Attachment B to this ROD.

Planning to Minimize Harm

As final design progresses, DDOT shall make efforts to reduce the size of areas needed for construction as is reasonably practicable.

Mitigation Measures and Benefits

Environmental commitments and mitigation measures associated with the impacts to the L'Enfant Plan of the City of Washington, DC are documented in the Amended and Restated

MOA prepared pursuant to Section 106 (see Attachment A) and the Net Benefit Agreement prepared pursuant to Section 4(f) (see Attachment B). In addition, a visual quality management process will be used for the Project (see Attachment C, Environmental Commitments).

Applicability Determination

The Selected Alternative's Section 4(f) use of the L'Enfant Plan of the City of Washington, DC meets the applicability criteria for a Net Benefit Evaluation for the following reasons:

- The Selected Alternative will include all appropriate measures to minimize harm and subsequent mitigation necessary to preserve and enhance those features and values of the L'Enfant Plan that qualified this property for Section 4(f) protection.
- The Selected Alternative will not alter the characteristics that qualify the L'Enfant Plan of the City of Washington, DC for the NRHP.
- Coordination with the DC SHPO, the official with jurisdiction, was conducted to finalize the Net Benefit Evaluation for the L'Enfant Plan. This coordination resulted in an updated Net Benefit Agreement, which was signed by DC SHPO and DDOT.

Based on this evaluation, the Selected Alternative will have a Net Benefit on the L'Enfant Plan of the City of Washington, DC.

Section 4(f) Conclusion

The Selected Alternative will require use of land from three Section 4(f) resources or properties: (1) L'Enfant Plan of the City of Washington, DC; (2) Suitland Parkway; and (3) Anacostia Park. For the L'Enfant Plan of the City of Washington, DC, the *Nationwide Programmatic Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property* (2005) was used. For Suitland Parkway and Anacostia Park, *de minimis* impact determinations were made. None of the Section 4(f) uses of the Selected Alternative require an individual Section 4(f) Evaluation. Based on the considerations in the Supplemental FEIS, there is no feasible and prudent avoidance alternative to the use of Section 4(f) resources, and the Selected Alternative includes all possible planning to minimize harm to these resources.

Environmental Commitments

Attachment C to this Record of Decision provides the final environmental commitments. These environmental commitments are mitigation measures that avoid the impact altogether by not taking a certain action or parts of an action; minimize impacts by limiting the degree or magnitude of the action and its implementation; rectify the impact by repairing, rehabilitating, or restoring the affected environment; reduce or eliminating the impact over time by preservation and maintenance operations during the life of the action;

or compensate for the impact by replacing or providing substitute resources or environments.

Comments on the Supplemental Draft Environmental Impact Statement/Section 4(f) Evaluation

Comments on the Supplemental DEIS and responses to each are included in Appendix N of the Supplemental FEIS.

Statute of Limitations Notice

A Statute of Limitations notice shall be provided in the *Federal Register*, pursuant to 23 U.S.C. Section 139(l)(1), indicating that one or more Federal agencies have taken final action that grant permits, licenses, or approvals for this transportation Project. This Statute of Limitations notice establishes that claims seeking judicial review of those Federal agency actions will be barred unless such claims are filed on or before 150 days after publication of the notice in the Federal Register.

DDOT will also make the Statute of Limitations notice available on the Project website.

Conclusion

Based upon the information presented in the FEIS, Supplemental FEIS and supporting technical documents, the associated Project record, and input received from the public and interested District and federal agencies, the decision is to approve the South Capitol Street Project in the District of Columbia. This decision selects the Revised Preferred Alternative as described in the Supplemental FEIS and in this document. The Selected Alternative meets the purpose and need for the Project while minimizing the environmental impacts that will result from construction and operation of the Project.

8/13/15
Date

Joseph C. Lawson
For the Federal Highway Administration

Attachments

The following documents are attached to, and are part of, this Record of Decision:

Attachment A:	Amended and Restated Section 106 Memorandum of Agreement among the Federal Highway Administration, the District of Columbia State Historic Preservation Officer, the Advisory Council on Historic Preservation and the District Department of Transportation regarding the South Capitol Street Project within the District of Columbia
Attachment B:	Updated Section 4(f) Net Benefit Agreement
Attachment C:	Environmental Commitments

District Department of Transportation

attachment A

amended and restated memorandum of agreement

AMENDED AND RESTATED
MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICER,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION,
REGARDING
THE SOUTH CAPITOL STREET PROJECT WITHIN
THE DISTRICT OF COLUMBIA

This Amended and Restated Memorandum of Agreement (Amended MOA) is entered into by and among the Federal Highway Administration (FHWA), the District of Columbia State Historic Preservation Officer (DC SHPO), the Advisory Council on Historic Preservation (ACHP) and the District Department of Transportation (DDOT) as an invited signatory (individually referred to herein as "Signatory" and collectively as "Signatories").

WHEREAS, the Signatories executed a Memorandum of Agreement (MOA) effective as of December 13, 2011, to address the effects of the South Capitol Street Project's Preferred Alternative; and

WHEREAS, the South Capitol Street Project's Preferred Alternative presented in the Final Environmental Impact Statement (FEIS) has been changed and a Revised Preferred Alternative (Undertaking) has been presented in the South Capitol Street Supplemental Environmental Impact Statement (Supplemental EIS); and

WHEREAS, the Revised Preferred Alternative introduces elements and alters project plans, requiring Section 106 reevaluations and results in the need for an Amended MOA, which is being executed in accordance with Stipulation VIII of the 2011 MOA and 36 CFR 800.6 (b)(2); and

WHEREAS, DDOT, in conjunction with FHWA, proposes to make improvements to the Suitland Parkway Interchange with I-295 and the South Capitol Street Interchange with I-395 and is, therefore, responsible for further compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 U.S.C. 300101), and its implementing regulations provided in 36 CFR Part 800; and

WHEREAS, due to project changes, the National Capital Planning Commission (NCPC) remains a Consulting Party, but has documented in writing (Attachment 1) that it will no longer be a Signatory to this Amended MOA because it no longer has a federal action which meets the definition of Undertaking as defined under 36 CFR 800.16(y); and

WHEREAS, the purpose of this Amended MOA is to amend and restate in its entirety the MOA that was executed in December 2011; and

WHEREAS, the Undertaking, proposed in the Supplemental EIS and associated Section 106 studies that are the subject of this Amended MOA, will be the replacement of the Frederick Douglass Memorial Bridge with a new fixed bridge parallel to the existing bridge, and updates to the South Capitol Street Corridor converting it into an urban boulevard,

which will provide a gateway to the US Capitol and Monumental Core. The Undertaking also will include elements that accommodate existing and potential transit facilities and provide enhanced pedestrian and bicycle facilities, as well as streetscape features (Attachment 2); and

WHEREAS, FHWA administers the Federal-Aid Highway Program in the District of Columbia authorized (23 U.S.C. 101 et seq.) through Federal-aid Agreement with DDOT as project sponsor (49 CFR 1.48) and, as such, DDOT is responsible for executing the proposed Undertaking in accordance with the terms of this Amended MOA; and

WHEREAS, the National Park Service (NPS) is the federal agency with jurisdiction over Anacostia Park and the Anacostia River riverbed within the project area and has participated as a Consulting Party in the development of this Amended MOA; and

WHEREAS, NPS will conduct Section 106 review and compliance for proposed modifications to roadways within Anacostia Park, which are unlikely to result in "adverse effects," and for NPS permits (Special Use Permits) required to complete work as part of the South Capitol Street Project; and

WHEREAS, DDOT has jurisdiction over the Suitland Parkway in the District of Columbia; and

WHEREAS, the U.S. Army Corps of Engineers (USACE) and the U.S. Coast Guard (USCG) permit approvals will be necessary to complete the Undertaking, and these agencies have designated FHWA the lead federal agency to fulfill their collective responsibilities under Section 106 in accordance with 36 CFR 800.2(a)(2); and

WHEREAS, FHWA has consulted with DC SHPO pursuant to Section 106 of the NHPA; and

WHERAS, DC SHPO is a Signatory to this Amended MOA, in accordance with 36 CFR Part 800.6(c)(1)(ii); and

WHEREAS, the revised Area of Potential Effects (APE) for the Undertaking has been determined by FHWA in accordance with 36 CFR 800.4(a)(1) and in consultation with DC SHPO and Consulting Parties and has been updated for the Supplemental EIS; the revised APE is included in Attachment 3 of this Amended MOA; and

WHEREAS, it has been determined that there are twenty-three built historic properties within the revised APE, as listed in Attachment 4 of this Amended MOA; and

WHEREAS, it has been determined that no known archaeological sites are present within the area of anticipated direct effects (Limits of Disturbance [LOD]) within the revised APE; and

WHEREAS, the NPS, NCPC, USACE, USCG, U.S. Navy, Capitol Hill Restoration Society, Heritage Preservation, Southwest Neighborhood Assembly, Washington Metropolitan Area Transit Authority, Georgetown University Law Center, Commission of Fine Arts (CFA), Advisory Neighborhood Commission 6D, and Friends of Garfield Park have participated in the project as Consulting Parties; and

WHEREAS, FHWA has determined that the Undertaking will have an "adverse effect" on the Plan of the City of Washington, DC (L'Enfant Plan), through the introduction of a traffic oval

that will interrupt the linear integrity of Potomac Avenue, one of the original diagonal roadways in the L'Enfant Plan, at its intersection with South Capitol Street; and

WHEREAS, in accordance with 36 CFR 800.6(a)(1), FHWA notified the ACHP of the adverse effect determination, and the ACHP has chosen to participate in the consultation pursuant to 36 CFR 800.6(a)(I)(iii) and is a Signatory to this Amended MOA; and

WHEREAS, the Undertaking will no longer have an "adverse effect" on the Suitland Parkway, a property listed in the National Register of Historic Places (NRHP), because the Undertaking will no longer require the removal and replacement of the Martin Luther King, Jr. Avenue overpass, which is a contributing element to the Suitland Parkway; and

WHEREAS, FHWA has determined that the Undertaking will have no adverse effect on other historic properties within the revised APE, which are included in Attachment 3 and Attachment 4; and

WHEREAS, DDOT's obligations under this Amended MOA are subject to the provisions of: Title 23 Code of Federal Regulations, Section 771.109 and (i) the federal Anti-Deficiency Act, 31 U.S.C 1341, 1342, 1351, (ii) the District of Columbia Anti-Deficiency Act, DC Official Code 47-355.01-335.08, (iii) DC Official Code 47-105 and (iv) DC Official Code 1-204.46 (2006 Supp.), as the foregoing statutes may be amended from time to time, regardless of whether a particular obligation has been expressly so conditioned; and

WHEREAS, DDOT is authorized to enter into this Amended MOA pursuant to Sections 5(1)(A)-(D) and 6(b) of the Department of Transportation Establishment Act of 2002, DC Law 14-137, DC Official Code 50-921.04(1)(A)-(D) and 50-921.05(b) and as the project applicant is an invited Signatory under 36 CFR 800.6(c)(2); and

WHEREAS, public participation and involvement have been undertaken to solicit comments from interested parties through public meetings held on June 8, June 14, July 14, and August 16, 2005, and April 26 and 28, 2011; public hearings on the FEIS were held on March 4 and 5, 2008; a Section 106 Consulting Party meeting was held on June 9, 2009; and through publication and distribution of the Draft Environmental Impact Statement, Final Environmental Impact Statement, and relevant Section 106 reports. After the preparation of the Supplemental EIS was initiated, a public meeting was held on May 15, 2014, and Section 106 Consulting Party meetings were held on December 16, 2013, and July 10, 2014. Consulting Parties and Signatories were also provided copies of the *Draft and Final Section 106 Assessment of Effects for Historic Properties* Reports in August and November 2014, respectively; and

WHEREAS, all comments that were provided through the consultation process were considered and incorporated into this Amended MOA, as appropriate; and

WHEREAS, the MOA executed in December 2011 (Attachment 5) is hereby superseded by this Amended MOA.

NOW, THEREFORE, FWHA, DC SHPO, ACHP, and DDOT, agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on historic properties.

STIPULATIONS

FHWA, in coordination with DDOT, shall ensure that the following measures are carried out:

I. Minimization and Mitigation Measures

A. L'Enfant Plan and New Traffic Ovals (see South Capitol Street Project Plan Illustration, Attachment 6)

1. Reservation 245. DDOT will restore Reservation 245 as green space concurrent with the construction of the West Traffic Oval in consultation with the DC SHPO and in accordance with Stipulation II of this Amended MOA. Reservations 243 and 244 were stipulated for restoration in the original MOA but are no longer available since the property owner has proposed new uses for these areas.

2. East Traffic Oval. DDOT will develop a design for the area within the proposed East Traffic Oval and its environs that will preserve open space for future development in accordance with NCPC's planning and policy documents. DDOT will develop the design in consultation with Signatories and Consulting Parties in accordance with Stipulation II of this Amended MOA.

3. West Traffic Oval. DDOT will develop a design for the area within the proposed West Traffic Oval and its environs that will visually maintain the original layout of the historic L'Enfant Plan right-of-way of South Capitol Street and Potomac Avenue and preserve open space for future development in accordance with NCPC's planning and policy documents. DDOT will develop the design in consultation with Signatories and Consulting Parties in accordance with Stipulation II of this Amended MOA.

4. Interpretative Signage. DDOT will develop and implement an interpretive signage program focusing on the L'Enfant Plan within the project area. DDOT will develop the interpretive signage program, from scope and location to final design, in consultation with Signatories and Consulting Parties in accordance with Stipulation II of this Amended MOA. The interpretive signage will be installed by DDOT by the end of the construction period.

B. Suitland Parkway

1. Consultation. DDOT will continue to consult with Signatories and Consulting Parties on roadway and intersection improvements to minimize effects on contributing elements of the historic Suitland Parkway at key project milestones in accordance with Stipulation II of this Amended MOA.

2. Contributing Elements. DDOT will ensure Project plans avoid contributing elements, such as small structures and inlets that were built during the parkway's period of significance. These contributing elements will be preserved in place.

3. Martin Luther King, Jr. Bridge. DDOT will ensure that this bridge, which is a contributing resource to the historic Suitland Parkway, will be preserved and retaining walls composed of mechanically stabilized earth (MSE) will be constructed to support new interchange ramps. These walls will not touch the

historic bridge and will be designed in a context-sensitive manner to be compatible with the bridge. A small 6"x6" cast-in-place key will be attached to the bridge abutments to provide additional load support. This key will not be readily visible to the traveling public. The project's *Visual Quality Manual* stipulates that the retaining walls be clad in a natural stone facing to match the bridge's cladding. DDOT will follow the *Visual Quality Manual* stipulations, in consultation with Signatories and Consulting Parties.

4. DDOT will reconstruct the noncontributing pedestrian bridge that connects Sumner Road SE to the west and Sheridan Drive SE to the east at its intersection with Stanton Road SE over the Suitland Parkway. The new pedestrian bridge's design will be compatible with the historic parkway setting. DDOT will submit draft plans to Signatories and Consulting Parties for design review and comment in accordance with design review procedures established in Stipulation II. B. of this Amended MOA.

C. Aesthetic Review Committee

DDOT has established an Aesthetic Review Committee (ARC) to address visual effects of the new Frederick Douglass Memorial Bridge and to provide input on potential bridge design components. DDOT will invite staff from DC SHPO, NCPC, and CFA to participate in the ARC. DDOT will lead the ARC in evaluating the visual quality aspects of the technical proposals submitted in response to the Project's Request for Proposals. The ARC will assist DDOT in assessing how well the visual quality concepts address the Project's visual design goals.

II. Design Review and Project Modifications

A. DDOT will continue to consult with Signatories and Consulting Parties to avoid, minimize and/or mitigate any unforeseen adverse effects to historic properties associated with project implementation and modifications, and to develop plans and designs required by this Amended MOA. DDOT will notify Signatories and Consulting Parties of any proposed project changes that may alter effects assessments in accordance with Stipulation IV.

B. DDOT will submit draft plans to each Signatory and Consulting Party for review and comment. The milestones for these reviews will be determined by DDOT and will depend upon the selected design and construction approach and related factors. Signatories and Consulting Parties will submit written comments on any proposed plans within thirty (30) calendar days of receipt of draft plans. DDOT will consider all comments received, respond appropriately, and incorporate feedback as feasible and appropriate. DDOT will address any dispute related to these reviews in accordance with Stipulation VII, Dispute Resolution.

C. If DDOT receives substantial design modifications that would require the revised APE to be amended or result in unanticipated adverse effects, DDOT shall immediately notify the Signatories in writing and consult further with the Signatories and Consulting Parties in the design modification planning process to ensure that the effects of the design modifications on historic properties are taken into account in accordance with this Amended MOA and 36 CFR 800. If adverse effects are unavoidable, DDOT shall address any amendments in accordance with Stipulation IV (Unanticipated Discoveries and Unanticipated Effects) and VIII (Amendments).

III. Construction Activities and Potential Indirect Effects

A. Construction Protection Plan. No later than ninety (90) calendar days prior to the commencement of project construction, DDOT shall develop a construction protection plan to ensure that care will be taken to minimize harm to historic properties near construction activities during project implementation and/or that effects to historic properties from temporary construction-related activities will be avoided or minimized. DDOT will adhere to the commitments in the plan as a measure to minimize potential effects on historic properties. Construction-related activities and associated effects addressed in this plan may include, but not necessarily be limited to, vibration effects and potential impacts from proposed haul routes and traffic re-routing. The plan will be developed through coordination with Signatories and Consulting Parties in accordance with Stipulation II of this Amended MOA. If unanticipated adverse effects are identified, any amendments shall be addressed in accordance with Stipulation VIII, Amendments.

B. Construction Staging Plan. DDOT shall review the proposed construction staging plans with DC SHPO to determine if the construction staging will result in previously unanticipated effects on historic properties. If any effects are determined to be adverse, DDOT shall consult with the Signatories and Consulting Parties to identify appropriate avoidance, minimization or mitigation measures to address the newly identified adverse effect. If unanticipated adverse effects are identified, DDOT shall address any amendments in accordance with Stipulation VIII, Amendments.

IV. Unanticipated Discoveries and Unanticipated Effects

A. DDOT will insert into all contracts for excavation, construction, or other ground-disturbing activities in the revised APE the procedures described below for the treatment of unanticipated discoveries and effects, including human remains. DDOT will follow the processes described below in order to minimize the risk of construction delay if archaeological sites that are eligible for listing in the NRHP are discovered during project implementation.

1. If a previously unanticipated archaeological site is discovered within the LOD, which is the area of anticipated direct effects within the revised APE, DDOT shall halt all work involving ground disturbance in the immediate area of discovery. DDOT will notify DC SHPO and FHWA within 24 hours of discovery.

2. An archaeologist meeting the standards set forth in Stipulation XII shall immediately inspect the work site to evaluate the nature and extent of the discovery, make recommendations to DDOT regarding the eligibility of the discovery for the NRHP, and determine the measures needed to protect the discovery from construction effects, if appropriate. DDOT shall promptly protect the area of the discovery, and once it has done so, FHWA shall approve the resumption of construction in those areas where it is concluded in documentation that there will be no physical effect to the discovery.

3. If, during construction, significant archeological resources are discovered on lands administered by NPS, DDOT shall halt all work involving ground disturbance in the immediate area of discovery until the resources can be identified and documented and an appropriate mitigation strategy developed.

DDOT will consult with the DC SHPO, NPS, and/or the NPS Regional Archaeologist to ensure resources are addressed. Any artifacts found on NPS lands are recognized as the property of the NPS.

4. Within three (3) business days of making the discovery, DDOT shall submit written notification to DC SHPO, NPS and FHWA that shall include DDOT's assessment of 1) whether the data available permit a determination of eligibility for the NRHP and if not, plans to conduct Phase I investigations of the identified resources, or 2) if the resources are eligible for listing in the NRHP, the actions that DDOT proposes to resolve the potential adverse effects. DC SHPO, NPS and FHWA shall have two (2) business days (not including a federal holiday) from receipt of written notification to respond to DDOT. DDOT shall take into account any recommendations provided by DC SHPO, NPS and FHWA. FHWA shall make a final decision on proposed actions, if any, in consultation with DC SHPO prior to implementation. Disputes regarding the final decision will be resolved in accordance with Stipulation VII, Dispute Resolution.

B. DDOT will ensure that any area that has not been investigated in the prior required Phase I identification study will be researched in accordance to the Phase I requirements.

C. As part of project construction processes, DDOT, or its contractors, will monitor potential unanticipated adverse effects to built historic properties from vibration, maintenance of traffic rerouting, or other project impacts not identified in the Supplemental EIS. DDOT will notify the Signatories and Consulting Parties of any potential unanticipated adverse effects within 10 business days of discovery and develop a plan to consult with the Signatories and Consulting Parties to resolve any unanticipated adverse effects.

V. Discovery of Human Remains

A. Within twenty-four (24) hours, DDOT shall notify DC SHPO and FHWA if human remains are discovered during implementation of the Undertaking and shall halt all ground-disturbing activities in the immediate area of the discovery until all of the following actions have been carried out.

1. Within twenty-four (24) hours, DDOT shall implement measures to protect the human remains from inclement weather and vandalism, and notify the District of Columbia Office of the Chief Medical Examiner (OCME) of the discovery.

2. DDOT shall provide OCME and DC SHPO with a description of the discovery sufficient to allow OCME to complete its obligations under DC Official Code §5-1406 or other applicable law.

3. If the OCME determines that the human remains are not subject to a criminal investigation by local or federal authorities, DDOT shall comply with all applicable federal and District of Columbia laws and regulations governing the discovery and disposition of human remains. If the remains are deemed a Section 106 resource, DDOT shall follow ACHP's *Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects* (2007), available at: www.achp.gov/docs/hrpolicy0207.pdf.

4. In the event that DDOT determines, after consultation as set forth in Stipulation V.F, that Native American human remains or funerary objects have been discovered in a parcel owned by the federal government, DDOT shall immediately (within 24 hours) notify the appropriate federal land manager and FHWA will contact affected Indian tribes.

5. Before making any final decision regarding the treatment of human remains, DDOT shall within five (5) business days (not including a federal holiday) after discovery of such remains initiate consultation with ACHP, DC SHPO, Indian tribes (if applicable), and Consulting Parties to develop and implement treatment measures and plans in accordance with federal and District law.

VI. Reporting

A. Annual Reports. In order to monitor completion of the stipulations contained in this Amended MOA, DDOT, on behalf of FHWA, will prepare and submit annual reports to Signatories and Consulting Parties summarizing the actions taken to fulfill the stipulations of this Amended MOA. DDOT will incorporate the stipulations included in this Amended MOA into the final design plans for the South Capitol Street Project.

B. Annual Meetings. DDOT will hold annual meetings with the Signatories and Consulting Parties of the Amended MOA to discuss activities carried out pursuant to this Amended MOA during the preceding year and activities scheduled for the coming year. Annual reports, as described in Stipulation VI. A., shall be distributed by DDOT to the Signatories and Consulting Parties of the Amended MOA at least fifteen (15) calendar days prior to the annual meeting.

C. Schedule. The timeframe for the annual reports and annual meetings will commence from the execution date of this Amended MOA.

D. Final Report. DDOT will issue a final report describing the completion of all stipulations contained in this Amended MOA. The final report will be submitted to Signatories and Consulting Parties three (3) months prior to the date the Amended MOA expires.

VII. Dispute Resolution

A. Should any Signatory or Consulting Party to this Amended MOA object within thirty (30) calendar days to any documentation or materials submitted for review, actions proposed, or review comments submitted pursuant to this Amended MOA, FHWA shall consult with the objecting party and/or parties in an attempt to resolve the objection.

B. If FHWA determines that the objection cannot be resolved, FHWA shall forward documentation relevant to the dispute and request the further comments of ACHP. Within forty-five (45) calendar days after receipt of all pertinent documentation, ACHP will either provide FHWA with comments which FHWA will take into account in reaching a final decision regarding the dispute or notify FHWA that it will

comment pursuant to 36 CFR 800.7(c), and proceed to comment. Any ACHP comment provided in response to such a request shall be taken into account by FHWA in accordance with 36 CFR 800.7(c) (4) with reference to the subject of the dispute. Any ACHP recommendation or comment will be understood to pertain only to the subject of the dispute; FHWA's responsibility to carry out all actions under this Amended MOA that are not subjects of the dispute will remain unchanged.

C. FHWA shall inform all Signatories and Consulting Parties of its final decision.

D. At any time during implementation of the measures stipulated in this Amended MOA, should an objection to its implementation be raised by a member of the public, FHWA shall take the objection into account and consult as needed with the objecting party, DC SHPO, NPS, ACHP and/or DDOT to resolve the objection. FHWA will notify Signatories and Consulting Parties of any objection within thirty (30) calendar days and develop a consultation plan to address the objection. If FHWA determines that the objection cannot be resolved, the processes described in VII.B and VII.C will be followed.

VIII. Amendments

Any Signatory to this Amended MOA may propose that it be further amended, whereupon the Signatory shall consult with the other Signatories and Consulting Parties to this Amended MOA within thirty (30) calendar days of the proposal to consider an amendment. Any such amendment shall be effective on the date a fully executed copy is filed with ACHP.

IX. Termination

A. If any Signatory to the Amended MOA determines that the Amended MOA's terms will not or cannot be carried out, that party shall immediately consult with the other Signatories to attempt to develop an amendment per Stipulation VIII, above. If, within thirty (30) calendar days, an amendment cannot be reached, any Signatory may terminate the Amended MOA upon written notification to the other Signatories.

B. Once the Amended MOA is terminated, and prior to work continuing on the Undertaking, FHWA must either (a) execute an MOA pursuant to 36 CFR 800.6 or (b) request, take into account, and respond to the comments of ACHP under 36 CFR 800.7.

C. FHWA shall notify the Signatories and Consulting Parties as to the course of action it will pursue.

X. Monitoring

Signatories may request to monitor activities carried out pursuant to this Amended MOA. If FHWA, in coordination with DDOT, determines that monitoring will cause safety and scheduling concerns, FHWA will cooperate with Signatories to carry out their monitoring and review responsibilities.

XI. Personnel Qualifications

All historic properties work performed pursuant to this Amended MOA will be carried

out by or under the direct supervision of historians, architectural historians, and archeologists who meet or exceed the *Secretary of the Interior's Professional Qualification Standards* set forth in 36 CFR Part 61, Appendix A.

XII. Principles and Standards

FHWA and DDOT agree that all historic properties investigations and work performed pursuant to this Amended MOA shall be conducted in a manner consistent with the principles and standards contained in *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR Part 68), *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (1983 and successors), *DC Historic Landmark and Historic District Protection Act* (1979, as amended), *Guidelines for Archeological Investigations in the District of Columbia* (DC Preservation League 1988), *Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites* (ACHP 1999, 64FR 27085-27087), and *DC Historic Landmark and Historic District Protection Act* (1978 as amended).

XIII. Coordination with Other Federal Reviews

If FHWA receives a written request from an agency(ies) to meet its Section 106 responsibilities by adhering to the Amended MOA, FHWA will consider such a request. If FHWA agrees in writing that the effects of the South Capitol Street Project on historic properties will remain unchanged as a result of the additional Undertaking(s), the federal agency(ies) which are responsible for the additional Undertaking(s) may fulfill their Section 106 responsibilities by agreeing in writing to the terms of this Amended MOA. Any amendments shall be addressed in accordance with Stipulation VIII, Amendments.

XIV. Counterparts/Electronic Copies

This Amended MOA may be executed in counterparts, each separately and together constituting the same document. Execution of this Amended MOA by facsimile shall be sufficient for all purposes. Within one week of following receipt of the last signature on this Amended MOA, DDOT shall provide each Signatory with one legible, full-color, electronic copy of this fully-executed Amended MOA and all of its attachments. If the electronic copy is too large to send via e-mail, DDOT shall provide each Signatory and Consulting Party with a copy of this Amended MOA via a compact disc.

XV. Duration

The terms of this Amended MOA shall commence on the date the last signature is affixed hereto (Effective Date), and shall expire when the Amended MOA is terminated, or twelve (12) years from the Effective Date of the Amended MOA, whichever occurs first, unless the Signatories agree in writing to an extension.

Execution of this Amended MOA by FHWA, DC SHPO, ACHP, and DDOT prior to FHWA approval of this Undertaking, and implementation of its terms, evidence that FHWA has taken into account the effects of this Undertaking on historic properties and has afforded ACHP an opportunity to comment on the Undertaking.

Signatures Follow

SIGNATORY PAGE
AMENDED AND RESTATED MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICER,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION,
REGARDING
THE SOUTH CAPITOL STREET PROJECT WITHIN THE DISTRICT OF COLUMBIA

Federal Highway Administration

By: Joseph C. Lawson
Joseph C. Lawson, District Administrator

Date: 6/4/15

SIGNATORY PAGE
AMENDED AND RESTATED MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICER,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION,
REGARDING
THE SOUTH CAPITOL STREET PROJECT WITHIN THE DISTRICT OF COLUMBIA

District of Columbia State Historic Preservation Office

By: _____
David Maloney
District of Columbia State Historic Preservation Officer

Date: 6/9/2015

SIGNATORY PAGE
AMENDED AND RESTATED MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICER,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION,
REGARDING
THE SOUTH CAPITOL STREET PROJECT WITHIN THE DISTRICT OF COLUMBIA

Advisory Council on Historic Preservation

By: _____
for John Fowler, Executive Director

Date: 6/15/15

SIGNATORY PAGE
AMENDED AND RESTATED MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICER,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION,
REGARDING
THE SOUTH CAPITOL STREET PROJECT WITHIN THE DISTRICT OF COLUMBIA

District Department of Transportation (Invited Signatory)

By: _____
Leif Dormsjo, Director

Date: 6/11/15

Preserving America's Heritage

June 15, 2015

Mr. Michael Hicks
Environmental Engineer
Federal Highway Administration
1990 K Street NW, Suite 510
Washington, D.C. 20006

Ref: *Amended and Restated Memorandum of Agreement among the Federal Highway Administration, The District of Columbia State Historic Preservation Officer, The Advisory Council on Historic Preservation, and the District Department of Transportation, regarding the South Capitol Street Project within the District of Columbia*

Dear Mr. Hicks:

Enclosed is a copy of the Advisory Council on Historic Preservations signature page for the amended Memorandum of Agreement for the referenced undertaking. By carrying out the terms of the Agreement, you will fulfill your responsibilities under Section 106 of the National Historic Preservation Act and the regulations of Advisory Council on Historic Preservation.

We commend FHWA for working closely with the District Department of Transportation, the District of Columbia State Historic Preservation Office and other consulting parties to resolve the adverse effects for this undertaking.

If we may be of further assistance, please contact Meghan Hesse at (202) 517-0214, or via e-mail at mhesse@achp.gov .

Sincerely,

Charlene Dwin Vaughn

Charlene Dwin Vaughn, AICP
Assistant Director
Federal Permitting, Licensing and Assistance Section
Office of Federal Agency Programs

Enclosure

Attachment 1: National Capital Planning Commission Correspondence

National Capital Planning Commission 401 9th Street, NW North Lobby, Suite 500 Washington, DC 20004 Tel: 202.482.7200 Fax: 202.482.7272 www.ncpc.gov

NCPC File No. 7529

March 18, 2015

Joseph C. Lawson
Federal Highway Administration
District of Columbia Division
1990 K Street, N.W. Suite 510
Washington, DC 20006-1103

RE: South Capitol Street, National Historic Preservation Act, Section 106 Signatory

Dear Mr. Lawson,

The National Capital Planning Commission is aware that the Federal Highway Administration has proposed a Revised Preferred Alternative in a Supplemental Draft Environmental Impact Statement (SDEIS) for the South Capitol Street Project (Project) that introduces changes not previously included as part of the 2011 Final EIS (FEIS). Because of these proposed changes, effects to historic properties from the Revised Preferred Alternative have been assessed as part of the Project's compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended) and its enabling legislation at Code of Federal Regulations Title 36 Part 800. A Supplemental Draft Environmental Impact Statement has been circulated to the public and the Section 106 process has been reinitiated to address the changes in effects to historic properties.

A Memorandum of Agreement (MOA) was executed in December 2011 to address adverse effects of the Project, as identified in the Final Environmental Impact Statement at that time.

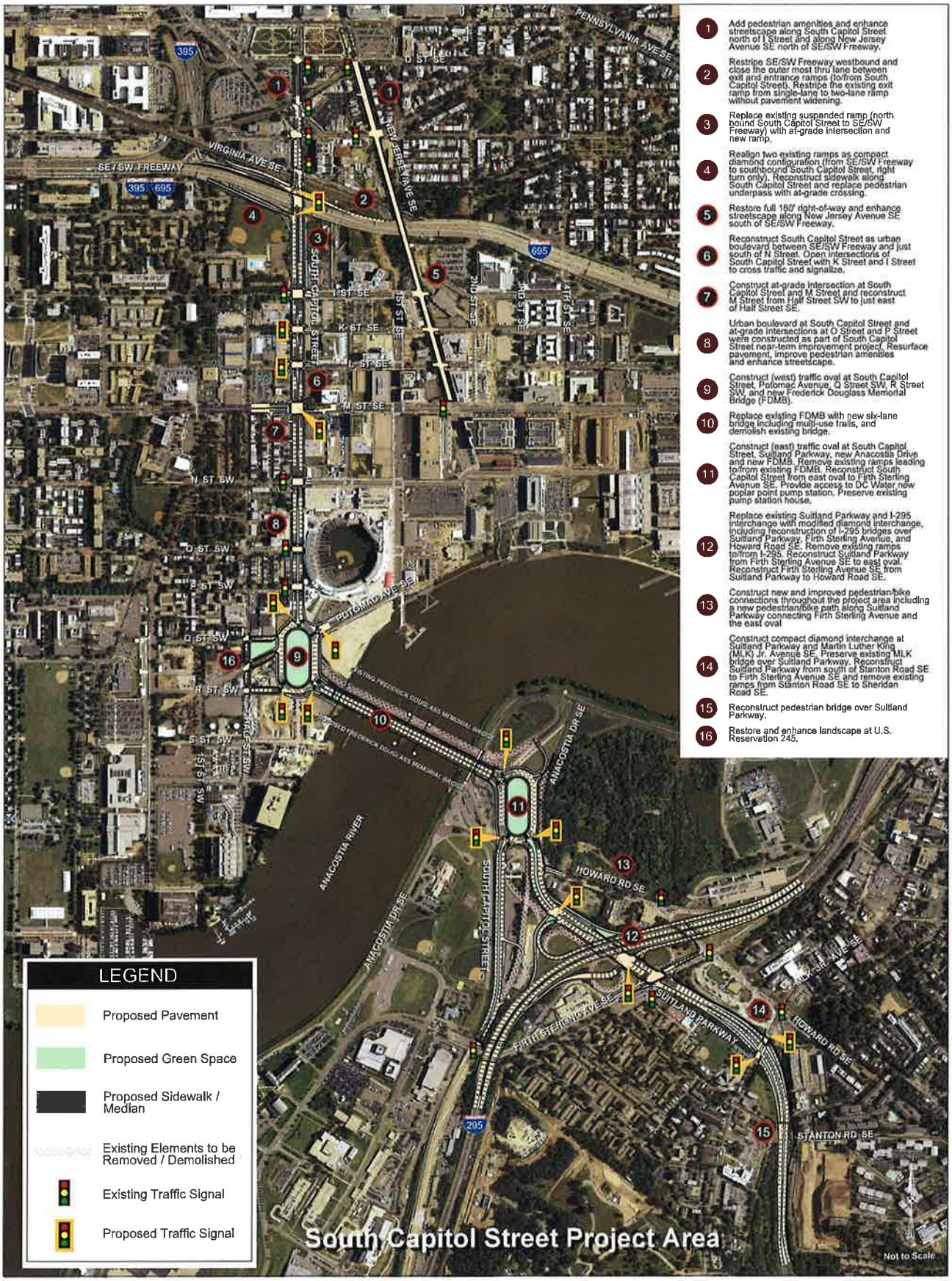
The previous Preferred Alternative included in the FEIS required land transfers between the District Department of Transportation and both the National Park Service as well as the Department of Defense. As the central planning agency for the federal government in the National Capital Region, the National Capital Planning Commission (NCPC) must approve land transfers, which is why the Commission was a Signatory to the 2011 MOA. The Revised Preferred Alternative described in the SDEIS will not require the land transfers. Because of this change in the Revised Preferred Alternative, NCPC no longer has an approval role. The NCPC remains a cooperating agency for the Project and a Section 106 consulting party, but does not need to be a signatory to the Amended MOA.

Sincerely,

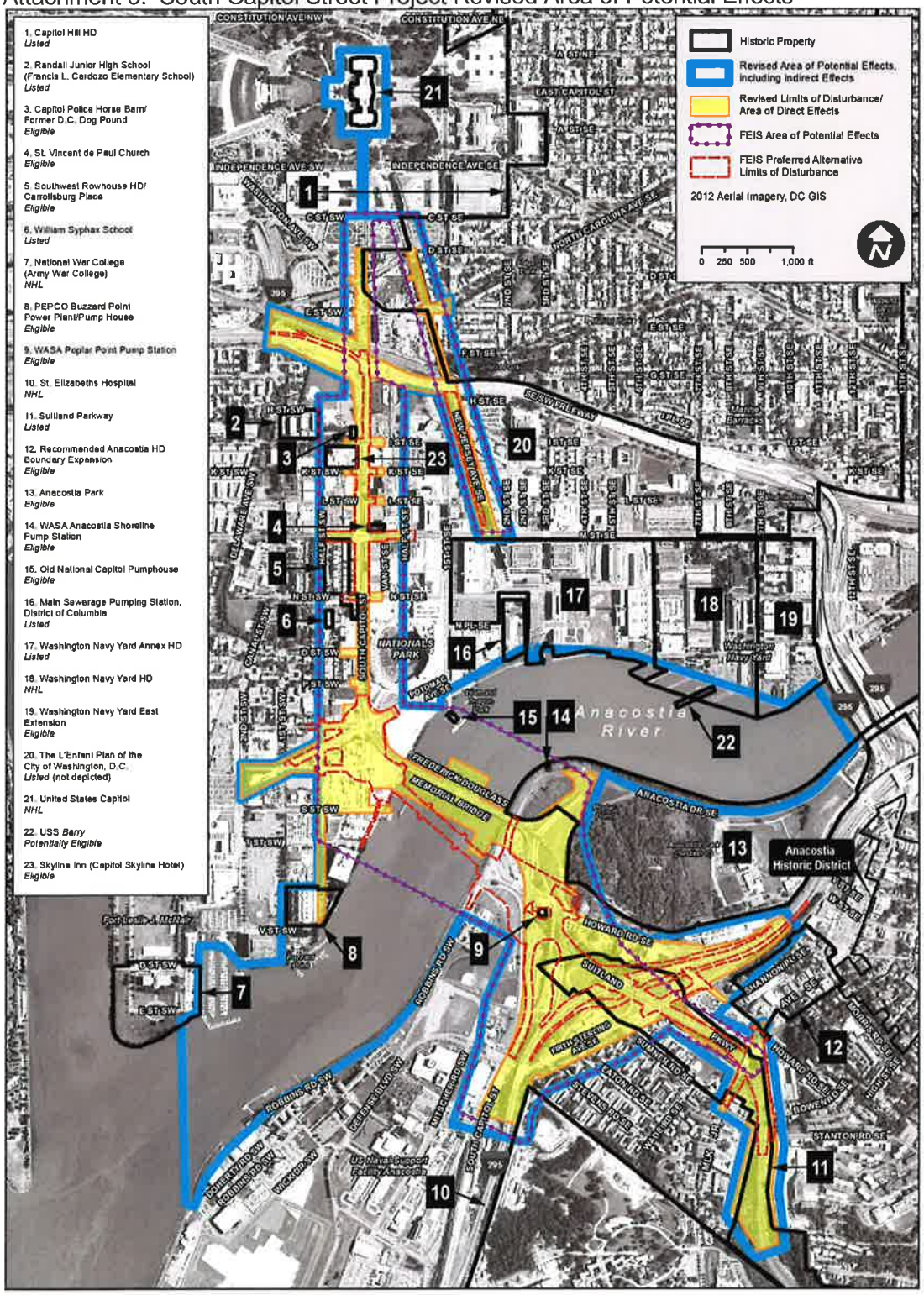
Marcel Acosta
Executive Director

Cc: Leif Dormsjo, District Department of Transportation, Acting Director
David Maloney, District of Columbia Historic Preservation Officer
John Fowler, Advisory Council on Historic Preservation, Executive Director

Attachment 2. Project Plan Illustration


1 Add pedestrian amenities and enhance streetscape along South Capitol Street north of I Street and along New Jersey Avenue SE north of SE/SW Freeway.
2 Restripe SE/SW Freeway westbound and close the outer most thru lane between exit and entrance ramps (to/from South Capitol Street). Restripe the existing exit ramp from single-lane to two-lane ramp without pavement widening.
3 Replace existing suspended ramp (north bound South Capitol Street to SE/SW Freeway) with at-grade intersection and new ramp.
4 Realign two existing ramps as compact diamond configuration (from SE/SW Freeway to southbound South Capitol Street, right turn only). Reconstruct sidewalk along South Capitol Street and replace pedestrian underpass with at-grade crossing.
5 Restore full 160' right-of-way and enhance streetscape along New Jersey Avenue SE south of SE/SW Freeway.
6 Reconstruct South Capitol Street as urban boulevard between SE/SW Freeway and just south of N Street. Open intersections of South Capitol Street with K Street and I Street to cross traffic and signalize.
7 Construct at-grade intersection at South Capitol Street and M Street and reconstruct M Street from Half Street SW to just east of Half Street SE.
8 Urban boulevard at South Capitol Street and at-grade intersections at O Street and P Street were constructed as part of South Capitol Street near-term improvement project. Resurface pavement, improve pedestrian amenities and enhance streetscape.
9 Construct (west) traffic oval at South Capitol Street, Potomac Avenue, Q Street SW, R Street SW, and new Frederick Douglass Memorial Bridge (FDMB).
10 Replace existing FDMB with new six-lane bridge including multi-use trails, and demolish existing bridge.
11 Construct (east) traffic oval at South Capitol Street, Suitland Parkway, new Anacostia Drive and new FDMB. Remove existing ramps leading to/from existing FDMB. Reconstruct South Capitol Street from east oval to Firth Sterling Avenue SE. Provide access to DC Water new poplar point pump station. Preserve existing pump station house.
12 Replace existing Suitland Parkway and I-295 interchange with modified diamond interchange, including reconstruction of I-295 bridges over Suitland Parkway, Firth Sterling Avenue, and Howard Road SE. Remove existing ramps to/from I-295. Reconstruct Suitland Parkway from Firth Sterling Avenue SE to east oval. Reconstruct Firth Sterling Avenue SE from Suitland Parkway to Howard Road SE.
13 Construct new and improved pedestrian/bike connections throughout the project area including a new pedestrian/bike path along Suitland Parkway connecting Firth Sterling Avenue and the east oval
14 Construct compact diamond interchange at Suitland Parkway and Martin Luther King (MLK) Jr. Avenue SE. Preserve existing MLK bridge over Suitland Parkway. Reconstruct Suitland Parkway from south of Stanton Road SE to Firth Sterling Avenue SE and remove existing ramps from Stanton Road SE to Sheridan Road SE.
15 Reconstruct pedestrian bridge over Suitland Parkway.
16 Restore and enhance landscape at U.S. Reservation 245.
LEGEND
Proposed Pavement
Proposed Green Space
Proposed Sidewalk / Median
Existing Elements to be Removed / Demolished
Existing Traffic Signal
Proposed Traffic Signal
South Capitol Street Project Area
Not to Scale
PENNSYLVANIA AVE SE
VIRGINIA AVE SE
SE/SW FREEWAY
NEW JERSEY AVE SE
SOUTH CAPITOL STREET
POTOMAC AVE SE
ANACOSTIA RIVER
ANACOSTIA DR SE
HOWARD RD SE
SUITLAND PARKWAY
FIRTH STERLING AVE SE
MLK JR AVE SE
STANTON RD SE
395
695
295

Attachment 3: South Capitol Street Project Revised Area of Potential Effects



Attachment 4: South Capitol Street Project Effects Determinations for Historic Properties within the Revised APE

MAP KEY NUMBER	HISTORIC PROPERTY NAME	EFFECT DETERMINATION
1	Capitol Hill Historic District	No Adverse Effect
2	Randall Junior High School (Francis L. Cardozo Elementary School)	No Effect
3	Capitol Police Horse Barn/Former D.C. Dog Pound	No Adverse Effect
4	St. Vincent de Paul Church	No Adverse Effect
5	Southwest Rowhouse Historic District/Carrollsburg Place	No Adverse Effect
6	William Syphax School	No Effect
7	National War College (Army War College)	No Adverse Effect
8	PEPCO Buzzard Point Power Plant/Pump House	No Adverse Effect
9	WASA Poplar Point Pump Station	No Adverse Effect
10	St. Elizabeths Hospital	No Adverse Effect
11	Suitland Parkway	No Adverse Effect
12	Recommended Anacostia Historic District Boundary Expansion	No Adverse Effect
13	Anacostia Park	No Adverse Effect
14	WASA Anacostia Shoreline Pump Station	No Adverse Effect
15	Old National Capitol Pumphouse	No Adverse Effect
16	Main Sewerage Pumping Station, District of Columbia	No Adverse Effect
17	Washington Navy Yard Annex Historic District	No Adverse Effect
18	Washington Navy Yard Historic District	No Adverse Effect
19	Washington Navy Yard East Extension	No Adverse Effect
20	The L'Enfant Plan of the City Washington, D.C.	Adverse Effect
21	United States Capitol	No Adverse Effect
22	USS *Barry*	No Adverse Effect
23	Skyline Inn	No Adverse Effect
N/A (out of LOD)	Site 51SE012	No Effect
N/A (out of LOD)	Site 51SE024	No Effect
N/A (out of LOD)	Site 51SE034 (Howard Road Historic District)	No Effect
N/A (out of LOD)	Site 51SE071	No Effect

Attachment 5: 2011 Executed Memorandum of Agreement

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICE,
THE NATIONAL CAPITAL PLANNING COMMISSION,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION,
REGARDING
THE SOUTH CAPITOL STREET PROJECT WITHIN THE
DISTRICT OF COLUMBIA

This Memorandum of Agreement (MOA) is entered into by and among the Federal Highway Administration (FHWA), the District of Columbia State Historic Preservation Officer (DC SHPO), the National Capital Planning Commission (NCPC), the Advisory Council on Historic Preservation (ACHP) and the District Department of Transportation (DDOT) as an invited signatory (individually referred to herein as "Signatory" and collectively as "Signatories").

RECITALS

WHEREAS, FHWA is the lead federal agency responsible for compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470), and the implementing regulations provided in 36 CFR Part 800; and

WHEREAS, the Proposed Undertaking (Undertaking), according to the South Capitol Street Final Environmental Impact Statement (FEIS) and associated Section 106 studies that are the subject of this MOA, will be the replacement of the Frederick Douglass Memorial Bridge with a new arched bascule bridge in a selected location over the Anacostia River and conversion of the South Capitol Street Corridor into a grand, urban boulevard, which will provide a prominent gateway to the US Capitol and Monumental Core in keeping with the original intent of Pierre L'Enfant's 1791 Plan of the City of Washington. The Undertaking includes the widening of the Suitland Parkway between South Capitol Street and Martin Luther King, Jr. Avenue and the construction of a new interchange at Martin Luther King, Jr. Avenue. The Undertaking will include elements that accommodate existing and potential transit facilities and provide enhanced pedestrian and bicycle facilities as well as streetscape features; and

WHEREAS, FHWA administers the Federal-Aid Highway Program in the District of Columbia authorized (23 U.S.C. 101 et seq.) through Federal-aid Agreement with DDOT as project sponsor (49 CFR 1.48) and, as such, DDOT is responsible for executing the Proposed Undertaking in accordance with the terms of this MOA; and

WHEREAS, NCPC is the central planning agency for the federal government in the National Capital Region, reviews District of Columbia public projects, and may have Section 106 review responsibilities in the future; and

WHEREAS, the National Park Service (NPS) is the federal agency with jurisdiction over park areas within the NHPA area of potential effects,; and has participated as a Consulting Party in the Development of the MOA.

WHEREAS, DDOT has jurisdiction over the Suitland Parkway in the District of Columbia; and

WHEREAS, the area of potential effects (APE) for the Undertaking has been determined by FHWA in accordance with the definition provided in 36 CFR 800.16(d) and is delineated on the attached Exhibit A; and

WHEREAS, FHWA has consulted with DC SHPO pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, "Protection of Historic Properties" (36 CFR Part 800); and

WHEREAS, FHWA, ACHP, NCPC, DC SHPO, and DDOT are the Signatories of this MOA; and

WHEREAS, the National Park Service, the Capitol Hill Restoration Society, Heritage Preservation, Southwest Neighborhood Assembly, Washington Metropolitan Area Transit Authority, and Georgetown University Law Center have chosen to participate in the project as Section 106 Consulting Parties (Consulting Parties); and

WHEREAS, FHWA has determined during the National Environmental Policy Act and Section 106 review processes that the Undertaking will have an adverse effect on properties listed in the National Register of Historic Places (NRHP) as part of the Plan of the City of Washington (L'Enfant Plan), through the introduction of a traffic oval that would interrupt the linear integrity of Potomac Avenue, one of the original diagonal roadways in the L'Enfant Plan. The Undertaking will also have an adverse effect on the NRHP-listed Suitland Parkway by altering the historic alignment of the Suitland Parkway and reconstructing the Martin Luther King, Jr. Avenue overpass; and

WHEREAS, FHWA has determined that the Undertaking will have no adverse effect on the Capitol Hill Historic District; William Syphax School; District of Columbia Water and Sewer Authority's O Street Station and two associated pump stations; District of Columbia Water and Sewer Authority's Anacostia Shoreline Pump Station; District of Columbia Water and Sewer Authority's Poplar Point Pump Station; Washington Metropolitan Area Transit Authority's Southeastern Bus Garage (17 M Street, SE – demolished in 2009); Carrollsburg Place Historic District; Eliza Randall School and Recreation Center; Former District of Columbia Dog Pound; Old National Capitol Pump House; St. Vincent De Paul Church; and Anacostia Park; and

WHEREAS, FHWA has determined that no known archaeological sites are present within the APE; and

WHEREAS, FHWA notified ACHP of the potential adverse effects pursuant to 36 CFR 800.6(a)(1) and ACHP has chosen to participate formally in the development of this MOA; and

WHEREAS, DDOT's obligations under this MOA are subject to the provisions of: Title 23 Code of Federal Regulations, Section 771.109 and (i) the federal Anti-Deficiency Act, 31 U.S.C 1341, 1342, 1351, (ii) the District of Columbia Anti-Deficiency Act, D.C. Official Code 47-355.01-335.08, (iii) D.C. Official Code 47-105 and (iv) D.C. Official Code 1-204.46 (2006 Supp.), as the foregoing statutes may be amended from time to time, regardless of whether a particular obligation has been expressly so conditioned; and

WHEREAS, DDOT is authorized to enter into this MOA pursuant to Sections 5(1)(A)-(D) and 6(b) of the Department of Transportation Establishment Act of 2002, D.C. Law 14-137, D.C. Official

Code 50-921.04(1)(A)-(D) and 50-921.05(b) and as an invited Signatory under 36 CFR 800.6(c)(2); and

WHEREAS, public participation and involvement have been undertaken to solicit comments from interested parties through public meetings held on June 8, June 14, July 14, and August 16, 2005 and April 26 and 28, 2011; public hearings held on March 4 and 5, 2008; and a Section 106 Consulting Party meeting held on June 9, 2009, and through publication and distribution of the Draft Environmental Impact Statement, Final Environmental Impact Statement, and relevant Section 106 reports.

NOW, THEREFORE, FWHA, DC SHPO, NCPC, ACHP, and DDOT, agree that the Undertaking shall be implemented in accordance with the stipulations provided herein.

STIPULATIONS

FHWA shall ensure that the following measures are carried out:

I. Historic Properties Mitigation

A. Plan of the City of Washington

1. DDOT will continue to consult with Signatories and Consulting Parties on roadway and intersection improvements to avoid, minimize and/or mitigate adverse effects on the Plan of the City of Washington at key project milestones. An 11" x 17" set of project design plans for review will be distributed to each Signatory and Consulting Party at 30%, 65%, and 90% milestones. Signatories and Consulting Parties may submit written comments on the proposed plans within 30 calendar days. DDOT will consider and respond to timely written comments. If any Signatory and/or Consulting Party does not provide comments or objections within 30 calendar days of receipt, DDOT shall continue with project planning and development in accordance with the proposed plans.

2. DDOT will restore Reservations 243, 244, if feasible, and 245 in accordance with design practices established through coordination with DC SHPO and NCPC and in accordance with design review procedures established in Stipulation I.A.1 of this MOA. Reservation 244 is currently used as a roadway maintenance support facility. Therefore, DDOT will coordinate annually with the District of Columbia Department of Public Works (DPW), the operator of such support facility to determine if the restoration of Reservation 244 is feasible during the life of this MOA. DPW's response from this coordination shall be included in the annual report in accordance with Stipulation VI, Reporting.

3. DDOT will develop a design for the area within the proposed traffic oval and its environs that will visually maintain the original layout of the historic L'Enfant right-of-way of South Capitol Street and Potomac Avenue and preserve open space for future development in accordance with NCPC's planning and policy documents. The design will be developed through further coordination with Signatories and Consulting Parties in accordance with design review procedures established in Stipulation I.A.1 of this MOA.

4. DDOT will develop and implement an interpretive signage program within the project area focusing on the Plan of the City of Washington. The interpretive signage program, from scope and location to final design, will be developed through coordination with Signatories and Consulting Parties in accordance with design review procedures established in Stipulation I.A.1 of this MOA. All interpretive signage will be installed by DDOT by the end of the construction period.

B. Suitland Parkway

1. DDOT will continue to consult with Signatories and Consulting Parties on roadway and intersection improvements to minimize and/or mitigate adverse effects on the Suitland Parkway at key project milestones. An 11" x 17" set of project design plans for review will be distributed to each Signatory and Consulting Party at 30%, 65%, and 90% milestones. Signatories and Consulting Parties may submit written comments on the plans within 30 calendar days. DDOT will consider and respond to timely written comments. If any Signatory and/or Consulting Party does not provide comments or objections within 30 calendar days of receipt, DDOT shall continue with project planning and development in accordance with the proposed plans.

2. The replacement bridge design of the Martin Luther King, Jr. Avenue overpass at the Suitland Parkway will take into account the *Secretary of the Interior's Standards for the Rehabilitation of Historic Properties* and will be developed in consultation with Signatories and Consulting Parties, in accordance with design review procedures established in Stipulation I.B.1 of this MOA.

3. DDOT will salvage and reuse (within the project limits) original historic materials from the roadway and the existing Martin Luther King, Jr. Avenue overpass, to the extent feasible and practicable.

4. DDOT will design the affected section of the Suitland Parkway between Firth Sterling Avenue and Stanton Road with close coordination with NPS and in accordance with *NPS Park Road Standards*, 1984.

5. DDOT will develop an aesthetic treatment plan for the Suitland Parkway interchange at Martin Luther King, Jr. Avenue and the Suitland Parkway pedestrian bridge including signage, roadway lighting, landscaping, and other appurtenances. DDOT will submit the treatment plan to Signatories and Consulting Parties for review and comment, in accordance with design review procedures established in Stipulation I.B.1 of this MOA.

6. DDOT will reconstruct the pedestrian bridge over the Suitland Parkway with a design that is compatible to the historic parkway setting. DDOT will submit plans to Signatories and Consulting Parties for design review and comment in accordance with design review procedures established in Stipulation I.B.1 of this MOA.

7. DDOT will complete a historic recordation of the Martin Luther King, Jr. Avenue Bridge and the area of the Suitland Parkway within the project limits in accordance with NPS guidelines for Historic American Buildings Survey and/or Historic American Engineering Record (HABS/HAER) recordation, and will provide one copy of the

recordation package to each Signatory and make available to Consulting Parties if requested.

II. Design Modifications

A. Should the Undertaking require design modifications, DDOT shall consult with Signatories and Consulting Parties as early as possible in the design modification planning process to ensure that the effects of the design modifications on historic properties are taken into account in accordance with 36 CFR 800. Design modifications may include, but are not limited to, alignment modifications, storm water management facilities, wetland mitigation sites, parkland mitigation sites, reforestation areas, pedestrian/bicycle facilities, or the use of land that is outside of the previously established APE. All design modifications will be evaluated in accordance with the consultation procedures outlined in Stipulation I.A.1 and I.B.1. DC SHPO will review all design modifications to determine if additional consultation is required.

B. DDOT shall have a professional historic properties consultant that meets the standards set forth in Stipulation XII review any additions or changes to the project and implement identification investigations as necessary to identify any historic properties that may be affected by the proposed activity or alignment modification. DDOT shall provide all findings and recommendations to Signatories and Consulting Parties under this MOA for review and comment. If any Signatory and/or any Consulting Party does not provide comments or objections within 30 calendar days of receipt, DDOT shall continue with project planning and development in accordance with the proposed plans.

C. DDOT shall evaluate all historic properties identified in the areas inventoried under Stipulation II.B to determine its eligibility for the NRHP. DDOT shall provide the results of any such evaluations to Signatories and Consulting Parties for review and comment. If any Signatory and/or any Consulting Party does not provide comments or objections within 30 calendar days of receipt, DDOT shall continue with project planning and development in accordance with the proposed plans.

D. DDOT shall make a good-faith effort to avoid adverse effects to historic properties by relocating or modifying the Undertaking, should any property eligible for inclusion in the NHRP be identified under Stipulation II.C. If adverse effects are unavoidable, Signatories and Consulting Parties shall consult to develop and implement an appropriate treatment plan or amendment to this MOA. Any resulting historic properties work will be accomplished in accordance with the relevant performance standards in Stipulations XII and XIII of this MOA.

III. Construction Activities

A. No later than 90 days prior to the commencement of the project construction, DDOT shall develop a construction protection plan to ensure that care will be taken to minimize harm to historic properties near construction activities during project implementation and/or that adverse effects to neighboring historic districts from temporary construction-related activities will be avoided or minimized. The plan will be developed through coordination with Signatories and Consulting Parties in accordance with design review procedures established in Stipulation I.A.1 and I.B.1 of this MOA. The identification of

adverse effects may require an amendment to this MOA in accordance with Stipulation VIII, Amendment.

B. DDOT shall review the proposed construction staging plans with DC SHPO to determine if the construction staging will result in effects to historic properties. If any effects are determined to be adverse, DDOT shall consult further with DC SHPO to identify appropriate avoidance, minimization or mitigation measures. The identification of adverse effects may require an amendment to this MOA in accordance with Stipulation VIII, Amendment.

C. If significant modifications to the construction staging plans are required after final design review has been completed or during construction that may result in unanticipated adverse effects, consultation with Signatories and Consulting Parties will be undertaken by DDOT in accordance with 36 CFR 800.6.

IV. Unanticipated Discoveries

A. DDOT will insert into all contracts for excavation, construction, or other ground-disturbing activities in the APE the procedures described below for the treatment of unexpected discoveries, including human remains. DDOT will take these actions in order to minimize the risk of construction delay if archaeological sites that are eligible for listing in NRHP are discovered during project implementation.

1. Whenever a previously unidentified archaeological site is discovered within the APE, DDOT shall halt all work involving ground disturbance in the immediate area of discovery. DDOT will notify DC SHPO,and FHWA within 24 hours of discovery.

2. An archaeologist meeting the standards set forth in Stipulation XII shall immediately inspect the work site to evaluate the nature and extent of the discovery, make recommendations to DDOT regarding the eligibility of the discovery for the NRHP, and determine the measures needed to protect the discovery from construction effects, if appropriate. DDOT shall promptly protect the area of the discovery, and once it has done so, FHWA shall provide approval so that construction may resume in those areas where there would be no physical effect to the discovery.

3. If, during construction, significant archeological resources are discovered on lands administered by NPS, DDOT shall halt all work involving ground disturbance in the immediate area of discovery until the resources can be identified and documented and an appropriate mitigation strategy developed. If necessary, consultation with the DC SHPO, NPS, and/or the NPS Regional Archaeologist will be coordinated to ensure resources are addressed. Any artifacts found on NPS lands are recognized as the property of the NPS.

4. Within three (3) business days of making the discovery, DDOT shall submit written notification to DC SHPO, NPS and FHWA that shall include DDOT's assessment of 1) whether the data available permit a determination of eligibility for the NRHP and if not, plans to conduct Phase I investigations of the identified resources, or 2) if the resources are eligible for listing in the NRHP, the actions that DDOT proposes to resolve the potential adverse effects. DC SHPO, NPS and FHWA shall have two (2) business days (not including a federal holiday) from receipt of written notification to

respond to DDOT. DDOT shall take into account any recommendations provided by DC SHPO, NPS and FHWA. FHWA shall make a final decision on proposed actions, if any, in consultation with DC SHPO prior to implementation. Disputes regarding the final decision will be resolved in accordance with Stipulation VII of this MOA.

B. Any areas that have not been investigated in the prior required Phase I identification study, will be researched in accordance to the Phase I requirements.

V. Human Remains

A. Within twenty-four (24) hours, DDOT shall notify DC SHPO and FHWA if human remains are discovered during implementation of the Undertaking and halt all ground-disturbing activities in the immediate area of the discovery until all of the following actions have been carried out.

B. Within twenty-four (24) hours, DDOT shall implement measures to protect the human remains from inclement weather and vandalism, and notify the District of Columbia Office of the Chief Medical Examiner (OCME) of the discovery.

C. DDOT shall provide OCME and DC SHPO with a description of the discovery sufficient to allow OCME to complete its obligations under DC Official Code §5-1406 or other applicable law.

D. If the OCME determines that the human remains are not subject to a criminal investigation by local or federal authorities, DDOT shall comply with all applicable federal and District of Columbia laws and regulations governing the discovery and disposition of human remains. If the remains are deemed a Section 106 resource, DDOT shall follow ACHP's *Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects* (2007), available at: www.achp.gov/docs/hrpolicy0207.pdf.

E. In the event that DDOT determines, after consultation as set forth in Stipulation V.F, below, that Native American human remains or funerary objects have been discovered in a parcel owned by the Federal government, DDOT shall immediately (within 24 hours) notify the appropriate federal land manager.

F. Before making any final decision regarding the treatment of human remains, DDOT shall within five (5) business days (not including a federal holiday) after discovery of such remains initiate consultation with ACHP, DC SHPO, Indian tribes (if applicable), and Consulting Parties to develop and implement treatment measures and plan in accordance with federal and District law.

VI. Reporting

In order to monitor completion of stipulations, DDOT, on behalf of FHWA will prepare annual reports which will be submitted to Signatories and Consulting Parties summarizing the actions taken to fulfill the stipulations of this MOA and incorporate the stipulations included in this MOA into the final design plans for the South Capitol Street Project. DDOT will also hold annual meetings with MOA Signatories to discuss activities carried out pursuant to this

MOA during the preceding year and activities scheduled for the coming year. Annual reports shall be distributed by DDOT at least 15 days prior to the annual meeting. The annual timeframe will commence from the execution date of this MOA. A final report describing the completion of all stipulations will also be submitted to Signatories and Consulting Parties within 3 months of the date the MOA expires.

VII. Dispute Resolution

A. Should any Signatory to this MOA object within 30 calendar days to any documentation or materials submitted for review, actions proposed, or review comments submitted pursuant to this MOA, FHWA shall consult with the objecting party(ies) to resolve the objection. If FHWA determines that the objection cannot be resolved; FHWA shall forward documentation relevant to the dispute and request the further comments of ACHP. Within 45 days after receipt of all pertinent documentation, ACHP will either provide FHWA with comments which FHWA will take into account in reaching a final decision regarding the dispute or notify FHWA that it will comment pursuant to 36 CFR 800.7(c), and proceed to comment. Any ACHP comment provided in response to such a request shall be taken into account by FHWA in accordance with 36 CFR 800.7(c) (4) with reference to the subject of the dispute. Any ACHP recommendation or comment will be understood to pertain only to the subject of the dispute; FHWA's responsibility to carry out all actions under this MOA that are not subjects of the dispute will remain unchanged. FHWA shall inform all Signatories and Consulting Parties of its final decision.

B. At any time during implementation of the measures stipulated in this MOA, should an objection to its implementation be raised by a member of the public, FHWA shall take the objection into account and consult as needed with the objecting party, DC SHPO, NPS, NCPC, ACHP and/or DDOT to resolve the objection.

VIII. Amendment

Any Signatory to this MOA may propose that it be amended, whereupon the Signatory shall consult with the other Signatories to this MOA within 30 days to consider an amendment. Any such amendment shall be effective on the date a fully executed copy is filed with ACHP.

IX. Termination

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

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

X. Monitoring

Signatories may monitor activities carried out pursuant to this MOA. FHWA will cooperate with Signatories in carrying out their monitoring and review responsibilities.

XI. Duration

The terms of this MOA shall commence on the date the last signature is affixed hereto (Effective Date), and shall expire when, the MOA is terminated, or twelve (12) years from the Effective Date of the MOA, whichever occurs first, unless the Signatories agree in writing to an extension.

XII. Personnel Qualifications

All historic properties work performed pursuant to this MOA will be carried out by or under the direct supervision of historians, architectural historians, and archeologists who meet or exceed the meet the *Secretary of the Interior's Professional Qualification Standards* set forth in 36 CFR Part 61, Appendix A.

XIII. Principles and Standards

FHWA and DDOT agree that all historic properties investigations and work performed pursuant to this MOA shall be conducted in a manner consistent with the principles and standards contained in *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR Part 68), *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (1983 and successors), *DC Historic Landmark and Historic District Protection Act* (1979, as amended), *Guidelines for Archeological Investigations in the District of Columbia* (DC Preservation League 1988), *Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites* (ACHP 1999, 64FR 27085-27087), and *DC Historic Landmark and Historic District Protection Act* (1978 as amended).

XIV. Coordination with Other Federal Reviews

In the event that DDOT or another District or Federal agency applies for additional federal funding or approvals for the South Capitol Street Project and the Undertaking remains unchanged, such funding or approving agency may comply with Section 106 by agreeing in writing to the terms of this MOA and by notifying and consulting with DC SHPO and ACHP provided that all Signatories agree. Any necessary modifications will be considered in accordance with Stipulation VIII, Amendment.

Execution of this MOA by FHWA, DC SHPO, NCPC, ACHP, and DDOT, and the submission of documentation and filing of this MOA with ACHP prior to FHWA approval of this Undertaking, and implementation of its terms, evidence that FHWA has taken into account the effects of this Undertaking on historic properties, and has afforded ACHP an opportunity to comment on the Undertaking.

SIGNATORY PAGE

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICE,
THE NATIONAL CAPITAL PLANNING COMMISSION,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION,
REGARDING
THE SOUTH CAPITOL STREET PROJECT WITHIN THE
DISTRICT OF COLUMBIA

Federal Highway Administration

By: Joseph C. Lawson

Joseph C. Lawson, District Administrator

Date: 12/6/11

SIGNATORY PAGE

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICE,
THE NATIONAL CAPITAL PLANNING COMMISSION,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION,
REGARDING
THE SOUTH CAPITOL STREET PROJECT WITHIN THE
DISTRICT OF COLUMBIA

District of Columbia State Historic Preservation Officer

By: _____
David Maloney,
District of Columbia State Historic Preservation Officer

Date: 11/30/2011

SIGNATORY PAGE

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICE,
THE NATIONAL CAPITAL PLANNING COMMISSION,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION,
REGARDING
THE SOUTH CAPITOL STREET PROJECT WITHIN THE
DISTRICT OF COLUMBIA

National Capital Planning Commission

By: _____

Marcel C. Acosta, Executive Director

Date: 12/1/11

SIGNATORY PAGE

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICE,
THE NATIONAL CAPITAL PLANNING COMMISSION,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION,
REGARDING
THE SOUTH CAPITOL STREET PROJECT WITHIN THE
DISTRICT OF COLUMBIA

Advisory Council on Historic Preservation

By: _____
John Fowler, Executive Director

Date: 12/13/4

SIGNATORY PAGE

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICE,
THE NATIONAL CAPITAL PLANNING COMMISSION,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND
THE DISTRICT DEPARTMENT OF TRANSPORTATION,
REGARDING
THE SOUTH CAPITOL STREET PROJECT WITHIN THE
DISTRICT OF COLUMBIA

District Department of Transportation (Invited Signatory)

By: _____
Terry Bellamy, Director

Date: 12/6/2011

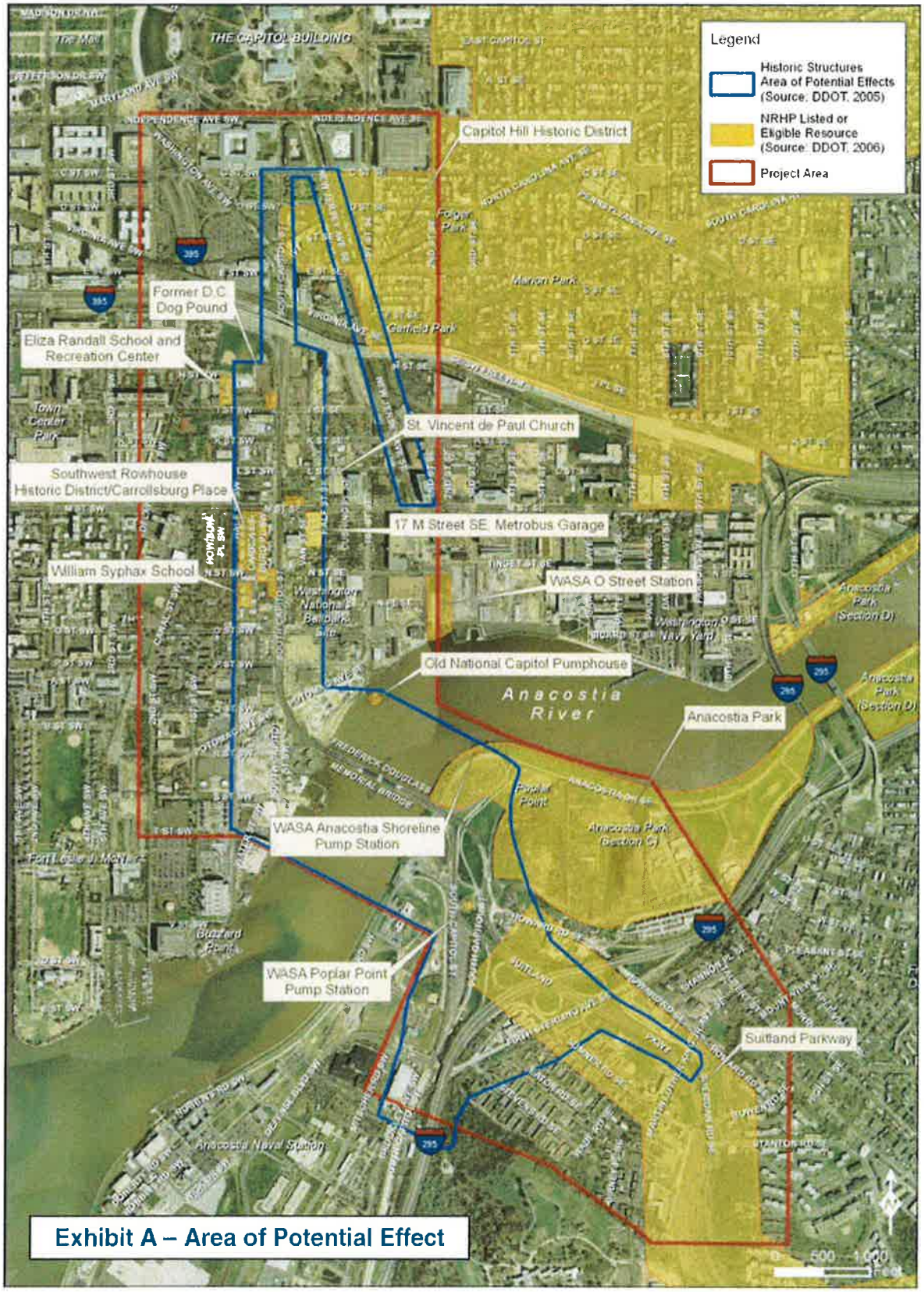
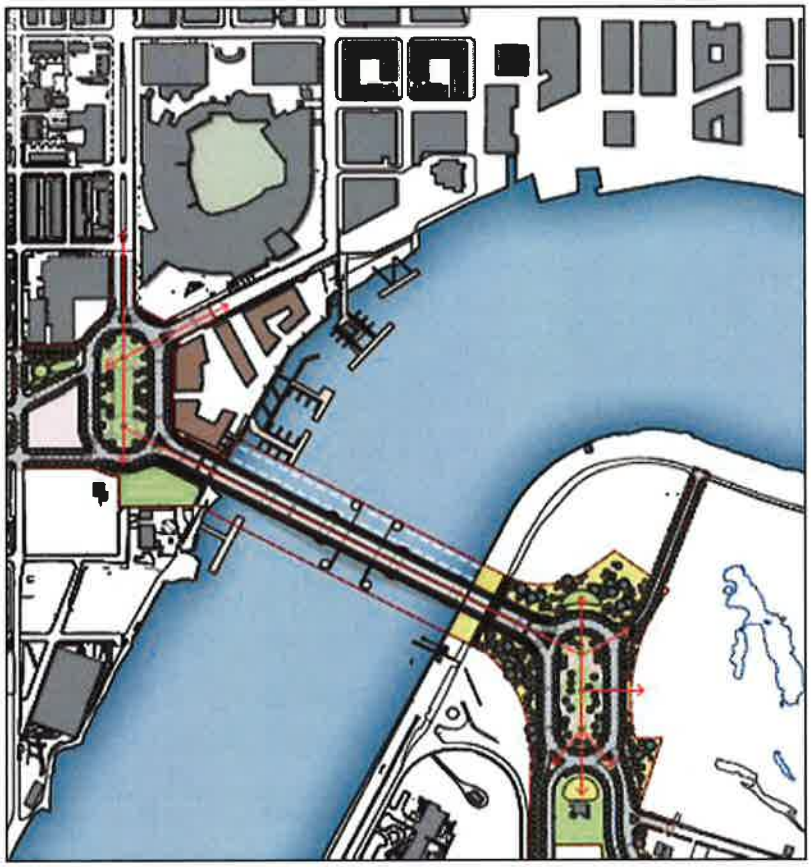


Exhibit A – Area of Potential Effect

Attachment 6: South Capitol Street Project Plan (Ovals and Bridge) Illustration



District Department of Transportation

attachment B

updated section 4(f) net benefit agreement

Government of the District of Columbia

Department of Transportation

May 28, 2015

Mr. David Maloney
State Historic Preservation Officer
District of Columbia State Historic Preservation Office
1100 4th Street SW, Suite E650
Washington, DC 20024

Subject: Proposed South Capitol Street Project, Washington, DC
Section 4(f) of the Department of Transportation Act of 1966
Net Benefit regarding the L'Enfant Plan of the City of Washington, DC

Dear Mr. Maloney:

The purpose of this letter is to document the achievement of a "Net Benefit," pursuant to the requirements of Section 4(f) of the U.S. Department of Transportation Act of 1966, to the L'Enfant Plan of the City of Washington, DC (L'Enfant Plan) as a result of incorporating provisions for the South Capitol Street Project (Project). As you are aware through continued coordination with your office, a Revised Preferred Alternative was identified in the recently released Supplemental Environmental Impact Statement (Supplemental EIS). In November 2012, the DC State Historic Preservation Officer (DC SHPO) agreed that the Preferred Alternative, as described in the Project's Final Environmental Impact Statement (FEIS), would have a Net Benefit to the L'Enfant Plan.

From the outset of the National Environmental Policy Act (NEPA) process, including consultation and coordination associated with Project compliance with Section 4(f) and Section 106 of the National Historic Preservation Act, the District Department of Transportation (DDOT) and the Federal Highway Administration (FHWA) have worked with DC SHPO to create a "win-win" solution following provisions in Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property. As defined by FHWA, a Net Benefit is achieved when the transportation use, the measures to minimize harm, and the mitigation incorporated into a project results in an overall enhancement of the Section 4(f) property when compared to both the "no-build" or avoidance alternatives and the present condition of the Section 4(f) property.

Measures to minimize harm to the L'Enfant Plan due to the Project include the redesign of the West Traffic Oval that affects the L'Enfant Plan. The redesign of the West Traffic Oval reduced the size and "footprint" of the West Traffic Oval and incorporated a connection at the oval with

R Street SW in order to maintain an uninterrupted street grid. In addition, as part of the Revised Preferred Alternative, the East Traffic Oval was redesigned to aesthetically match the West Traffic Oval in orientation and size.

FHWA and DDOT are committed to further minimizing impacts on Section 4(f) properties through additional reduction to the footprint of the Project. The impacts documented in the FEIS and Supplemental EIS reflect estimates of worst-case impacts based on a conceptual level of engineering completed for the NEPA phase of the Project. As the design process progresses, it may be possible to further reduce the footprint of the Project.

Extensive coordination with the DC SHPO staff and the Section 106 Consulting Parties (including the Advisory Council on Historic Preservation) have resulted in the following proposed measures to minimize harm and mitigation measures to be incorporated in the Project to preserve the historic characteristics of the L'Enfant Plan:

1. DDOT will continue to consult with the DC SHPO and the Consulting Parties to avoid, minimize and/or mitigate any unforeseen adverse effects associated with project implementation and modifications on the L'Enfant Plan. DDOT will submit draft plans to the DC SHPO and the Consulting Parties for review and comment. The milestones for these reviews will be determined by DDOT and will depend upon the selected design and construction approach and related factors. The DC SHPO and Consulting Parties will submit written comments on any proposed plans within thirty (30) calendar days of receipt of draft plans. DDOT will consider all comments received, respond appropriately, and incorporate feedback as feasible and appropriate.

2. DDOT will restore Reservation 245 as green space concurrent with the construction of the West Traffic Oval in consultation with the DC SHPO and in accordance with design review procedures established in Item 1 above. Reservations 243 and 244 were stipulated for restoration in the original Net Benefit Agreement but are no longer available since the property owner has proposed new uses for these areas.

3. For the East Traffic Oval, DDOT will develop a design for the area within the proposed East Traffic Oval and its environs that will preserve open space for future development in accordance with National Capital Planning Commission's (NCPC) planning and policy documents. DDOT will develop the design in consultation with the DC SHPO and the Consulting Parties in accordance with Item 1 above.

4. DDOT will develop a design for the area within the proposed West Traffic Oval and its environs that will visually maintain the original layout of the historic L'Enfant Plan right-of-way of South Capitol Street and Potomac Avenue and preserve open space for future development in accordance with NCPC's planning and policy documents. DDOT will develop the design in consultation with the DC SHPO and the Consulting Parties in accordance with Item 1 above.

5. DDOT will develop and implement an interpretive signage program focusing on the L'Enfant Plan within the project area. DDOT will develop the interpretive signage program, from scope and location to final design, in consultation with the DC SHPO and the Consulting Parties in accordance with design review procedures established in Item 1 above. The interpretive signage will be installed by DDOT by the end of the construction period.

In fulfilling the duties and obligations discussed in this letter, the DC SHPO and DDOT shall comply with all applicable laws, regulations and rules. Moreover, they acknowledge and agree that their respective obligations to fulfill financial obligations of any kind pursuant to any and all provisions discussed in this letter, or any agreement entered into by DDOT and DC SHPO subsequently or pursuant to this letter, are and shall remain subject to the provisions of (i) the federal Anti-Deficiency Act, 31 U.S.C. §§ 1341, 1342, 1349, 1351, (ii) the District of Columbia Anti-deficiency Act, DC Official Code §§ 47-355.01-355.08 (2012 Repl.), (iii) DC Official Code § 47-105 (2012 Repl.), and (iv) DC Official Code § 1-204.46 (2012 Repl.), as the foregoing statutes may be amended from time to time, regardless of whether a particular obligation has been expressly so conditioned.

This Net Benefit may be executed in counterparts, each separately and together constituting the same document. Execution of this Net Benefit by facsimile shall be sufficient for all purposes.

The signatures below document that DC SHPO and DDOT agree in the determination of a Net Benefit to the L'Enfant Plan from the Project.

Signatures Follow

South Capitol Street Project
Washington, DC
Section 4(f) of the Department of Transportation Act of 1966
Net Benefit regarding the L'Enfant Plan of the City of Washington, DC
Signatory Page

District Department of Transportation

By: _____
Leif A. Dormsjo, Director

Date: 6/11/15

South Capitol Street Project
Washington, DC
Section 4(f) of the Department of Transportation Act of 1966
Net Benefit regarding the L'Enfant Plan of the City of Washington, DC
Concurrence Page

Federal Highway Administration

By: Joseph C. Lawson
Joseph C. Lawson, Division Administrator

Date: 6/4/15

South Capitol Street Project
Washington, DC
Section 4(f) of the Department of Transportation Act of 1966
Net Benefit regarding the L'Enfant Plan of the City of Washington, DC
Signatory Page

District of Columbia State Historic Preservation Officer

By: _____
David Maloney, State Historic Preservation Officer

Date: 6/9/2015

Attachment C

south capitol street project environmental commitments

A. General Construction

DDOT and/or its construction contractor(s) shall comply with the following commitments during construction of the South Capitol Street Project:

- Construction will comply with DDOT's Standards and Specifications for Highways and Structures.
- If drilled shafts or other foundation techniques that require the removal of sediment or soil are used during construction, any potentially contaminated excavated material shall be captured for disposal. The contaminated material shall be transferred to an appropriate upland disposal site, depending on the level of contamination.
- Work within the Anacostia River (e.g., construction of piers, etc.) shall require the use of physical barriers (e.g., cofferdams) to reduce potential impacts to fish and other flora and fauna species (e.g., submerged aquatic vegetation and benthic macroinvertebrates) from construction effects, such as vibration during pile driving, and prevent or minimize riverbed sedimentation.
- The existing Frederick Douglass Memorial Bridge (FDMB) shall not be demolished by the use of explosives. The removal materials from the existing FDMB during its demolition shall be disposed of in accordance with DDOT standards and District of Columbia hazardous waste management regulations.

B. Community Outreach

DDOT shall establish a community outreach program during construction, which shall include a Project website and a field or community office accessible to members of the public (i.e.,

visitors do not require safety or personal protection equipment and clothing), including those with disabilities. The outreach program shall also include a Project email account and a telephone hotline to receive any complaints. All complaints shall be recorded, including follow-up actions by DDOT, its construction contractor, or others affiliated with the Project. The DDOT project manager (PM) or designated representative shall be available during posted office hours to receive visits by members of the public who may have questions or are requesting information.

Through this outreach program, communication, which will include website postings, email blasts, newsletters and newspaper notices, shall be used to apprise the community about the status of construction, especially if something may affect daily activities or normal events, such as a disruption in utility service, road closures or detours, and high noise producing activities.

As part of the public outreach program during construction, DDOT shall organize quarterly community meetings (minimum four times within any given 12-month period when construction is taking place) at a venue to allow any community member to voice concerns about construction activities and for DDOT and/or its construction contractor to report how previous concerns were addressed. The meetings may also be used by DDOT or its construction contractor to provide notice of upcoming construction activities.

If construction activities substantially affect public transit services (e.g., temporary reroute of a Metrobus route), DDOT shall conduct special outreach activities targeted to those who may be transit-dependent. This outreach may include, but not necessarily limited to, passing out flyers or providing briefings at schools, churches, social service agencies, neighborhood associations, transit stops, and on buses where the temporary changes would take place. Also see Section R (Transportation and Traffic).

C. Land Use

As final design progresses, DDOT shall make efforts to reduce the size of areas needed for construction as reasonably practicable. Particular attention shall be in the areas of construction affecting L'Enfant Plan streets, within Anacostia Park and along Suitland Parkway.

DDOT shall undertake the acquisition of property (temporary and permanent) needed for right-of-way in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 United States Code (U.S.C.) 61)*, as amended, as well as the *District Department of Transportation Right-of-Way Policies and Procedures Manual* as certified by the FHWA on June 9, 2011. In addition, relocation of any business shall also be in accordance with in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. 61)*, as amended, and DDOT right-of-way manual referenced above.

D. Community Cohesion and Facilities

DDOT and its construction contractor shall maintain access to community facilities throughout construction to the extent practical through controlled construction scheduling and/or

provisions of alternate entries. Also, see Section R (Transportation and Traffic) for additional information. Other measures to maintain community cohesion and access to community facilities during construction shall include as necessary:

- During construction of the various segments of the Project, DDOT shall provide, as necessary, signage for the temporary changes in access caused by construction in order to overcome way-finding issues for consumers, businesses, and motorists;
- Coordination with residents, businesses, and service providers to provide advanced notification on temporary changes in access using community outreach program (see Section B); and
- Close coordination with affected utility owners to minimize temporary service interruptions.

As part of the Selected Alternative, DDOT will provide new access into the Poplar Point section of Anacostia Park, and remove excessive roadway infrastructure both within the park and DDOT right-of-way. In addition, DDOT shall provide new Anacostia Park signage on public right-of-way, such as within the east oval, for the purpose of directing motorists to Anacostia Park. All park signage shall be made in accordance with National Park Service (NPS) standards and specifications.

DDOT shall keep Anacostia Riverwalk Trail open across the existing FDMB until the new bridge is complete and open to pedestrians and bicyclists.

E. Environmental Justice

DDOT shall establish contracting procedures for the construction of the Project in accordance with Title IV of the *National Capital Revitalization Act* and *Anacostia Waterfront Reorganization Clarification Act of 2007* (54 DCR 7390). In addition, the mitigation measures or environmental commitments noted under air quality, noise, and transportation and traffic shall be implemented to minimize construction impacts on neighborhoods located closest to the construction area.

F. Economy and Employment

During construction, DDOT and/or its construction contractor shall implement the following measures to maintain the health of the local economy:

- Maintaining access to all businesses regardless of location and time of day;
- Phasing construction activities to minimize impacts to on-street parking;
- Communicating the Project's status, upcoming construction activities and any temporary changes to the transportation network (roadways and public transit services) to businesses and residents in the Project Area (communities and neighborhoods within and adjacent to the limits of the Project), and other pertinent transportation providers (e.g., taxi, tour bus and trucking companies) through the community outreach program (see Section B);

- As noted under Section D, installing special temporary signage to alert motorists, pedestrians, and bicyclists to upcoming and existing changes in access that may affect businesses; and
- Ensuring that construction workers park in designated areas, and not in neighborhood or business parking areas.

Also see Sections B (Community Outreach) and R (Transportation and Traffic).

G. Air Quality

DDOT and its construction contractor shall comply with District of Columbia regulations, as provided in the *DC Municipal Regulations* (DCMR), regarding dust control and other air quality emission-reduction controls during construction. Adherence to these regulations includes implementation of the following mitigation measures:

- Complying with local and federal regulations for fugitive dust control and mobile-source emissions during construction (20 DCMR 605, Control of Fugitive Dust);
- Controlling the spread of hazardous materials during demolition or renovation of existing structures as applicable (see 20 DCMR 800, Control of Asbestos);
- Undertaking soil and groundwater remediation, including installation of soil vapor extraction or groundwater remediation as required (see 20 DCMR 717, Soil and Groundwater Remediation);
- Implementing best management practices to control airborne particulate matter pollutants during construction;
- Minimizing traffic disruptions, particularly during peak traffic hours, to control mobile-source emissions during construction;
- Following appropriate air quality permitting process for the installation of fuel burning equipment with heat input ratings greater than 5 MMBTU/hr, stationary generators, or other stationary air pollutant emitting equipment, including equipment that will be used for construction for a period in excess of 12 months;
- Site Preparation:
  - Minimize land disturbance,
  - Use watering trucks to minimize dust,
  - Cover trucks when hauling dirt,
  - Stabilize the surface of dirt piles if they are not removed immediately,
  - Use windbreaks to prevent accidental dust pollution,
  - Limit vehicular paths and stabilize temporary roads, and
  - Pave all unpaved construction roads and parking areas to road grade for a length no less than 50 feet from where such roads and parking areas exit the construction site to prevent dirt from washing onto paved roadways;
- Construction:
  - Cover trucks when transferring fill materials or soil, wetting materials in trucks, or providing adequate freeboard to minimize dust emissions during transportation,
  - Cover loads of hot asphalt to minimize odors,
  - Use dust suppressants on unpaved traveled paths,

  - Wash or clean trucks, including their wheels, before they leaving the construction site,
  - Pave or gravel a few hundred feet of the exit road before entering the public road (possible alternative to truck cleaning) or haul roads within the construction area,
  - Remove any dirt from the construction area deposited on any public road, sidewalk, bicycle path, or pedestrian path,
  - Use of low or ultra-low sulfur fuels for construction equipment,
  - Place stationary construction equipment and truck staging areas as far away from sensitive receptors as practical and in consideration of potential impacts to other resources,
  - Turn off engines of vehicles or equipment if idling for more than 30 minutes,
  - Use appropriate emission-control devices (catalytic converters or particulate traps) on all construction equipment powered by gasoline or diesel fuel,
  - Use relatively new, well-maintained equipment to reduce CO and NOX emissions, and
  - Plant vegetative cover on graded areas that will be left vacant for more than one season; and
- Post-Construction:
  - Re-vegetate any disturbed land not used, including all vehicular paths created during construction to avoid future off-road vehicular activities,
  - Remove unused material, and
  - Remove dirt piles.

DDOT shall require that its construction contractor develop an air quality emission control plan in accordance with the environmental commitments listed above.

H. Noise and Vibration

DDOT and its construction contractor shall comply with the District of Columbia Noise Control Act of 1977, as amended by § 2 of the Noise Control Amendment Act of 1996, and codified in DCMR Title 20 §§ 2700 et. seq. (1996). Elements of these regulations include:

- Limit noise from construction sites to 80 dBA at 25 feet from the edge of the construction area (pile driving and explosives are subject to separate rules); and
- Limit noise from construction sites to 55 dBA at 25 feet from the edge of the construction area near residential or waterfront areas at night (7:00 p.m. and 7:00 a.m.).

Other noise abatement measures shall include:

- Compliance with DDOT construction noise specifications;
- Development of a noise control plan per DDOT and FHWA requirements prior to the start of construction;
- Provide mufflers or silencers to construction equipment with internal combustion engines and maintain equipment in good repair;
- Provide advanced notification of construction-related activities, expected increases in noise levels, and minimization/abatement measures to be implemented;

- Keep the public informed when high noise producing work will be conducted using the community outreach program (see Section B);
- Limit the number and duration of idling equipment on site;
- Where possible, use suitable enclosures for all stationary site equipment and facilities that produce high noise levels;
- Construction material handled and transported in such a manner as not to create unnecessary noise;
- Minimize the use of back-up alarms if construction activities are occurring during nighttime hours; and
- When possible, schedule truck loading, unloading, and handling operations so as to minimize on-site construction noise.

The identification of specific noise abatement measures will be developed during final design of the Project.

Construction activities that cause high vibration levels (e.g., pile driving, use of vibratory rollers, etc.) shall be limited to weekdays between the hours of 7:00 a.m. to 7:00 p.m. To mitigate the effects of construction-related vibration, DDOT or its construction contractor shall use the community outreach program (see Section B) to notify nearby residents and businesses of when high vibration-producing activities will occur. The selected contractor shall also implement a monitoring program to check for vibration levels that could cause building damage.

I. Water Quality

DDOT or its construction contractor shall obtain a Nationwide Permit from the U.S. Army Corps of Engineers (USACE) in accordance with Section 404 of the Clean Water Act (CWA), 33 U.S.C. §1344, for the dredging and filling of the Anacostia Riverbed. In addition, DDOT or its construction contractor shall obtain a Water Quality Certification (WQC), 33 U.S.C. §1341, in accordance with CWA Section 401 from the Water Quality Division of the District Department of the Environment (DDOE). In addition, DDOT or its construction contractor shall obtain a Special Use Permit from the NPS to allow the construction of the piers on the riverbed that are necessary to support the new bridge. Finally, DDOT or its construction contractor shall obtain a permit from the U.S. Coast Guard (USCG) in accordance with Section 9 of the Rivers and Harbors Act, 33 U.S.C. §401. The Section 9 permit requirements include implementation of several specific measures to protect waterway users, such as advanced notification to waterway users during construction. As required by the USCG, DDOT shall coordinate with waterway users during construction.

To address potential impacts to the quality of the Anacostia River and other water resources either directly or indirectly, DDOT and/or its construction contractor shall implement the following measures:

- As noted under Section A (General Construction), construction within the Anacostia River shall require the use of physical barriers (e.g., cofferdams) as well as impervious turbidity

curtains to exclude sensitive species and to contain suspended solids when installing, operating and removing the physical barriers surrounding the construction sites within the river.

- DDOT or its construction contractor shall coordinate closely with the owners of utilities that cross or traverse the Anacostia River near existing and new bridges.
- Best Management Practices (BMPs) and currently acceptable design and construction procedures shall be used to reduce or eliminate anticipated undesirable effects resulting from construction.
- Erosion control and stormwater management shall be required during construction as required by the National Pollutant Discharge Elimination System (NPDES) permitting program.
- Construction of roadways and bridges shall adhere to District of Columbia and federal design criteria, which will provide for permanent erosion control measures and stormwater management systems.
- Construction in contaminated areas would be subject to regulatory requirements of DDOE. Dewatering activities near contaminated zones may result in the collection and discharge of contaminated groundwater. Where this occurs, treatment of the dewatering effluent may be necessary before discharge, and be subject to DDOE permitting.
- Construction shall comply with the DC Water Quality Standards for Surface Water (21 DCMR Ch.11), DC Water Management Plan per the Water Pollution Control Act of 1984 (DC Law 5-188), and Section 402 of the Clean Water Act (NPDES).
- DDOT of the construction contractor shall develop and implement spill prevention, control, and countermeasure plans; erosion and sedimentation control plans; and plans for handling and disposal of contaminated soil, groundwater and river sediment, both known and unanticipated.
- To the extent possible, the design of the Project shall include low impact development (LID) features and best management practices for stormwater management. The practicality of specific LID technologies and locations within the Project footprint shall be determined during the final design of each segment.
- Conduct pre- and post-construction water quality sampling to determine any changes to the uppermost sediment layer and address any impacts as appropriate.

J. Wetlands

During construction along Suitland Parkway, DDOT or its construction contractor shall provide a fenced buffer zone at least 25-feet from the two palustrine emergent wetlands that were

identified in a 2014 survey if required by DDOE. The USACE did not assume jurisdiction of these wetlands because they are considered to be isolated wetlands.

The 2014 survey also identified a forested wetland about 0.04 acres in size located adjacent to I-295. The USACE did not assume jurisdiction of this wetland because it is considered to be an isolated wetland. The Selected Alternative may require at least a partial filling of this wetland. DDOT or its construction contractor shall explore impact avoidance and minimization during the final design of Segment 2. A final wetland impact assessment shall be conducted at that time along with a mitigation plan if necessary in coordination with DDOE.

K. Wildlife and Habitats

During final design of each Project segment, DDOT and/or its construction contractor shall explore ways to reduce the number of specimen and special trees and forested areas displaced by the Project. Any specimen and special tree impacts shall be offset through designed landscape tree plantings within the Project Area in consulation with the DDOT Urban Forestry Administration and consistent with restoration plans for natural areas. In addition, DDOT or its construction contractor shall explore opportunies to create woodland habitat consisting of both tree and shrub species in landscape designs.

DDOT or its construction contractor shall conduct a survey of potential Migratory Bird Treaty Act protected nesting areas prior to the start of any demolition of structures (e.g., existing bridge) that may contain nests. Removal of inactive osprey and peregrine falcon nests on these structures shall only be conducted after consulting with the U.S. Fish and Wildlife Service (USFWS). DDOT or its construction contractor shall prevent any new nests from being established as reasonably practical. For occupied nests needing to be relocated, DDOT shall be required to coordinate with the USFWS in order to secure a Migratory Bird Treaty Act permit, which may require the placement of an alternative nest platform for the osprey and installation of a nest box on the new bridge structure for the peregrine falcon.

DDOT shall implement time-of-year restrictions for in-stream work to avoid impacts to anadromous fish from February 15 to June 15.

DDOT or its construction contractor shall develop techniques during final design of Segment 1 to reduce potential impacts to fish from shock waves associated with pile driving, cofferdam installation, dredging, and bridge demolition.

DDOT shall review annual submerged aquatic vegetation surveys of the Anacostia River conducted by DDOE prior to, during and after construction of the new bridge and the demolition of the old bridge to determine if construction and demolition activities on the river cause changes to the aquatic vegetation near the existing and future bridges. In addition, DDOT shall conduct pre- and post-construction surveys to determine if any changes occur to the benthic macroinvertebrate communities near the existing and new bridges as a result of construction activities associated with the demolition of the existing bridge and the construction of the new bridge.

As noted under "General Construction" and "Water Quality", work within the Anacostia River shall require the use of physical barriers (e.g., cofferdams), and include the use of impervious turbidity curtains prior to the installation of the barriers.

L. Floodplain

The design of the new FDMB and its approaches from the east and west sides of the Anacostia River shall be prepared in accordance with current drainage practices and standards to prevent adverse changes to flood elevations and not increase the size of current floodplains. DDOT and/or its construction contractor shall work with local agencies and the Federal Emergency Management Agency (FEMA), as required, to ensure Project development is conducted in accordance with local flood hazard development permit requirements, flood conveyance capacity plans, and floodplain management programs. In addition, during final designs:

- A hydrology/hydraulic analysis shall be conducted to evaluate the final design of the new bridge in terms of its effects to flood elevations on the Anacostia River.
- Construction plans shall be prepared in accordance with DC's floodplain regulations: DCMR 20, Chapter 31 – Flood Hazard Rules and flood provisions of DCMR 12 – DC Construction Codes Supplement of 2008 (or latest amendment) for development within Special Flood Hazard Areas (SFHA).
- Construction plans shall be subject to review by the DDOE Technical Service Branch and the FEMA Designated Floodplain Administrator to check for consistency with the National Flood Insurance Program and for DDOE approval of development in the SFHA in accordance with DC floodplain regulations.

M. Geology, Topography, and Soils

Implementation of temporary erosion control measures and stormwater management systems shall be conducted in accordance with the DDOT construction specifications and the requirements of the NPDES permitting program. All erosion control measures installed or implemented shall be monitored, maintained and/or revised as necessary during construction.

Implementation of permanent erosion control measures, stormwater management systems and site-specific re-vegetation plan shall be conducted in accordance with the DDOT construction specifications and other applicable regulations as required.

N. Cultural Resources

See Attachment A, Amended and Restated Section 106 Memorandum of Agreement among the Federal Highway Administration, the District of Columbia State Historic Preservation Officer, the Advisory Council on Historic Preservation and the District Department of Transportation regarding the South Capitol Street Project within the District of Columbia , which was signed in June 2015.

O. Hazardous Materials

To augment information about hazardous materials sites in the Project Area developed from Phase I Environmental Site Assessments (ESAs) prepared for the Project, DDOT or its construction contractor shall arrange the preparation of a Phase II ESA to define the types and extent of contamination at specific sites identified in the Phase I ESAs. Follow-up activities of the Project shall include:

- Development of contaminated materials management plans based on results of the Phase II ESA. The foregoing plan shall address contaminated soil, groundwater, and river sediment, including unanticipated finds, and include notification protocols, such as to DDOE, if unexpected areas of contamination are identified.
- Coordination with DDOE concerning the management of contaminated materials, which may include the excavation and transport of materials to facilities approved for proper disposal and dewatering activities near contaminated zones, in compliance with procedures and requirements specified in DDOE permits.
- Performance of dewatering activities near contaminated zones that are in compliance with the procedures and requirements specified in DDOE permits.
- Implementation of a Health and Safety Plan and Waste Management Plan addressing worker and public safety, on-site management of hazardous materials used in the construction of the Project, and disposal or handling procedures for identified hazardous materials.
- Development and implementation of spill prevention, control, and countermeasure plans.
- The contractor shall be provided with or provided references to the munitions or explosives of concern information developed by the other parties.

P. Visual

Regardless of the construction segment of the Project, DDOT shall consider visual quality when evaluating or preparing final designs. For example, in the procurement of a construction contractor for any segment of the Project in which the contractor will be responsible for preparing the final design, evaluation of proposals from “design/builder” teams shall consider the visual or aesthetic quality of the designs submitted for the bid.

DDOT may choose to use the visual quality management process described in Section 2.4 of the *Supplemental Final Environmental Impact Statement* or a similar process that includes advisory participation of staff from the National Capital Planning Commission (NCPC), the Commission on Fine Arts (CFA) and the DC State Historic Preservation Office (DC SHPO), and the preparation of a visual quality manual to assist prospective bidders.

Under the proposed terms of the Amended and Restated Section 106 MOA (see Attachment A), design plans would be subject to review by the DC SHPO and the Section 106 consulting parties. The visual impacts on important visual resources and minimization/mitigation measures shall be addressed through these reviews.

Q. Pedestrian and Bicycle Systems

During construction, DDOT or its construction contractor shall maintain pedestrian and bicycle access by providing pathways for non-motorized traffic through construction areas. A path shall be provided on at least one side of each roadway undergoing construction. Any required pedestrian and bicycle detours shall have signage in accordance with DDOT's maintenance of traffic standards.

R. Transportation and Traffic

Interstate Modification

DDOT shall complete separate Interstate Modification Reports for the proposed changes at the I-295/Suitland Parkway interchange and the I-395/South Capitol Street interchange for FHWA approval.

Construction Period

For construction, DDOT or the selected contractor shall prepare or develop a Maintenance of Traffic (MOT) plan during final design to minimize construction impacts on traffic. The MOT plan shall provide for the safe and efficient movement of people, goods, and services through and around the Project work zone, while minimizing negative impacts to residents, commuters, and businesses. The MOT shall specify a set of coordinated transportation management strategies and describe how the transportation management strategies will be used to manage the work zone traffic conditions. The strategies would be multi-faceted, and include operational, communications, and demand-management programs to maintain acceptable levels of vehicular and pedestrian/bicycle traffic flow during various phases of construction. The MOT shall also include:

- Specifying roles and responsibilities for DDOT, the contractor and other parties that may be involved in the MOT;
- Traffic control plans with staging/phasing;
- Traffic incident management plans; and
- Monitoring provisions and contingency plans.

The community outreach program (see Section B) shall be used to notify residents, businesses, and other users of the affected roadways about any changes to traffic patterns including detours as provided in the MOT plan.

Other mitigation measures to address transportation and traffic impacts during construction shall include:

- Maintain existing levels of access to Metrorail stations for all modes;
- Conduct early and sustained coordination with the Washington Metropolitan Area Transit Authority (WMATA) regarding alternative Metrobus routes and stops that may be required during construction;
- Ensure that any special outreach efforts to reach transit-dependent and other members of the public regarding changes to Metrobus routes and stops are consistent with WMATA's public information program;
- As noted in Section D, use signs and appropriate technologies to inform the traveling public about detours and road closures; and
- During construction phases, the following shall be implemented to mitigate traffic issues:
  - Maintain at least two lanes of traffic in each direction on I-295 through the Project Area,
  - Minimize temporary roadway and temporary structures required during construction;
  - Limit traffic detours through neighborhoods on both sides of the river;
  - Work with WMATA to minimize delays during construction and identify alternate routes if necessary;
  - Provide additional transit enhancements during peak traffic periods if appropriate or necessary;
  - Provide traveler information systems, including low power highway advisory radio, and appropriate technologies, including real-time message signs with alternate route suggestions;
  - Provide updated freeway guide signing within the immediate Project Area that reflects temporary access routes during the various phases of construction, and way-finding signage at freeway access points on local roads;
  - Adjust traffic signal systems and coordination as necessary; and
  - Use incident management and surveillance systems to monitor construction zones.

Post-Construction

To address potential traffic impacts due to the conversion of the existing South Capitol Street / M Street interchange into an at-grade signalized intersection, DDOT shall monitor and evaluate traffic conditions at and surrounding this intersection once every two years up to the year 2040 following complete construction of the Project. If the following traffic conditions occur, DDOT shall consider additional capital improvements:

- Substantial degradation in operational performance of the intersection, specifically in the northbound direction during morning and afternoon peak periods, and spill-back queuing from the northbound left turn lane at M Street through the intersection of N Street / South Capitol Street.

- Substantially higher rates, severity, and/or frequency of crashes at the intersection, benchmarked against crash patterns under existing conditions.

The following capital improvement options shall be considered to address the operational or safety concerns noted above:

- Option 1. Create an additional 250-foot long northbound left turn bay at the South Capitol Street / M Street intersection without increasing the proposed footprint of the intersection by eliminating a portion of the median on the south leg of the intersection.

- Option 2. Provide northbound left turn lanes at both L and K Streets. With these additional left turn bays, the signal time allocated for northbound left turns at M Street may be reduced, which would provide more green time to other movements at the intersection. However, this option would only be available if a series of long-term improvements aimed at reconnecting the Anacostia and Southwest Waterfronts through a combination of multiple local streets, including K and L Streets, are implemented as identified in the *M Street SE/SW Transportation Planning Study* (DDOT, 2012).

- Option 3. Prohibit northbound right turns at the South Capitol Street / M Street intersection during peak periods and/or special events because of conflicts with pedestrians crossing M Street SE at the intersection. Right turns would allowed at N and L Streets SE. Variable message signing would be used to alert motorists about the right turn restriction. Eliminating the conflict during peak periods would increase the capacity of the through lanes through the intersection.

- Option 4. Another option that will require more research to determine effectiveness and safety implications include the use of variable time-of-day lane use on the northbound approach. The northbound configuration of the intersection would provide for two through lanes and two left-turn lanes during periods in which left turn volume demand exceeds the capacity of a single lane. The availability of the additional left turn lane would be communicated to motorists by variable message signs. Variable traffic signals would be used to control the additional left turn lane. At all other times, the signing and signal controls would indicate one left turn lane and three through lanes for the northbound direction.

- Option 5: Intersection signal control could be augmented by traffic control officers who are able to make real time determinations in adjusting the priority of any given turn movement, intersection approach or mode based on changing operational conditions to best serve all of the modes and movements.

The improvement options listed above shall not be mutually exclusive because each individually would not comprehensively address all operational issues associated with the proposed South Capitol Street / M Street intersection and still balance competing needs and limitations. If necessary, DDOT may combine these options or consider other options to be used individually or in concert with the options listed above.

To address the potential traffic safety concerns associated with the proposed I-295 northbound off-ramp at Suitland Parkway, DDOT shall study an optional proposed signalized off-ramp

intersection at Suitland Parkway during final design of Segment 2. This option is currently not part of the Selected Alternative. The optional intersection may consist of a channelizing island at the off-ramp intersection and/or extending the center median on Suitland Parkway between the off-ramp intersection and Firth Sterling Avenue. The optional configuration of the off-ramp intersection would force motorists to either turn left or right on Suitland Parkway, and prevent motorists from proceeding straight into the northbound on-ramp.

To address the potential pedestrian/vehicle conflict at the proposed new Suitland Parkway / Howard Road SE intersection, DDOT shall study during final design of Segment 1 an optional intersection that includes a traffic signal to control the flow of vehicles and provide alternating rights-of-way for pedestrians/cyclists. This optional intersection is currently not part of the Selected Alternative. The optional intersection would provide a two-phased crossing of Howard Road SE at the intersection so the triangular pedestrian refuge island between the inbound and outbound lanes of the road would need to be of sufficient size to accommodate the expected numbers pedestrians and cyclists waiting for changes in signals.

S. Navigation

DDOT shall coordinate with the USCG to maintain river navigation under the existing and new FDMB during construction. The wide variety of marine vessels using the river requires establishing construction procedures and coordination efforts to maintain safe operations during bridge construction. DDOT shall develop specific procedures during construction to prevent construction from impeding river navigation or adversely affecting safe marine operations, and shall include the following activities:

- Properly securing all unmanned construction vessels to prevent drifting;
- Clearly demarcating all access channels and sensitive areas (i.e., prohibited areas) using secured, floating visual devices (such as buoys);
- Providing lighting on construction vehicles, cranes, barges, or other equipment stationed or operating in the Anacostia River;
- Establishing separate marine travel lanes in the upstream and downstream directions; and
- Coordinating with water users regarding waterway closures and construction equipment activities.

T. Energy

In the construction and later operation of the Project, DDOT and its construction contractor shall make an effort to conserve energy as reasonably practicable. Energy conservation may include, but not necessarily limited to, recycling pavements and other hardware items (e.g., guardrails, signals, tires, rights-of-way, etc.), using indigenous plants for landscaping, and applying BMPs in roadway maintenance. Other measures that could be applied include using high-pressure sodium vapor lamps and light-emitting diode lamps for light, and promoting the use of carpools, vanpools, buses, and bicycles.

U. Utilities

Similar to any large construction project on public roadways, temporary support of large or shallow utilities may be required. Therefore, in order to mitigate the potential for temporary utility disruptions, DDOT and/or its construction contractor shall coordinate closely with the various utility owners in the Project Area throughout the design and construction phases of the Project. Early coordination would decrease the chance of surprises during construction and would enable efficient phasing of the roadway and utility work.

THIS PAGE INTENTIONALLY LEFT BLANK.

FHWA-DC-EIS-09-01-FS

South Capitol Street
Martin Luther King, Jr. Avenue SE to Independence Avenue
Washington, District of Columbia

Supplemental Final Environmental Impact Statement/
Section 4(f) Evaluation

Submitted pursuant to 42 U.S.C. 4332 (2)(c) and, where applicable, 49 U.S.C. 303 by the
U.S. Department of Transportation Federal Highway Administration
and
District of Columbia Department of Transportation

Cooperating Agencies
District of Columbia Department of the Environment
National Capital Planning Commission
National Park Service
U.S. Army Corps of Engineers
U.S. Coast Guard
U.S. Navy

8/13/15
Date of Approval

Leif A. Dormsjo
Director
District of Columbia Department of Transportation

8/13/15
Date of Approval

Joseph C. Lawson
Division Administrator
Federal Highway Administration

The following persons may be contacted for information concerning this document:

Mr. Delmar Lytle, P.E.
Project Manager
District of Columbia
Department of Transportation
55 M Street, SE
Washington, D.C. 20003
Phone: (202) 741-5356
delmar.lytle@dc.gov

Mr. Michael Hicks
Environmental Engineer
Federal Highway Administration
District of Columbia Division
1990 K Street, Suite 510
Washington, D.C. 20006-1103
Phone: (202) 219-3513
Michael.Hicks@dot.gov

THIS PAGE INTENTIONALLY LEFT BLANK.

Contents

EXECUTIVE SUMMARY ES-1
S.1 Introduction ES-1
S.2 Purpose and Need ES-3
S.3 Revised Prefered Alternative ES-3
S.4 Alternatives ES-7
S.5 Other Governmental Projects ES-7
S.6 Areas of Controversy ES-7
S.7 Summary of Environmental Impacts ES-8
S.8 Environmental Permits and Approvals ES-16
S.9 Unresolved Issues ES-17
CHAPTER 1.0 PURPOSE AND NEED 1-1
1.1 Introduction 1-1
1.2 Background 1-4
1.2.1 South Capitol Street Corridor 1-4
1.2.2 Frederick Douglass Memorial Bridge 1-5
1.2.3 Recent Planning History 1-6
1.2.4 DEIS and FEIS NEPA Compliance 1-10
1.2.5 Supplemental DEISNEPA Process and Status 1-10
1.3 Purpose and Need 1-11
1.4 Next Steps 1-12
CHAPTER 2.0 ALTERNATIVES 2-1
2.1 No Build Alternative 2-1
2.2 Alternatives Development Process 2-1
2.2.1 Initial Alternatives Eliminated from Consideration 2-1
2.2.2 Alternatives Considered in the DEIS and FEIS 2-2
2.2.3 FEIS Preferred Alternative 2-6
2.2.4 Risks to the FEIS Preferred Alternative 2-9
2.3 Revised Preferred Alternative 2-11
2.3.1 Segment 1 2-15
2.3.2 Segment 2 2-20
2.3.3 Segment 3 2-22
2.3.4 Segment 4 2-23
2.3.5 Segment 5 2-24
2.4 Visual Quality Management Process 2-26
2.4.1 Visual Quality Framework 2-27
2.4.2 Visual Quality Considerations 2-29
2.5 Other Projects in Project Vicinity 2-30
CHAPTER 3.0 AFFECTED ENVIRONMENT 3-1
3.1 Summary of Affected Environment 3-1
3.1.1 No Substantive Changes in the Affected Environment from FEIS 3-1

3.1.2 Substantive Changes in the Affected Environment from the FEIS 3-6
3.2 Land Use 3-11
3.2.1 Existing Land Uses 3-11
3.2.2 Governmental Plans, Policies, and Controls 3-14
3.2.3 Zoning 3-16
3.3 Community Cohesion and Facilities 3-17
3.3.1 Community and Neighborhood Description 3-17
3.3.2 Housing 3-20
3.3.3 Places of Worship, Public Facilities, and Schools 3-20
3.3.4 Utilities 3-22
3.3.5 Demographics 3-24
3.4 Environmental Justice 3-29
3.4.1 Methodology 3-29
3.4.2 Census Tracts Meeting EJ Threshold Criteria 3-30
3.5 Wetlands 3-34
3.6 Threatened and Endangered Species 3-36
3.7 Floodplains 3-38
3.8 Cultural Resources 3-40
3.8.1 Section 106 Legal and Regulatory Context 3-40
3.8.2 Identification of Historic Properties 3-42
3.8.3 Built Historic Properties 3-42
3.8.4 Archaeological Resources 3-43
3.9 Hazardous Materials 3-45
3.10 Pedestrian and Bicycle Facilities 3-50
3.10.1 Pedestrian Access 3-50
3.10.2 Bicycle Access 3-50
3.11 Traffic and Transportation 3-53
3.11.1 Travel Patterns 3-53
3.11.2 Traffic Volumes 3-53
3.11.3 Intersection Level of Service Analysis 3-57
3.11.4 Other Transportation Facilities and Services 3-60
CHAPTER 4.0 ENVIRONMENTAL CONSEQUENCES 4-1
4.1 Summary of Impacts 4-1
4.1.1 *Minor Changes or No Substantive Changes in Impacts* from FEIS 4-8
4.1.2 Substantive Changes in Impacts from the FEIS 4-15
4.2 Environmental Justice 4-21
4.2.1 Environmental Consequences 4-22
4.2.2 Assessment of Potential for "Disproportionately High and Adverse Effects" on Minority and Low-Income Populations 4-30
4.2.3 Environmental Justice and the Public Involvement Process 4-31
4.3 Wetlands 4-32
4.3.1 Impacts 4-32
4.3.2 Mitigation 4-33

4.4 Noise 4-33
4.4.1 Impacts 4-33
4.4.2 Mitigation 4-34
4.5 Water Quality 4-36
4.5.1 Impacts 4-36
4.5.2 Mitigation 4-36
4.6 Wildlife and Habitats 4-36
4.6.1 Impacts 4-36
4.6.2 Mitigation 4-37
4.7 Geology, Topography and Soils 4-38
4.7.1 Impacts 4-38
4.7.2 Mitigation 4-38
4.8 Cultural Resources 4-38
4.8.1 Built Historic Properties 4-39
4.8.2 Archaeological Resources 4-49
4.8.3 Effects Summary 4-49
4.8.4 Mitigation 4-50
4.9 Visual Quality 4-50
4.9.1 Methodology 4-50
4.9.2 Potential Impacts 4-51
4.9.3 Mitigation 4-71
4.10 Pedestrian and Bicycle Facilities 4-71
4.10.1 Impacts 4-71
4.10.2 Mitigation 4-72
4.11 Traffic and Transportation 4-74
4.11.1 Traffic Forecast Methodology 4-74
4.11.2 Impacts on Travel Patterns and Volumes 4-75
4.11.3 Intersection Level of Service 4-76
4.11.4 Mitigation Measures 4-85
4.12 Other Transportation Facilities and Services 4-93
4.12.1 Water Transportation 4-93
4.12.2 Fueling Pier 4-96
4.12.3 Helicopter Service 4-96
4.12.4 Freight and Passenger Rail Service 4-97
4.13 Construction Impacts 4-97
4.13.1 Construction Phasing of the Revised Preferred Alternative 4-97
4.13.2 Community Cohesion and Facilities 4-97
4.13.3 Economy and Employment 4-98
4.13.4 Air Quality 4-99
4.13.5 Noise and Vibration 4-101
4.13.6 Water Quality and Floodplains 4-102
4.13.7 Wildlife and Habitats 4-104
4.13.8 Geology, Topography and Soils 4-105
4.13.9 Cultural Resources 4-105
4.13.10 Hazardous Materials 4-106
4.13.11 Pedestrian and Bicycle Facilities 4-106

4.13.12 Traffic and Transportation 4-107
4.14 Environmental Commitments 4-108
CHAPTER 5.0 SECTION 4(f) EVALUATION 5-1
5.1 Proposed Action 5-1
5.2 Administrative Background 5-2
5.2.1 Section 4(f) Use 5-2
5.2.2 Avoidance Alternatives and Minimization of Harm 5-3
5.2.3 Individual and Programmatic Section 4(f) Evaluations 5-4
5.3 Purpose and Need 5-6
5.4 Section 4(f) Resources 5-7
5.4.1 The L'Enfant Plan of the City of Washington, DC 5-7
5.4.2 Suitland Parkway 5-9
5.4.3 Anacostia Park 5-10
5.4.4 Other Section 4(f) Resources 5-13
5.5 Alternatives Considered 5-15
5.5.1 No Build Alternative 5-15
5.5.2 Build Alternatives 1 and 2 5-16
5.5.3 FEIS Preferred Alternative 5-17
5.5.4 Revised Preferred Alternative 5-18
5.5.5 Avoidance Alternatives 5-18
5.6 Use of the L'Enfant Plan of the City of Washington, DC 5-19
5.7 Net Benefit Applicability 5-20
5.7.1 Net Benefit Finding 5-20
5.7.2 Measures to Minimize Harm 5-20
5.7.3 Mitigation Measures and Benefits 5-21
5.7.4 Applicability 5-23
5.8 Coordination 5-24
5.9 Conclusion 5-24
CHAPTER 6.0 LIST OF PREPARERS 6-1
CHAPTER 7.0 DISTRIBUTION LIST 7-1
CHAPTER 8.0 COMMENTS AND COORDINATION 8-1
8.1 Public Coordination 8-1
8.1.1 Notice of Intent 8-1
8.1.2 Project Website 8-1
8.1.3 Project Newsletter 8-2
8.1.4 Public Meetings following the FEIS 8-2
8.2 Agency Coordination 8-2
8.2.1 Aesthetic Review Committee 8-3
8.2.2 Cooperating and Participating Agencies 8-3
8.2.3 Stakeholder and Agency Coordination 8-4
8.3 Section 106 Coordination 8-12
8.4 Supplemental Draft Environmenal Impact Statement 8-15
8.4.1 Distribution and Availability 8-15

8.4.2 Public Hearing 8-15
8.4.3 Supplemental DEIS Comments 8-15

CHAPTER 9.0 GLOSSARY 9-1

CHAPTER 10.0 ACRONYMS 10-1

CHAPTER 11.0 INDEX 11-5

CHAPTER 12.0 REFERENCES 12-1

CHAPTER 13.0 INDEX OF TECHNICAL REPORTS 13-1

Figures

Figure S-1: Project Area ES-2
Figure S-2: Design Features of the Revised Preferred Alternative ES-5
Figure 1-1: Project Area 1-2
Figure 1-2: Frederick Douglass Memorial Bridge Center Swing Spans 1-3
Figure 1-3: Historic Photograph of Washington Navy Yard and Vicinity 1-6
Figure 1-4: South Capitol Street Corridor Planning Timeline 1-7
Figure 1-5: Parcels Subject to Protective Buy in 2007 1-9
Figure 2-1: Build Alternative 1 2-3
Figure 2-2: Build Alternative 2 2-4
Figure 2-3: Design Features of the FEIS Preferred Alternative 2-8
Figure 2-4: FEIS Arched Bascule, Moveable Bridge Concept 2-9
Figure 2-5: Project Segments along the South Capitol Street Corridor 2-12
Figure 2-6: Design Features of the Revised Preferred Alternative 2-13
Figure 2-7: Revised Alignment for the New Frederick Douglass Memorial Bridge (Revised Preferred Alternative) 2-16
Figure 2-8: Conceptual Elevation of New Frederick Douglass Memorial Bridge (Revised Preferred Alternative) 2-16
Figure 2-9: Revised Configuration for West and East Traffic Ovals 2-17
Figure 2-10: Revised Cross-Section 2-18
Figure 2-11: Conceptual Landscaping Plan for the East Traffic Oval 2-19
Figure 2-12: Conceptual Landscaping Plan at Interchange of I-295 and Suitland Parkway 2-21
Figure 2-13: Existing Suitland Parkway Intersection at Firth Sterling Avenue SE 2-22
Figure 2-14: Existing South Capitol Street Intersection at I Street 2-23
Figure 2-15: New Jersey Avenue SE Looking North at E Street, SE 2-25
Figure 2-16: Proposed New Jersey Avenue SE Typical Section between M Street SE and I-695 2-25
Figure 2-17: Proposed New Jersey Avenue SE Typical Section between E and D Streets SE 2-26
Figure 2-18: Northern View from Terminus of South Capitol Street on West Traffic Oval 2-29
Figure 3-1: Example of Recent Development along South Capitol Street Corridor 3-11
Figure 3-2: Existing Land Use 3-13
Figure 3-3: Census Tracts in the Project Area 3-19
Figure 3-4: Community Facilities 3-21
Figure 3-5: Blue Plains and Anacostia Tunnels 3-23
Figure 3-6: 2010 Census Block Groups in Project Area with Population Change 3-25

Figure 3-7: EJ and Non-EJ Areas within the Project Area....3-31
Figure 3-8: Delineated Wetlands (2014)....3-35
Figure 3-9: Existing Floodplains....3-39
Figure 3-10: Area of Potential Effects for the Revised Preferred Alternative....3-41
Figure 3-11: Existing Bicycle Facilities....3-52
Figure 3-12: Roadway Network Functional Classification....3-54
Figure 3-13: Project Area Existing Intersections for Traffic Analysis....3-58
Figure 3-14: Existing Transit Facilities (Metrorail, Metrobus, and DC Circulator Routes)....3-61
Figure 3-15: DS Barry Berthed at Washington Navy Yard....3-67
Figure 4-1: Noise Receptors in Relation to Environmental Justice Communities....4-23
Figure 4-2: HAZMAT Sites in Relation to Environmental Justice Populations....4-25
Figure 4-3: Intersections Analyzed in Relation to Environmental Justice Communities....4-27
Figure 4-4: View From South Capitol Street on the West End of the Existing Bridge....4-53
Figure 4-5: Conceptual Plan for the West Traffic Oval....4-54
Figure 4-6: View from South Capitol Street Directly South of the M Street Intersection....4-55
Figure 4-7: View from South Capitol Street North of M Street Intersection....4-56
Figure 4-8: View From Frederick Douglas Memorial Bridge....4-58
Figure 4-9: Conceptual Design Plan of the New Frederick Douglass Memorial Bridge....4-60
Figure 4-10: Visualization of Haunched Conceptual Design of the the New Frederick Douglass Memorial Bridge....4-61
Figure 4-11: View from Poplar Point Pump Station Property Located Between South Capitol Street and Suitland Parkway....4-62
Figure 4-12: Conceptual Plan of the East Traffic Oval....4-63
Figure 4-13: Visualization of East Traffic Oval and Approaches from South Capitol Street and Suitland Parkway....4-64
Figure 4-14: View from Suitland Parkway....4-65
Figure 4-15: View from Howard Road SE Between Howard Road SE and Suitland Parkway....4-67
Figure 4-16: View of Frederick Douglass Memorial Bridge from Anacostia Park....4-68
Figure 4-17: View From New Jersey Avenue SE....4-70
Figure 4-18: Bike and Pedestrian Facilities at Proposed Traffic Ovals and Suitland Parkway/ I-695 Interchange....4-72
Figure 4-19: Project Area Intersections for Traffic Analysis....4-78
Figure 4-20: Revised Preferred Alternative South Capitol Street / M Street Intersection....4-86
Figure 4-21: South Capitol Street / M Street Intersection Option 1....4-88
Figure 4-22: South Capitol Street / M Street Intersection Option 2....4-89
Figure 4-23: South Capitol Street/M Street Intersection Option 3....4-90
Figure 4-24: I-295 NB Ramps at Suitland Parkway....4-92
Figure 4-25: Suitland Parkway/Suitland Parkway Trail at Howard Road SE....4-93
Figure 5-1: Section 4(f) Properties In and Around the Project Area....5-8
Figure 5-2: Plan View of East Oval and New Anacostia Drive Connector....5-11
Figure 5-3: Proposed Typical Section of New Anacostia Drive Connector and Shared-Use Paths....5-12

Tables

Table S-1: Environmental Impacts of the FEIS Preferred Alternative and Revised Preferred Alternative ES-9
Table 3-1: Developments Completed in Project Area since 2009 - West of Anacostia River 3-12
Table 3-2: Developments Completed in Project Area since 2009 - East of Anacostia River 3-12
Table 3-3: 2010 Amendments to the Comprehensive Plan Relevant to the Project Area 3-15
Table 3-4: Updates in Zoning in Project Area since the FEIS 3-16
Table 3-5: Tenure of Total Population in Occupied Housing Units by Census Tract 3-18
Table 3-6: Comparison of Year 2000 and 2010 Populations by Block Group 3-26
Table 3-7: U.S. Census 2010 Population by Race and Hispanic Origins 3-27
Table 3-8: U.S. Census 2010 Population by Age 3-27
Table 3-9: U.S. Census 2010 Income and Poverty Levels 3-28
Table 3-10: U.S. Census 2010 Housing Value/Homeownership Rate 3-28
Table 3-11: Environmental Justice Populations 3-32
Table 3-12: Minority Population 3-32
Table 3-13: Census Tracts Meeting Environmental Justice Thresholds 3-33
Table 3-14: Properties of Concern 3-46
Table 3-15: Existing Daily Traffic Volumes in the Project Area (2010) 3-55
Table 3-16: Existing Peak Hour Traffic Volumes in the Project Area (2010) 3-56
Table 3-17: Traffic Operations at Existing Intersections (2010) 3-59
Table 3-18: Metrorail Ridership of Stations in the Project Area 3-60
Table 3-19: Metrobus Service in the Project Area 3-63
Table 3-20: Existing Vessel Population Transiting the Frederick Douglass Memorial Bridge 3-66
Table 4-1: Environmental Impacts of the FEIS Preferred Alternative and Revised Preferred Alternative 4-2
Table 4-2: Morning and Evening Level of Service (LOS) at Project Area Intersections in Low Income and Minority Population Areas 4-28
Table 4-3: Updated Noise Analysis Results 4-33
Table 4-4: Eligible/Listed/NHL Historic Properties in the Revised Area of Potential Effects with Effects Assessments 4-40
Table 4-5: Summary of Visual Quality Evaluation 4-52
Table 4-6: Visual Quality Evaluation, Landscape Unit #1, Subarea #1 4-52
Table 4-7: Visual Quality Evaluation, Landscape Unit #1, Subarea #2 4-54
Table 4-8: Visual Quality Evaluation, Landscape Unit #1, Subarea #3 4-56
Table 4-9: Visual Quality Evaluation, Landscape Unit #2 4-57
Table 4-10: Visual Quality Evaluation, Landscape Unit #3 4-62
Table 4-11: Visual Quality Evaluation, Landscape Unit #4 4-65
Table 4-12: Visual Quality Evaluation, Landscape Unit #6 4-67
Table 4-13: Visual Quality Evaluation, Landscape Unit #7 4-68
Table 4-14: Visual Quality Evaluation, Landscape Unit #8 4-70
Table 4-15: Pedestrian and Bicycle Facilities Design Differences between the FEIS Preferred Alternative and the Revised Preferred Alternative 4-73
Table 4-16: Comparison of 2040 Average Peak Hour Traffic Volumes 4-77
Table 4-17: 2020 Average Delay per Vehicle and Level of Service (LOS) at Project Area Intersections 4-79

Table 4-18: 2040 Average Delay per Vehicle and Level of Service (LOS) at Project Area Intersections 4-80
Table 4-19: Existing Vessels Impacted by the Proposed Clearance 4-94
Table 4-20: Environmental Commitments for Mitigation of the Revised Preferred Alternative 4-109
Table 8-1: Aesthetic Review Committee Meetings 8-3
Table 8-2: Cooperating and Participating Agencies 8-4
Table 8-3: Interagency Coordination 8-5

Appendices

APPENDIX A – ANACOSTIA RIVER NAVIGATION EVALUATION FINAL REPORT
APPENDIX B – FEDERAL NOTICES
APPENDIX C – AIR QUALITY TECHNICAL REPORT
APPENDIX D – NOISE TECHNICAL REPORT
APPENDIX E – SUPPLEMENTAL NATURAL RESOURCES TECHNICAL REPORT
APPENDIX F – BIOLOGICAL ASSESSMENT OF IMPACTS TO THE ATLANTIC STURGEON
APPENDIX G – SECTION 106 EFFECTS ASSESSMENT REPORT AND AMENDED AND RESTATED MOA
APPENDIX H – MODIFIED PHASE I ENVIRONMENTAL SITE ASSESSMENT
APPENDIX I – TRANSPORTATION TRAFFIC REPORT
APPENDIX J – 2011 - 2013 CRASH SUMMARY STATISTICS FOR SELECTED FREEWAY SEGMENTS IN THE DISTRICT OF COLUMBIA
APPENDIX K – CORRESPONDENCE
APPENDIX L – ENVIRONMENTAL JUSTICE NOISE TABLE
APPENDIX M – COMMENTS AND RESPONSES TO THE FEIS
APPENDIX N – COMMENTS TO THE SUPPLEMENTAL DEIS AND RESPONSES

executive summary

S.1 Introduction

In March 2011, the Federal Highway Administration (FHWA) and the District Department of Transportation (DDOT) approved release of the Final Environmental Impact Statement (FEIS) prepared in accordance with the National Environmental Policy Act (NEPA), as amended, for the South Capitol Street Project (the Project). The Project proposes to make major changes to the South Capitol Street area from Independence Avenue on the north end to Suitland Parkway at Martin Luther King, Jr. Avenue SE on the southeast end. The Project Area also includes New Jersey Avenue SE between M Street SE and Independence Avenue and the existing Frederick Douglass Memorial Bridge over the Anacostia River (see Figure S-1).The Notice of Availability of the FEIS was published in the April 8, 2011 edition of the *Federal Register*. However, a NEPA Record of Decision (ROD) was not issued by FHWA.

Since publication of the FEIS, DDOT proposed major changes to the design of the Project's Preferred Alternative as described in the FEIS. Most notably, DDOT reconsidered the need to obtain right-of-way within the northernmost portion of the Joint Base Anacostia-Bolling (JBAB). This decision resulted in changing the alignment of the proposed new Frederick Douglass Memorial Bridge to a location immediately south of and parallel to the existing bridge. In addition, new information about current and planned navigation along the Anacostia River, including the navigation requirements of the U.S. Navy (USN), led to the decision to make the new bridge a fixed span structure. The existing bridge is movable, allowing vessels with heights greater than the allowable vertical clearance underneath the bridge to pass through. Other notable design revisions made to the FEIS Preferred Alternative include the conversion of the east side traffic circle to a traffic oval similar in size to the proposed west traffic oval, and changes to the proposed ramps or ramp modifications between South Capitol Street and I-695, Suitland Parkway and I-295, and Martin Luther King, Jr. Avenue SE and Suitland Parkway.

Due to these design changes, a new alternative was developed. This new alternative was named the Revised Preferred Alternative since the FEIS identified a Preferred Alternative, and the design changes noted above are modifications to the FEIS Preferred Alternative. The Revised Preferred Alternative was not previously considered in the FEIS. The changes noted above are not considered minor revisions to the Project; therefore, a Supplemental Draft Environmental Impact Statement (DEIS) was prepared prior to this Supplemental FEIS. The Supplemental DEIS was prepared due to proposed changes to the FEIS Preferred Alternative. Those proposed changes resulted in development of a new alternative (Revised Preferred Alternative). This Supplemental FEIS evaluates the environmental impacts of the Revised Preferred Alternative. The Supplemental DEIS was subject to agency and public review during a 45-day comment period.

Figure S-1: Project Area

District Department of Transportation

DDOT and FHWA serve respectively as the Applicant and Lead Federal Agency regarding compliance with FHWA's implementing regulations of NEPA. The USN, U.S. Army Corps of Engineers (USACE), U.S. Coast Guard (USCG), National Capital Planning Commission (NCPC), National Park Service (NPS) and District of Columbia Department of the Environment (DDOE) are all continuing to serve as cooperating agencies for the Project.

S.2 Purpose and Need

The purpose and need for the Project include the following and remain the same as described in the FEIS (see Section 1.4 of the FEIS). In summary, the purpose of the South Capitol Street Project is to improve safety, multimodal mobility and accessibility, and support economic development. The Project would transform the existing corridor into an urban gateway to the U.S. Capitol and District of Columbia's Monumental Core. Transportation improvements were identified to incorporate long-term environmental sustainability and context sensitive design. Specifically, the project addresses the following needs:

- Safety: The design and deteriorating condition of the transportation infrastructure in the corridor results in poor safety conditions for motorists, bicyclists, pedestrians, and transit riders. For instance, because of the age of the bridge it has been posted to restrict truck traffic to the center lane of the westbound roadway and to the left lane of the eastbound roadway. As an interim solution, repairs have been made to the bridge to address the immediate structural deficiencies; however, replacement of the bridge is necessary to address long term structural needs and safety issues.
- Mobility: The lack of critical regional roadway connections and facilities for bicyclists and pedestrians support the need to improve mobility in the South Capitol Street Corridor.
- Accessibility: Several key destinations in or adjacent to the corridor are difficult to reach using the existing transportation infrastructure. Grade separations, median barriers, and ramp and intersection configurations limit access to activity centers for motorists, bicyclists, pedestrians, and transit riders.
- Economic Development: The density of employment and residential development forecasted for the area highlights the need to support economic growth. Public investments have increased employment and will stimulate additional private investment in new residential, office, and retail developments. As economic development continues to occur within the Project Area, additional demand will continue to be placed on transportation infrastructure to meet future transportation needs.

S.3 Revised Prefered Alternative

The major elements of the FEIS Preferred Alternative include the following (see Section 2.2 of the FEIS):

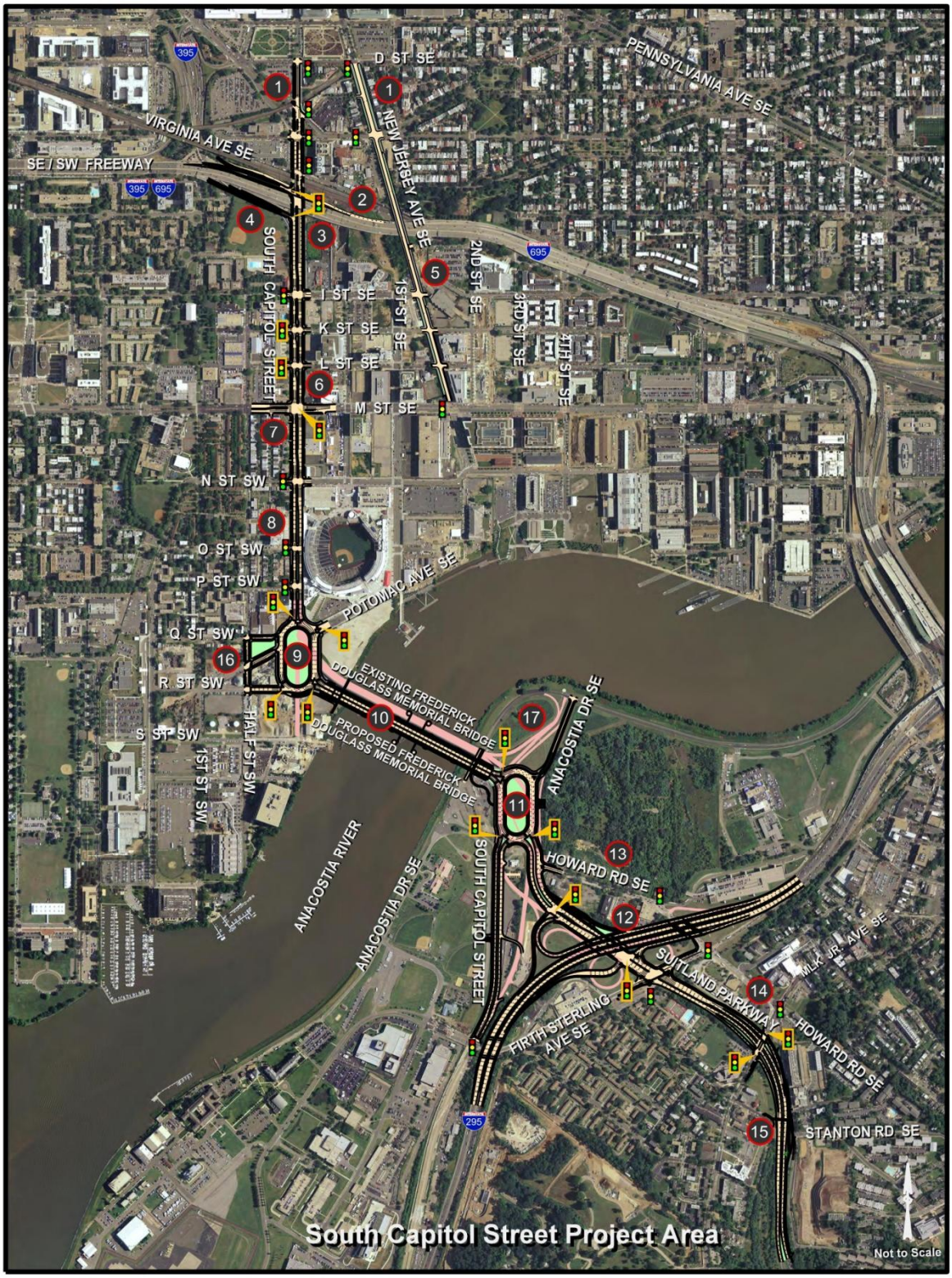
- New Frederick Douglass Memorial Bridge across the Anacostia River and removal of existing bridge
- A traffic oval at the western approach to the new bridge and a traffic circle at the eastern approach to the new bridge

- Conversion of South Capitol Street to an urban gateway that accommodates multimodal transportation, which includes converting the grade-separated intersection with M Street into an at-grade intersection
- Streetscape design features along South Capitol Street and New Jersey Avenue SE, such as widened sidewalks and curbside lanes, and the provision of street trees, benches, and decorative streetlights
- Improved connections between I-695 and South Capitol Street and between I-295 and Suitland Parkway
- New interchange at the Suitland Parkway and Martin Luther King, Jr. Avenue SE bridge overpass

Following approval of the FEIS, design changes were made to the FEIS Preferred Alternative, resulting in the development of a Revised Preferred Alternative (see Figure S-2). The major elements of these design changes include:

- The alignment for the new Frederick Douglass Memorial Bridge was shifted parallel to and directly adjacent to the south side or downstream from the existing bridge superstructure. This bridge alignment would avoid the need to obtain right-of-way from the Joint Base Anacostia-Bolling (JBAB). In addition, the bridge would have a fixed span, not a moveable span as proposed in FEIS Preferred Alternative.
- The size of the traffic oval on the western approach to the new bridge was slightly reduced.
- At the eastern approach to the new bridge, a traffic oval, similar in size and shape to the west traffic oval, replaced the traffic circle. The east traffic oval will be located entirely within the existing DDOT right-of-way. Similar to the previously proposed traffic circle, the oval will still provide connections to the realigned South Capitol Street and Suitland Parkway. The east traffic oval will not provide a direct connection with Howard Road SE, but will provide a direct roadway connection with the Poplar Point section of Anacostia Park, including its shared-use paths.
- At the I-695/Suitland Parkway interchange, the grade of Ramp B (southbound I-295 to westbound Howard Road SE) was adjusted to be 6.5 percent from 9 percent, which would have been substandard for an interstate highway ramp.
- Replaced a portion of the I-295 Bridge over Firth Sterling Avenue SE and an inactive railroad right-of-way.
- At the Martin Luther King Jr. Avenue SE overpass at Suitland Parkway, the proposed ramps would be configured into an urban diamond interchange, instead of an interchange with center ramps.
- The eastbound I-695 ramp to southbound South Capitol Street was changed to an urban interchange ramp with South Capitol Street.

Figure S-2: Design Features of the Revised Preferred Alternative



LEGEND

- Proposed Pavement
- Proposed Green Space
- Proposed Sidewalk / Median
- Existing Elements to be Removed / Demolished
- Existing Traffic Signal
- Proposed Traffic Signal

1. Add pedestrian amenities and enhance streetscape along South Capitol Street north of I Street and along New Jersey Avenue SE north of SE/SW Freeway.
2. Restripe SE/SW Freeway westbound and close the outer most thru lane between exit and entrance ramps (to/from South Capitol Street). Restripe the existing exit ramp from single-lane to two-lane ramp without pavement widening.
3. Replace existing suspended ramp (north bound South Capitol Street to SE/SW Freeway) with at-grade intersection and new ramp.
4. Realign two existing ramps as compact diamond configuration (from SE/SW Freeway to southbound South Capitol Street, right turn only). Reconstruct sidewalk along South Capitol Street and replace pedestrian underpass with at-grade crossing.
5. Restore full 160' right-of-way and enhance streetscape along New Jersey Avenue SE south of SE/SW Freeway.
6. Reconstruct South Capitol Street as urban boulevard between SE/SW Freeway and just south of N Street. Open intersections of South Capitol Street with K Street and I Street to cross traffic and signalize.
7. Construct at-grade intersection at South Capitol Street and M Street and reconstruct M Street from Half Street SW to just east of Half Street SE.
8. Urban boulevard at South Capitol Street and at-grade intersections at O Street and P Street were constructed as part of South Capitol Street near-term improvement project. Resurface pavement, improve pedestrian amenities and enhance streetscape.
9. Construct (west) traffic oval at South Capitol Street, Potomac Avenue, Q Street SW, R Street SW, and new Frederick Douglass Memorial Bridge (FDMB).
10. Replace existing FDMB with new six-lane bridge including multi-use trails, and demolish existing bridge.
11. Construct (east) traffic oval at South Capitol Street, Suitland Parkway, new Anacostia Drive and new FDMB. Remove existing ramps leading to/from existing FDMB. Reconstruct South Capitol Street from east oval to Firth Sterling Avenue SE. Provide access to DC Water new poplar point pump station. Preserve existing pump station house.
12. Replace existing Suitland Parkway and I-295 interchange with modified diamond interchange, including reconstruction of I-295 bridges over Suitland Parkway, Firth Sterling Avenue, and Howard Road SE. Remove existing ramps to/from I-295. Reconstruct Suitland Parkway from Firth Sterling Avenue SE to east oval. Reconstruct Firth Sterling Avenue SE from Suitland Parkway to Howard Road SE.
13. Construct new and improved pedestrian/bike connections throughout the project area including a new pedestrian/bike path along Suitland Parkway connecting Firth Sterling Avenue and the east oval
14. Construct compact diamond interchange at Suitland Parkway and Martin Luther King (MLK) Jr. Avenue SE. Preserve existing MLK bridge over Suitland Parkway. Reconstruct Suitland Parkway from south of Stanton Road SE to Firth Sterling Avenue SE and remove existing ramps from Stanton Road SE to Sheridan Road SE.
15. Reconstruct pedestrian bridge over Suitland Parkway.
16. Restore and enhance landscape at U.S. Reservation 245.
17. Reconstruct existing one-way driveway to Anacostia Park into a two-way access driveway with two shared-use bike and pedestrian paths. Unneeded access roads within both the park and public right-of-way will be removed and converted into green space.

Revised Preferred Alternative Design Features

S.4 Alternatives

As stated in the FEIS (see Section 2.4 of the FEIS), a wide range of alternatives were considered and evaluated, including a Transportation System Management (TSM) Alternative, a Mass Transit Alternative, Improvements to Bicycle and Pedestrian Facilities, and Improvements of Existing Roadway Facilities. None of these alternatives were found to meet the Project's purpose and need and were dismissed from further consideration as stand-alone alternatives before publication of the Project's Draft Environmental Impact Statement (DEIS).

The alternatives examined in detail in both the DEIS and FEIS included a No Build Alternative and Build Alternatives 1 and 2. The No Build Alternative would not contain new major construction resulting from the Project, although other planned and committed projects in the area would move forward. Improvements implemented under the No Build would be limited to short-term restoration and maintenance of existing infrastructure. Build Alternatives 1 and 2 were considered in the FEIS but neither was identified as the Preferred Alternative. Therefore, they were not considered in the Supplemental DEIS and this Supplemental FEIS (see Section 2.2 of the FEIS).

The FEIS introduced a Preferred Alternative, which was a modification or refinement of Build Alternative 2 in response to agency and public comments. A bridge type was selected (arched bascule), and the alignment of the new bridge shifted slightly to reduce the amount of right-of-way needed from Joint Base Anacostia-Bolling (JBAB). As noted in Section S.3 of this document, the Revised Preferred Alternative is the FEIS Preferred Alternative with design changes. No other build alternative is considered in this document because all other build alternatives were eliminated from consideration in previous documents (DEIS and FEIS). The supplemental documentation was prepared due to the design changes made to the FEIS Preferred Alternative.

S.5 Other Governmental Projects

The following major governmental projects are underway or are proposed within or near the Project Area:

- DC Streetcar – Anacostia Initial Line
- Martin Luther King, Jr. Avenue Great Streets
- 11th Street Bridges Project (Phase I and II)
- Anacostia Riverwalk Trail
- Water Coach/Taxi
- DC United Soccer Stadium
- Anacostia Waterfront Initiative: Transportation Master Plan – 2014 Update
- Firth Sterling Trail

S.6 Areas of Controversy

Throughout the development of the Project, numerous public meetings and outreach activities were held with various agencies, groups, and organizations. These activities have focused on a

variety of issues primarily concerning design development and the coordination of projects that are in the planning and/or construction phase within the Project Area or adjacent to the Project Area. Although no one specific issue has been identified as a source of controversy, the proposed design of the new Frederick Douglass Memorial Bridge (FDMB) and traffic ovals, in particular their future visual appearance to both those who use (e.g., motorists) and can view these elements (e.g., those walking along the riverfront), generated discussion among agencies and the public.

In response to concerns from the U.S. Commission of Fine Arts (CFA) and NCPC about the visual quality of the FDMB and traffic ovals, DDOT agreed to institute a visual quality management process for the Project. This will include the identification of visual quality design goals, and a framework for approaching the visual quality and aesthetic design of the Project. These goals, which will apply to the entire Project, reflect the vision to provide a grand urban boulevard, a gateway into the nation's capital, an iconic symbol of the District's aspirations in the 21st century, and to support the revitalization of local neighborhoods and the rebirth of the Anacostia Waterfront.

S.7 Summary of Environmental Impacts

FHWA's implementing NEPA regulations state: "An EIS shall be supplemented whenever FHWA determines that: changes to the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or new information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS." The Project's FEIS was dated March 2011. As noted in Section S.4, the supplemental documentation was prepared due to the design changes made to the FEIS Preferred Alternative that resulted in the Revised Preferred Alternative. The supplemental documentation addresses and analyzes new information and circumstances relevant to the environmental impacts and concerns resulting from the Revised Preferred Alternative. If an impact from the Revised Preferred Alternative is determined to be adverse, mitigation measures are required and will be provided. Otherwise, those mitigation measures proposed in the FEIS for the FEIS Preferred Alternative remain applicable.

Table S-1 provides a summary of the environmental impacts of the Revised Preferred Alternative, organized by topic as provided in the FEIS. As a point of comparison, a summary of the environmental impacts of the FEIS Preferred Alternative is also provided. Any differences in the environmental impacts between the FEIS Preferred Alternative and the Revised Preferred Alternative are noted.

Table S-1: Environmental Impacts of the FEIS Preferred Alternative and Revised Preferred Alternative

Environmental Topic/Measure	Impact Summary	
	FEIS Preferred Alternative	Revised Preferred Alternative
Land Use		
Acres of Additional Right-of-Way Needed	12.4	3.1
Business Displacements	5	2
Residential Displacements	0	0
Community Cohesion and Facilities		
Social Conditions	Beneficial to overall social activities and connections	Beneficial to overall social activities and connections
Physical Conditions	Minor changes, except for the need to acquire land from the JBAB	Fewer changes because right-of-way not required from the JBAB
Visual Environment	Beneficial to visual environment	More beneficial visual effects because right-of-way from the JBAB is not needed
Economic Conditions	Supports ongoing economic development activities	Supports ongoing economic development activities
Public Services and Facilities	No adverse impact to emergency response services, and improves access to public facilities; District commercial drivers training lot reduced in size and may be used for construction staging	No adverse impact to emergency response services, and improves access to public facilities
Safety	Project components designed to improve traffic safety and the safety of pedestrians and cyclists	Project components designed to improve traffic safety and the safety of pedestrians and cyclists
Environmental Justice		
Disproportionately High and Adverse Impacts to Minority or Low-Income Populations	No	No
Public Involvement Conducted to Reach and Solicit Input from Minority or Low-Income Populations	Yes	Yes
Economy and Employment		
Long-Term Economic Conditions	Positive economic influence to nearby residential, office and institutional developments	Positive economic influence to nearby residential, office and institutional developments

Table S-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

Environmental Topic/Measure	Impact Summary	
	FEIS Preferred Alternative	Revised Preferred Alternative
Air Quality		
Conformity with State Implementation Plan	Yes	Yes
Impact to Regional Pollutant Burdens	Slight increase, but immeasurable on a regional scale	Slight increase, but immeasurable on a regional scale
Greenhouse Gas Levels	No measurable change to greenhouse gas levels	No measurable change to greenhouse gas levels
Air Quality Concern for Particulate Matter	None; no requirement for hot-spot analysis	None; no requirement for hot-spot analysis
Number of Intersections Predicted to Exceed the National Ambient Air Quality Standards (NAAQS) for Carbon Monoxide	0	0
Noise		
Number of Noise Sensitive Receptors Predicted to Approach or Exceed FHWA Noise Abatement Criteria	12 of 14 sites analyzed	6 of 12 sites analyzed (not directly comparable to FEIS results See Section 4.4)
Number of Noise Barriers Recommended for Further Study	0	0
Water Quality		
Foundation Area in Contact with the Riverbed	11,884 sq ft	20,368 sq ft
Acres of Impervious Surfaces	Existing is 76.0 acres and proposed is 74.5 acres	Existing is 67.3 acres and proposed is 68.0 acres. (Existing differs from FEIS due to different project limits and area of calculation)
Quality of Surface and Groundwater Resources	Improved due to the provision of better stormwater management systems.	Improved due to the provision of better stormwater management systems.
Wetlands		
Total Acres of Permanent Wetland Impacts	0	0.04 (isolated wetlands)

Table S-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

Environmental Topic/Measure	Impact Summary	
	FEIS Preferred Alternative	Revised Preferred Alternative
Wildlife and Habitats		
Acreage Impacts to Wooded Areas	0.1-acre (between Howard Road and Suitland Parkway)	2.1 acres (along the south and west side of Anacostia Park)
Number of Specimen Trees Displaced	3 trees (along South Capitol Street)	42 trees (potential displacements based on new limits of disturbance for this alternative)
Section 7 Determination	"Not likely to adversely affect" determination for the shortnose sturgeon	"Not likely to adversely affect" determination by FHWA for the Atlantic and the shortnose sturgeons. However, National Marine Fisheries Service (NMFS) has concluded that no federally listed or proposed threatened or endangered species under their jurisdiction exist In the vicinity of the proposed Project.
Floodplains		
Total Number of Bridge Piers	4	6
Number of Bridge Piers in the Water	3	4
Number of Bridge Piers in the Floodplain	1	2
Predicted Effect of New Bridge on Flood Levels on the Anacostia River Compared with Existing Bridge During Storm Event	Little to no variation (at most a 0.02-foot increase for selected storm events) in flood water levels	No increase in water surface elevation and a maximum decrease of 0.02 feet for the 100-year water surface elevations upstream of the proposed bridge crossing
Geology, Topography and Soils		
Notable Changes to Site Topography	Northern edge of east traffic circle would be 15 feet higher than existing ground level; southern edge of traffic oval at western approach to the new bridge would be 22 feet higher than existing ground level	East traffic oval has grades with slightly higher elevations to enhance gateway views from the perspective of motorists. Revised Suitland Parkway/Martin Luther King, Jr. Avenue SE interchange better maintains existing topography of the parkway
Erosion Potential	Minimal	Minimal

Table S-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

Environmental Topic/Measure	Impact Summary	
	FEIS Preferred Alternative	Revised Preferred Alternative
Cultural Resources		
Number of Adverse Effect Determinations in Accordance with Section 106 of the National Historic Preservation Act (NHPA) (Historic Architectural Resources)	2 (the L'Enfant Plan and Suitland Parkway)	1 (the L'Enfant Plan)
Number of Adverse Effect determinations in accordance with NHPA Section 106 (Archaeological Resources)	0	0
Hazardous Materials		
Number of Hazardous Materials Sites of Potential Concern near the Construction Area	19	10
Visual Quality		
Landscape Unit #1, Subarea 1: South Capitol Street Bridge to M Street	A Visual Quality Difference (VQD) of 5 from existing conditions	A Visual Quality Difference (VQD) of 5 from existing conditions
Landscape Unit #1, Subarea 2: South Capitol Street, M Street	5 VQD from existing conditions	5 VQD from existing conditions
Landscape Unit #1, Subarea 3: South Capitol Street, North of M Street	4.3 VQD from existing conditions	4.7 VQD from existing conditions
Landscape Unit #2: Frederick Douglass Memorial Bridge	6.17 VQD from existing conditions	Same as FEIS Preferred Alternative
Landscape Unit #3, South Capitol Street SE	5.7 VQD from existing conditions	6.3 VQD from existing conditions
Landscape Unit #4, Suitland Parkway	3.3 VQD from existing conditions	4.0 VQD from existing conditions
Landscape Unit #5, Howard Road SE	No VQD from existing conditions	No VQD from existing conditions
Landscape Unit #6, Martin Luther King, Jr. Avenue SE	Minus 0.7 VQD from existing conditions	No VQD from existing conditions
Landscape Unit #7, Anacostia Park	3.7 VQD from existing conditions	3.7 VQD from existing conditions
Landscape Unit #8, New Jersey Avenue SE	0.3 VQD from existing conditions	0.3 VQD from existing conditions
Pedestrian and Bicycle Facilities		
Pedestrian and Bicycle Facilities	New bridge and streetscape features would improve pedestrian and bicycle facilities, enhancing connectivity for these transportation modes	New bridge and streetscape features would improve pedestrian and bicycle facilities, enhancing connectivity for these transportation modes. Improved connection to Suitland Parkway from Frederick Douglass Memorial Bridge

Table S-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

Environmental Topic/Measure	Impact Summary	
	FEIS Preferred Alternative	Revised Preferred Alternative
Traffic and Transportation		
Predicted Percent Increase (or Decrease) in Traffic Volumes on South Capitol Street at the Anacostia River compared with the No Build Alternative	13 percent	13 percent
Number of Intersections Predicted to Operate at Level-of-Service (LOS) E or F During the Morning Peak Hour in 2040	5 (based on updated analysis)	3
Number of Intersections Predicted to Operate at Level-of-Service (LOS) E or F During the Evening Peak Hour in 2040	10 (based on updated analysis)	7
Other Transportation Facilities and Services		
Public Transit Service (Metrorail, Metrobus, DC Circulator, Commuter Bus)	None	None
Parking Conditions	None	None
Other Types of Transportation (Water, Helicopter, Freight and Passenger Rail)	None, except that helicopter flight operations would need to be altered at the heliport adjacent to South Capitol Street	Flight operations at the heliport would not be altered.
Energy		
Predicted Direct Energy Consumption Increase (or Decrease) in 2040 Compared with the No Build Alternative	0.5 percent decrease	0.5 percent decrease
Cumulative Impacts		
Land Use	Beneficial	Beneficial
Socioeconomic Conditions	Low level of adverse effects	Low level of adverse effects
Park and Recreational Resources	Beneficial	Beneficial
Air Quality	Beneficial	Beneficial
Noise Conditions	No Effect	No Effect
Water Resources	Beneficial	Beneficial
Wildlife and Habitats	No Effect	No Effect
Cultural Resources	No Effect	No Effect
Visual Characteristics	No Effect	No Effect
Transportation and Infrastructure	Beneficial	Beneficial
Indirect Impacts		
Development Inducing Potential of the Project	Supports development, but not the crucial factor	Supports development, but not the crucial factor

Table S-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

	Impact Summary	
Environmental Topic/Measure	FEIS Preferred Alternative	Revised Preferred Alternative
Construction Impacts		
Community Cohesion and Facilities	Temporary change in access to certain community facilities; temporary utility disruptions may be required	Temporary change in access to certain community facilities; temporary utility disruptions may be required
Economy and Employment	New construction jobs created; purchase of equipment, supplies and materials from local and regional sources	New construction jobs created; purchase of equipment, supplies and materials from local and regional sources
Air Quality	Short-term fugitive dust and mobile source emissions	Short-term fugitive dust and mobile source emissions
Noise and Vibration Conditions	Construction activities, equipment and vehicles emitting noise ranging from high 70s to up to 100 decibels (dB) and causing vibration	Construction activities, equipment and vehicles emitting noise ranging from high 70s to up to 100 decibels (dB) and causing vibration
Water Quality	Construction of bridge has the potential to affect water quality	Construction of bridge has the potential to affect water quality
Wildlife and Habitats	Some vegetation cleared to support construction	Some vegetation cleared to support construction
Geography, Topography and Soils	Disturbance of soil could cause erosion and sedimentation	Disturbance of soil could cause erosion and sedimentation
Cultural Resources	Proximity of construction activities could temporarily diminish the integrity of certain historic properties	Proximity of construction activities could temporarily diminish the integrity of certain historic properties
Hazardous Materials	Health and safety of construction workers could be affected through exposure to hazardous materials sites	Health and safety of construction workers could be affected through exposure to hazardous materials sites
Pedestrian and Bicycle Facilities	Mobility for pedestrians and cyclists would be maintained though detours may be required	Mobility for pedestrians and cyclists would be maintained though detours may be required
Traffic and Transportation	Traffic circulation and mobility would be maintained although street closures and detours may be required; access to Metrorail stations maintained at all times, but rerouting of bus routes and moving of bus stops may be required; marine traffic on the river would be maintained except for short term closures from certain construction activities	Traffic circulation and mobility would be maintained although street closures and detours may be required; access to Metrorail stations maintained at all times, but rerouting of bus routes and moving of bus stops may be required; marine traffic on the river would be maintained except for short term closures from certain construction activities

Table S-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

	Impact Summary	
Environmental Topic/Measure	FEIS Preferred Alternative	Revised Preferred Alternative
Section 4(f)		
Number of Section 4(f) Uses	2 (the L'Enfant Plan of the City of Washington, DC and Suitland Parkway)	3 (the L'Enfant Plan of the City of Washington, DC, Anacostia Park and Suitland Parkway, but the latter two would be *de minimis* impacts

S.8 Environmental Permits and Approvals

The following text includes a summary of the permits and approvals required for the proposed Project. Additional environmental commitments (mitigation measures) are listed in Table 4-20.

- Wetlands: The USACE provided the final jurisdictional determination on February 5, 2015. They reconfirmed the previously surveyed wetlands in the Project Area, but also determined that the three newly identified wetlands are isolated wetlands and would not be subject to USACE jurisdiction if affected by the Project, but may be subject to DDOE permitting. Approximately 0.04 acres of one of the isolated wetlands may be filled, which would be subject to DDOE permitting. During construction, the other two isolated wetlands located along Suitland Parkway may be protected by a fenced 25-foot buffer if required by DDOE.
- Anacostia River: A Nationwide Permit will be obtained from the USACE in accordance with Section 404 of the Clean Water Act (CWA) for construction of the new bridge over the Anacostia River. A CWA Section 401 Water Quality Certification will also be obtained from the DDOE. In addition, the NPS claims jurisdiction of the Anacostia riverbed and requires that a Special Use Permit be obtained prior to construction of the new bridge. Finally, a USCG Bridge Permit will be obtained pursuant to Section 9 of the Rivers and Harbors Act.
- Wildlife and Habitats: Coordination will be conducted with U.S. Fish and Wildlife Service per Migratory Bird Treaty Act permit for relocation of multiple osprey and peregrine falcon nests and periodic removal of new nest materials to prevent nesting during construction.

  In compliance with Section 7 of the Endangered Species Act, a biological assessment was completed and FHWA determined that the Project is “not likely to adversely affect” the Atlantic sturgeon. After the review of the biological assessment, the NMFS concluded that no federally listed or proposed threatened or endangered species under their jurisdiction exist in the vicinity of the Project. This completed the updated Section 7 consultation process for the Project.
- Cultural Resources: *The Memorandum of Agreement Among the Federal Highway Administration, the District of Columbia State Historic Preservation Office, the National Capital Planning Commission, the Advisory Council on Historic Preservation, and the District Department of Transportation, Regarding the South Capitol Street Project within the District of Columbia* (MOA) (ACHP et al., 2011) completed during the FEIS phase and executed in 2011 was revised to consider changes introduced by the Revised Preferred Alternative. The DC SHPO and consulting parties were consulted to resolve effects and to revise the MOA.
- Hazardous Materials: Conduct Phase 2 Environmental Site Assessment (ESA); develop waste management plan based on results of the Phase 2 ESA; Coordinate with DDOE concerning handling and disposal of contaminated materials; and dewatering activities near contaminated zones in compliance with procedures and requirements specified in DDOE permits.
- Visual Quality: Interim or preliminary designs prepared by designer/contractors will undergo reviews through a visual quality management process prior to construction.

- Parklands: To construct a new access road to Anacostia Park on Anacostia Drive, which would start from the northeast leg of the east traffic oval, will include signage, in accordance with NPS standards, and landscaping and lighting to create a welcoming entrance into Anacostia Park from the east oval. Use of land by DDOT under the jurisdiction of NPS, such as Anacostia Park, would be authorized by Special Use Permits.

S.9 Unresolved Issues

There are no unresolved NEPA issues related to the Project.

chapter 1.0
purpose and need

1.1 Introduction

This Supplemental Final Environmental Impact Statement (FEIS) documents changes proposed to the South Capitol Street Project (the Project) subsequent to the Final Environmental Impact Statement (FEIS) that was approved by the Federal Highway Administration (FHWA) on March 22, 2011. The District of Columbia Department of Transportation (DDOT) proposed the Project in conjunction with the FHWA. DDOT and FHWA serve respectively as the Applicant and Lead Federal Agency regarding compliance with FHWA's implementing regulations of the National Environmental Policy Act (NEPA), as amended. The U.S. Navy (USN), U.S. Army Corps of Engineers (USACE), U.S. Coast Guard (USCG), National Capital Planning Commission (NCPC), National Park Service (NPS) and District of Columbia Department of the Environment (DDOE)) are continuing to serve as cooperating agencies for the Project. The Project Area encompasses South Capitol Street between Suitland Parkway at Martin Luther King, Jr. Avenue SE on the southeast end and Independence Avenue on the north end. The Project Area includes the existing Frederick Douglass Memorial Bridge, which is proposed to be replaced with a new bridge, and the street network immediately on both sides of the river from the new bridge, including Interstate 295 (I-295) and Suitland Parkway. Finally, the Project Area includes New Jersey Avenue SE between M Street SE and Independence Avenue. The Project Area is shown in Figure 1-1.

DDOT proposed major design changes to the FEIS Preferred Alternative subsequent to its approval by FHWA. Those changes were the result of the decision to reconsider obtaining right-of-way within the northernmost portion of the Joint Base Anacostia-Bolling (JBAB) for the Project which resulted in additional engineering that set the proposed new Frederick Douglass Memorial Bridge on an alignment immediately south of and parallel to the existing bridge. New information about current and planned navigation, including the navigation requirements of the USN along the Anacostia River influenced the decision to include a fixed bridge among the Project alternatives. In addition, revisions to exit ramps throughout the Project Area were made for enhanced safety. These include changes to the new ramps at Martin Luther King, Jr. Avenue SE and Suitland Parkway, and the ramps at I-695 and South Capitol Street.

Figure 1-1: Project Area

District Department of Transportation

In addition, as shown in Figure 1-2, the existing Frederick Douglass Memorial Bridge is a swing-span type of bridge, where a section of the bridge opens to accommodate taller marine vessels. The FEIS considered alternatives that contained bridge types with movable spans which would continue to allow passage of marine vessels with clearance requirements higher than the proposed navigation opening for the bridge in the closed position (see Section 2.2 of the FEIS). This Supplemental FEIS documents the results of the Anacostia River Navigation Evaluation Final Report (DDOT, 2014) (Appendix A) that determined the extent to which a fixed bridge would accommodate various types and sizes of marine vessels.

Figure 1-2: Frederick Douglass Memorial Bridge Center Swing Spans

Due to the noted design changes, a new alternative was developed. The new alternative was named the "Revised Preferred Alternative" since the FEIS identified a Preferred Alternative, and the design changes noted above represent significant changes to the FEIS Preferred Alternative. This newly proposed Revised Preferred Alternative was not previously evaluated in the FEIS which is why the FEIS is being supplemented regarding this new information and public circulation of the supplemented FEIS is required.

Information regarding design changes to the Project is provided in this Supplemental FEIS document which also describes changes to the affected environment (existing conditions) subsequent to the formerly approved FEIS. This supplemental document also provides

information on the environmental impacts of the Revised Preferred Alternative. For reader convenience, environmental impacts attributable to the FEIS Preferred Alternative are provided for comparison. Where applicable, this Supplemental FEIS notes the adjustments in mitigation measures and environmental commitments as a result of differing environmental impacts due to the Revised Preferred Alternative.

The details of information relating to the affected environment or environmental consequences contained in the formerly approved FEIS will not be duplicated in this supplemental document if it remains valid for the Revised Preferred Alternative; however, that information will be summarized to provide context.

1.2 Background

1.2.1 South Capitol Street Corridor

Major Pierre-Charles L'Enfant's *1791 Plan of the City of Washington* (the L'Enfant Plan) identified South Capitol Street as one of the symbolic gateways into the District's Monumental Core. The L'Enfant Plan envisioned South, East, and North Capitol Streets as the cardinal street extensions of the U.S. Capitol. These streets are critically important within the transportation hierarchy and they are considered to be "prominent gateways" to the District's Monumental Core.

Today, the South Capitol Street Corridor continues to connect downtown Washington with southeast and southwest neighborhoods and communities within Prince George's County, Maryland. Up to 80,000 daily commuters travel through the South Capitol Street Corridor. The South Capitol Street Corridor, including the Frederick Douglass Memorial Bridge and its connection with Suitland Parkway, is part of the National Highway System. Prior to completion of construction of the Frederick Douglass Memorial Bridge in 1950, South Capitol Street terminated at the Anacostia River's western bank with an intersection at T Street SW. Section 1.2.2 summarizes the history of the bridge and the rationale for its design as a movable bridge.

In 2007, with the *Frederick Douglass Memorial Bridge Rehabilitation* project, DDOT lowered a viaduct portion of the bridge on the west side of the river and reconstructed South Capitol Street as an at-grade, divided roadway, with landscaping, from Potomac Avenue to N Street. The bridge on the west side of the river now begins at Potomac Avenue rather than at N Street.

In 2008, DDOT completed the *South Capitol Street Near-Term Improvements*, which included reconstruction and other improvements, such as landscaping, streetlights, and pedestrian and traffic signal improvements along several roadways surrounding South Capitol Street. These roadways included:

- 1st Street SE from I Street SE to Potomac Avenue SE
- Potomac Avenue from 1st Street SE to Half Street SE
- N Street SE from 1st Street SE to South Capitol Street
- I Street SE from New Jersey Avenue SE to South Capitol Street

Despite the recent improvements made to the corridor, it still lacks the characteristics of a gateway as envisioned by L'Enfant. For instance, the existing bridge and its approaches have a freeway type configuration, and lack adequate pedestrian and cycling facilities. In addition, the street network on both sides of the river fails to provide necessary connections to community destinations for pedestrians, cyclists, transit riders, or motorists. Chapter 2.0 of the FEIS described the critical long-term needs for improvements.

1.2.2 Frederick Douglass Memorial Bridge

The Frederick Douglass Memorial Bridge was planned as an extension of South Capitol Street across the Anacostia River and an integral design element of Suitland Parkway. Prior to the construction of the bridge, there was no means to cross the Anacostia River in the vicinity of South Capitol Street. Suitland Parkway was constructed as a rapid, unimpeded thoroughfare for government officials and workers, and foreign dignitaries, to travel between downtown Washington and Andrews Air Force Base, in Camp Springs, Maryland. The Frederick Douglass Memorial Bridge was constructed following the completion of construction of Suitland Parkway.

The National Capital Park and Planning Commission (NCPPC) began initial planning for the bridge and Suitland Parkway in 1937. Due to limited monetary resources available during World War II, Suitland Parkway was constructed beginning in 1943. The bridge design was completed in early 1942 but the funding was not procured until 1949. Figure 1-3 shows the Washington Navy Yard and vicinity with the initial phase of construction for the South Capitol Street Bridge in the upper left of the photograph.

When the bridge opened, it was 3,250 feet long with two lanes in either direction separated by a 4-foot-wide median. It was designed with a gently arching profile, to allow smaller boats to cross beneath its central spans, which provide a maximum vertical clearance of 45 feet. Since the Washington Navy Yard is located immediately upstream, the bridge accommodated larger ships, such as military vessels, that frequented the area at the time.

To comply with navigation requirements needed for the Navy Yard, the bridge designers were required to utilize a moveable central span, either a drawbridge or a swing span. According to the U.S. Commission of Fine Arts publication on Bridges and the City of Washington, the chosen design featured what was, at the time of its construction, one of the world's longest pivoting swing spans, stretching 386 linear feet.

Throughout its early history, the new bridge was simply referred to as the South Capitol Street Bridge. It was not dedicated to the memory of Frederick Douglass until 16 years after its construction, in October 1965.

Figure 1-3: Historic Photograph of Washington Navy Yard and Vicinity

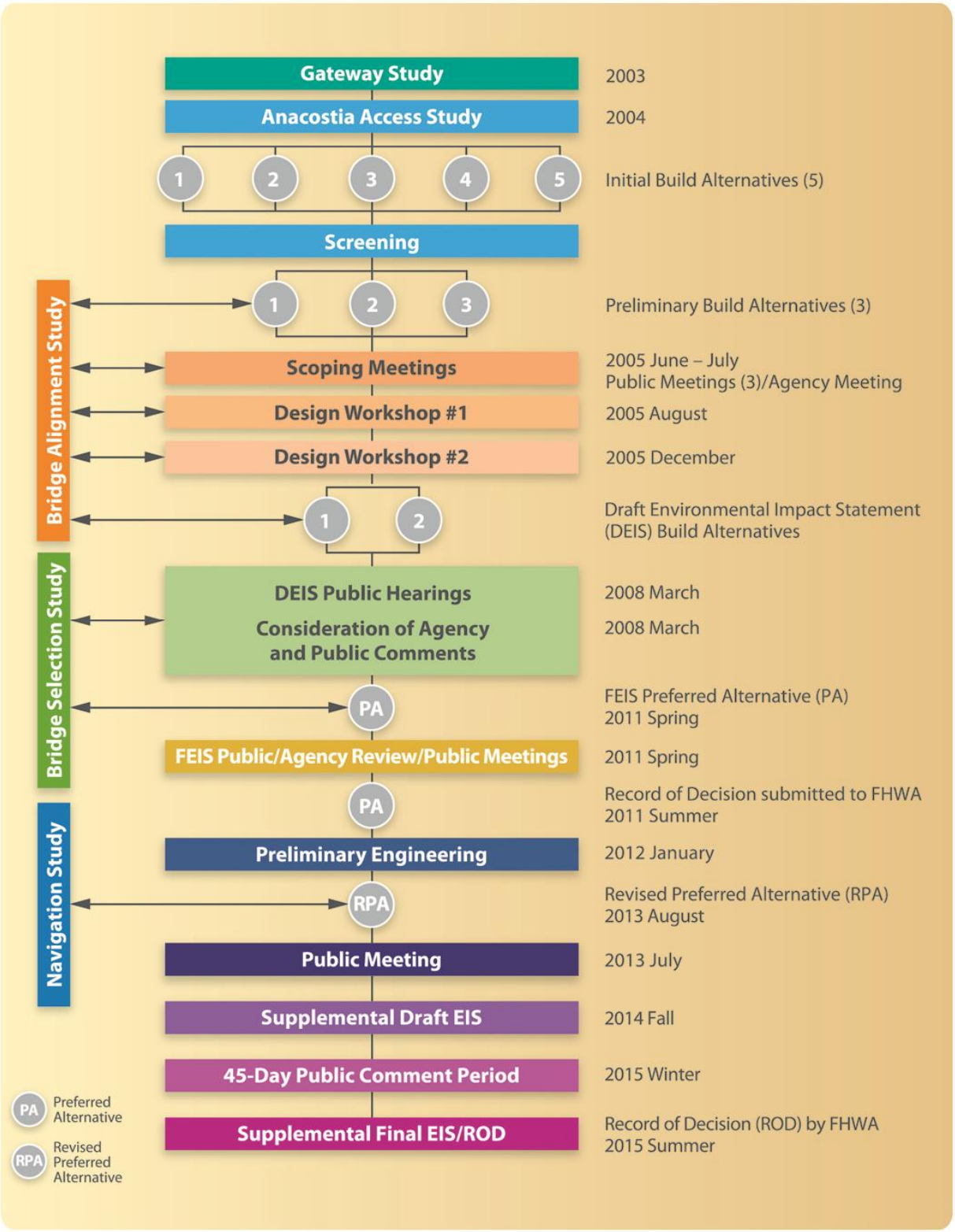
Source: Naval History and Heritage Command, 1950
Note: The initial phase of construction for the South Capitol Street Bridge is shown in the upper left of the photograph

1.2.3 Recent Planning History

As growth in the District migrated outward from the highly developed downtown and Monumental Core, the area surrounding the Anacostia River has been the focus of a sustained planning and development effort. The South Capitol Street Corridor has been a key part of that effort and the critical milestones in the planning for the corridor are discussed below and illustrated in Figure 1-4.

Recognizing the need for a clear vision for the Anacostia Waterfront, in March 2000, Mayor Anthony Williams brought together the 20 federal and District agencies that own or control land along the Anacostia River. It was this partnership that signed the Anacostia Waterfront Initiative (AWI) Memorandum of Understanding (District Office of Planning, 2000) and began to define the vision for the Anacostia Waterfront in the future.

Figure 1-4: South Capitol Street Corridor Planning Timeline



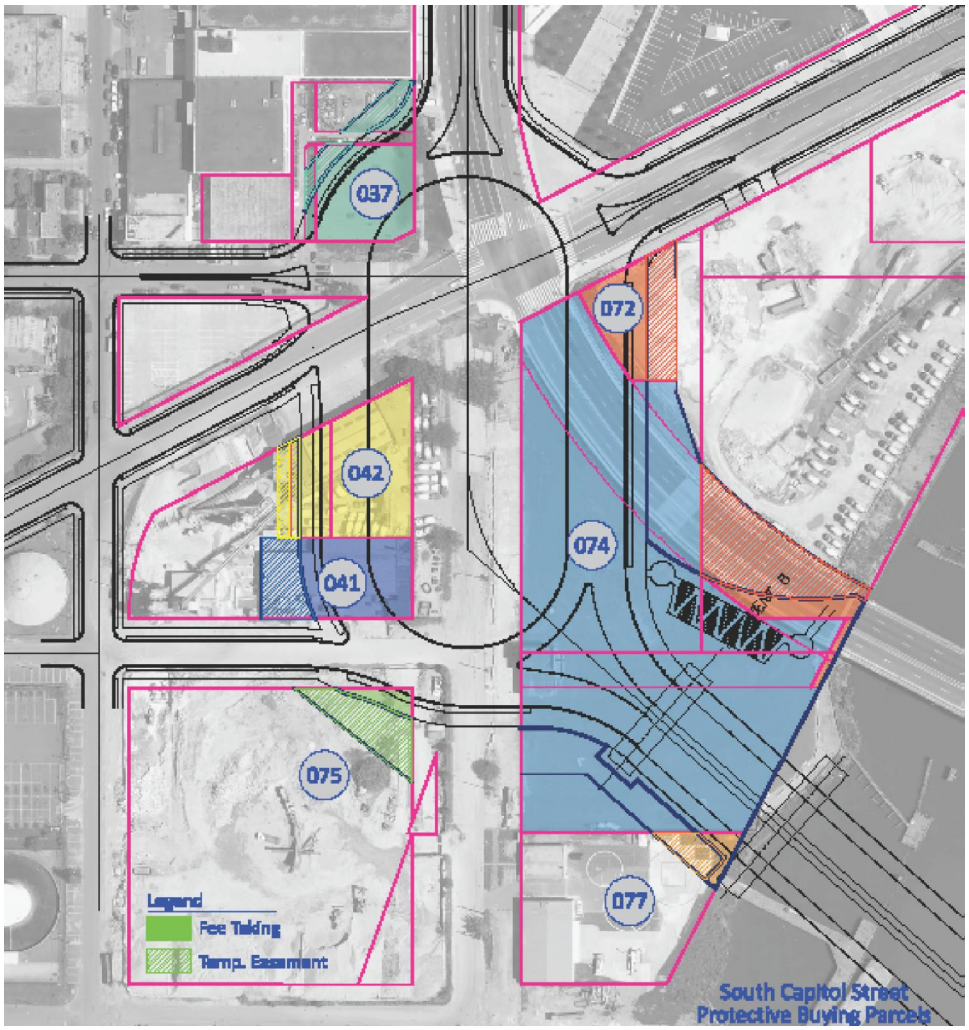
Acting with the cooperation and oversight of this partnership, the District Office of Planning (OP) created the AWI (OP, 2003), identifying major themes to guide development and revitalization efforts along the Anacostia Waterfront. The plan considered the proposed redevelopment of South Capitol Street according to the National Capital Planning Commission's (NCPC) 1997 plan, *Extending the Legacy, Planning America's Capital for the 21st Century* (NCPC, 1997). The plan identified South Capitol Street as a civic gateway to central Washington providing a mix of shopping, housing, and offices. It also proposed replacing the Frederick Douglass Memorial Bridge with a new six-lane span that would also accommodate pedestrians and bicycles. DDOT and FHWA proposed to improve South Capitol Street and prepared the *South Capitol Street Draft Environmental Impact Statement (DEIS) and Section 4(f) Evaluation* (DDOT, 2007) to address these changes.

In March 2007, FHWA approved the full and partial acquisition of seven parcels located near the west end of the Frederick Douglass Memorial Bridge (see Figure 1-5). The approval included NEPA compliance through the issuance of a categorical exclusion for the protective buy. At the time, development of the parcels appeared imminent. Not only would such development limit the transportation options available to the Project, it would substantially increase the cost of the Project if these parcels were to be re-developed. From the development of the Revised Preferred Alternative, DDOT has sought to minimize the need to obtain additional rights-of-way. For example, the planned partial acquisition of Parcel 077 is no longer required. At this time, the advanced acquisition of the remaining six parcels is in various stages of the acquisition process.
The DEIS included alternatives for improving safety, multimodal mobility and accessibility, and supporting economic development throughout the Project Area. DDOT actively sought and received public input on the process and design decisions. Based on feedback on the DEIS, a FEIS was prepared and submitted to FHWA. FHWA signed the FEIS in 2011 but did not issue a Record of Decision (ROD).

In December 2011, the FHWA, District of Columbia State Historic Preservation Office (DC SHPO), NPS, NCPC, Advisory Council on Historic Preservation (ACHP), and DDOT signed the *Section 106* Memorandum of Agreement (MOA) (ACHP et al., 2011), which was meant to resolve the "adverse effect" to two affected historic properties: The L'Enfant Plan of the City of Washington, DC and Suitland Parkway. The Section 106 MOA was amended and restated to reflect the updated Section 106 consultation as a result of the development of the Revised Preferred Alternative, which changed the Area of Potential Effect (APE) due to certain design changes, such as the realignment of the proposed Frederick Douglass Memorial Bridge.

Following the release of the FEIS, the alignment of the Frederick Douglass Memorial Bridge was reevaluated in terms of design efficacy, constructability, cost, right-of-way requirements, environmental considerations, and other factors. From this reevaluation, several potential risks were identified with constructing the FEIS Preferred Alternative and the proposed new Frederick Douglass Memorial Bridge (see Section 2.2.4).

Figure 1-5: Parcels Subject to Protective Buy in 2007



The identified risks led DDOT to consider revising the alignment of the Frederick Douglass Memorial Bridge for the FEIS Preferred Alternative. The alignment was relocated parallel to and directly adjacent to the south side or downstream from the existing bridge superstructure, which is upstream from the proposed alignment for the FEIS Preferred Alternative. The bridge realignment would avoid the need to acquire JBAB property and minimize, or eliminate, the remaining risks of the FEIS Preferred Alternative, including potential impacts to utilities and hazardous materials. Section 2.1.2 contains a detailed discussion of these risks.

Since completing the FEIS, DDOT investigated the types of marine vessels and navigation requirements for bridge openings using existing historical, current and forecast data. Records indicated that the bridge occasionally opened for marine vessels. Replacing the movable bridge with a fixed bridge would result in substantial cost savings. The change in the bridge alignment

would preclude operating the swing span during the approximately three years needed to construct the new bridge.

1.2.4 DEIS and FEIS NEPA Compliance

The Notice of Intent (NOI) to prepare the *South Capitol Street DEIS and Section 4(f) Evaluation* (DDOT, 2007) for the Project was published in the April 26, 2005 edition of the *Federal Register*. Following the publication of the NOI, DDOT held agency coordination meetings, public scoping meetings, and other public involvement activities. Chapter 8.0 of the FEIS describes the public involvement activities.

The Notice of Availability for the DEIS was published in the February 15, 2008 edition of the *Federal Register*, which initiated a 45-day comment period that ended on March 31, 2008. Paper copies of the DEIS were made available to the public at a number of accessible locations. An electronic version of the DEIS was available for download on the South Capitol Street project website (www.southcapitoleis.com). Public hearings for the DEIS were held on March 4, 2008 at Birney Elementary School and on March 5, 2008 at Amidon Elementary School. Information about the distribution of the DEIS, the public hearings and comments received during the 45-day comment period is provided in Chapter 8.0 of the FEIS.

FHWA approved the FEIS on March 22, 2011 and filed it with the U.S. Environmental Protection Agency (USEPA) for publication in the *Federal Register*. Subsequently a Notice of Availability was published in the April 8, 2011 edition of the *Federal Register*, as well as in local media outlets. The public review of the FEIS included public meetings held on April 26 and 28, 2011. The review period ended on May 12, 2011. DDOT received comments from agencies, organizations, residents, and other individuals interested in the Project.

1.2.5 Supplemental DEISNEPA Process and Status

The National Environmental Policy Act (NEPA) requires "….all agencies of the Federal Government shall include…a detailed statement by the responsible official on (i) the environmental impact of the proposed action; (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented; (iii) alternatives to the proposed action; (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available…to the public…through the existing agency review processes." An EIS shall be supplemented whenever FHWA determines that: (1) Changes to the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or (2) New information or circumstances relevant to environmental concerns and bearing on the proposed action or its

impacts would result in significant environmental impacts not evaluated in the EIS. The proposed design changes to the Project were not evaluated in the FEIS. Based on the requirements of 23 CFR 771.130, FHWA determined that the FEIS had to be supplemented to address the design changes proposed by DDOT.

A Notice of Intent (NOI) to prepare a Supplemental Final Environmental Impact Statement and Section 4(f) Evaluation (Supplemental FEIS) for the Project was published in the July 28, 2014 edition of the *Federal Register*(Appendix B). Subsequent to the preparation of the Supplemental FEIS and Section 4(f) Evaluation in the Federal Register, FHWA determined the submittal of a Supplemental Draft EIS (DEIS) would be required in lieu of only a Supplemental FEIS. A revised NOI was submitted and published in the December 8, 2014 edition of the Federal Register.

The Supplemental DEIS assessed impacts resulting from design changes to the FEIS Preferred Alternative as previously noted. It also included a comparison of potential impacts from those previously documented in the FEIS. The Supplemental DEIS was published in the December 19, 2014 edition of the Federal Register. Agencies and the public were given 45 days to comment on the document. That comment period ended on February 2, 2015.The Supplemental FEIS:

- Updates the description of the Project
- Identifies a Revised Preferred Alternative
- Updates the assessment of construction and long-term environmental and social impacts as a result of changes in the design of the Project
- Proposes adjustments to previously-adopted mitigation measures as a result of changes in the design of the Project
- Summarizes additional agency coordination and public involvement
- Updates Project compliance with other federal laws, in particular, Section 106 of the National Historic Preservation Act (16 USC 470 et seq. and 36 CFR 800)
- Updates Project compliance with Section 4(f) of the U.S. Department of Transportation Act of 1966, as amended (23 CFR 774)

This Supplemental FEIS includes agency and public comments on the Supplemental DEIS as well as responds to comments made (see Appendix N).

1.3 Purpose and Need

The purpose and need for the South Capitol Street Project remains the same as described in the FEIS (see Section 1.4 of the FEIS). The purpose of the Project is to improve safety, multimodal mobility and accessibility, and support economic development throughout the project area. The Project would transform the existing corridor into an urban gateway to the U.S. Capitol and District of Columbia's Monumental Core. Transportation improvements were identified to

incorporate long-term environmental sustainability and context sensitive design. Specifically, the project addresses the following needs:

- Safety – The design and deteriorating condition of the transportation infrastructure in the corridor results in poor safety conditions for motorists, cyclists, pedestrians, and transit riders.
- Mobility –The lack of critical regional roadway connections and the absence of facilities for bicyclists and pedestrians support the need to improve multimodal mobility in the South Capitol Street Corridor.
- Accessibility – Several key destinations in or adjacent to the corridor are difficult to reach using the existing transportation infrastructure. Grade separations, median barriers, and ramp and intersection configurations limit access to activity centers for motorists, bicyclists, pedestrians, and transit riders.
- Economic Development – The density of employment and residential development forecasted for the area highlight the need to support economic growth. Public investments have increased employment and will stimulate additional private investment in new residential, office and retail developments. As economic development continues to occur within the Project Area, additional demand will continue to be placed on transportation infrastructure to meet future transportation needs.

1.4 Next Steps

As allowed under Section 1319(b) of the Moving Ahead for Progress in the 21st Century Act (MAP-21), this Supplemental FEIS is a combined document with the Project's Record of Decision (ROD). The ROD documents the identified Revised Preferred Alternative as the Selected Alternative, the required Section 4(f) approval in accordance with 23 CFR 774, and the environmental commitments or required mitigation measures for the Project. The cooperating agencies (USN, USACE, USCG, NCPC, NPS, and DDOE) may prepare their own decision document (i.e., ROD) or adopt or concur in FHWA's NEPA document and ROD depending on their implementing NEPA regulatory requirements.

chapter 2.0
alternatives

This chapter provides a description of the No Build Alternative (Section 2.1), the alternatives development process (Sections 2.2), the Revised Preferred Alternative (Section 2.3), a summary of the visual quality process (Section 2.4) which will assist in guiding the development of the final design for the Project, and an update of other projects in the vicinity of the Project (Section 2.5).

As noted in Section 1.1, this Supplemental FEIS was prepared because design changes were made to the Preferred Alternative as described in the FEIS. These proposed changes for the Project were previously not evaluated.

2.1 No Build Alternative

The No Build Alternative would contain no new construction resulting from the proposed Project action, although other planned and committed projects in the area would move forward. In addition, planned maintenance activities would be conducted to the existing infrastructure as necessary.

2.2 Alternatives Development Process

Prior to the preparation of the supplemental NEPA documents, three iterations of alternatives were developed:

- Initial Build Alternatives Eliminated from Consideration (Section 2.2.1)
- Alternatives Evaluated in the DEIS and FEIS (Section 2.2.2)
- FEIS Preferred Alternative (Section 2.2.3)

Each iteration of alternatives development included consideration of planning, engineering, and environmental input with public and agency comments.

2.2.1 Initial Alternatives Eliminated from Consideration

The *South Capitol Street Gateway and Corridor Improvement Study* (DDOT 2003) (Gateway Study) developed corridor-wide concepts for infrastructure improvements in the South Capitol Street area. Building on the concepts from the Gateway Study, the *South Capitol Gateway Corridor and Anacostia Access Studies* (DDOT 2004) further refined and developed these concepts, focusing on individual options in specific locations. These individual concepts were combined to form a series of end-to-end corridor alternatives for South Capitol Street. Five

Initial Build Alternatives were created from reasonable combinations of these individual options.

The No Build Alternative does not meet the purpose and need for the Project; however, it was retained through the analysis as the baseline condition against which the potential impacts of the Build Alternatives are measured. The No Build Alternative would maintain existing problematic intersection and ramp geometrics, as well as the obsolete Frederick Douglass Memorial Bridge Existing pedestrian and bicycle system deficiencies along South Capitol Street would remain, particularly those on the Frederick Douglass Memorial Bridge. The No Build Alternative does not provide additional roadway access; the Suitland Parkway and I-295 interchange would continue to be missing connections. The existing network of roadway ramps at the eastern approach to the Frederick Douglass Memorial Bridge would remain.

Among the alternatives that were found not to meet the purpose and need for the Project were the Transportation System Management (TSM) and Mass Transit alternatives. Because mass transit alone would not satisfy the purpose and need of the project, transit considerations were incorporated into each Build Alternative. The TSM Alternative included modifications that maximize the efficiency of the existing transportation system. The possible components of the TSM Alternative included minor infrastructure improvements, fringe parking, ridesharing, high occupancy vehicle (HOV) lanes on existing roadways, and traffic signal timing optimization.

The five Initial Build Alternatives were evaluated using a comparative analysis screening process that led to three alternatives being carried forward as Preliminary Build Alternatives. These Preliminary Build Alternatives were presented to the public, agencies, and stakeholders at a number of public meetings and design workshops in 2005. The public and agency input resulted in the elimination of one of the preliminary alternatives. This particular alternative would have provided a high-capacity freeway scenario, which did not fit well with the urban design objectives of the project. The remaining preliminary alternatives were developed into the DEIS build alternatives, which are described in the Section 2.1.2 below.

Further information about the alternatives development process and the early project alternatives that were eliminated from consideration can be found in Sections 2.3 and 2.4 of the FEIS.

2.2.2 Alternatives Considered in the DEIS and FEIS

The DEIS evaluated two build alternatives, which were identified as Build Alternatives 1 and 2. Figures 2-1 and 2-2 display Build Alternatives 1 and 2, respectively. The FEIS evaluated an additional build alternative, which was a modification of Build Alternative 2 and was identified in the FEIS as the Preferred Alternative (hereinafter referred to as the FEIS Preferred Alternative). However, all three build alternatives were evaluated in detail in the FEIS. For comparative purposes, a No Build Alternative was also evaluated. Each of the Build Alternatives met the purpose and need for the Project and was the result of extensive public and agency coordination.

Figure 2-1: Build Alternative 1

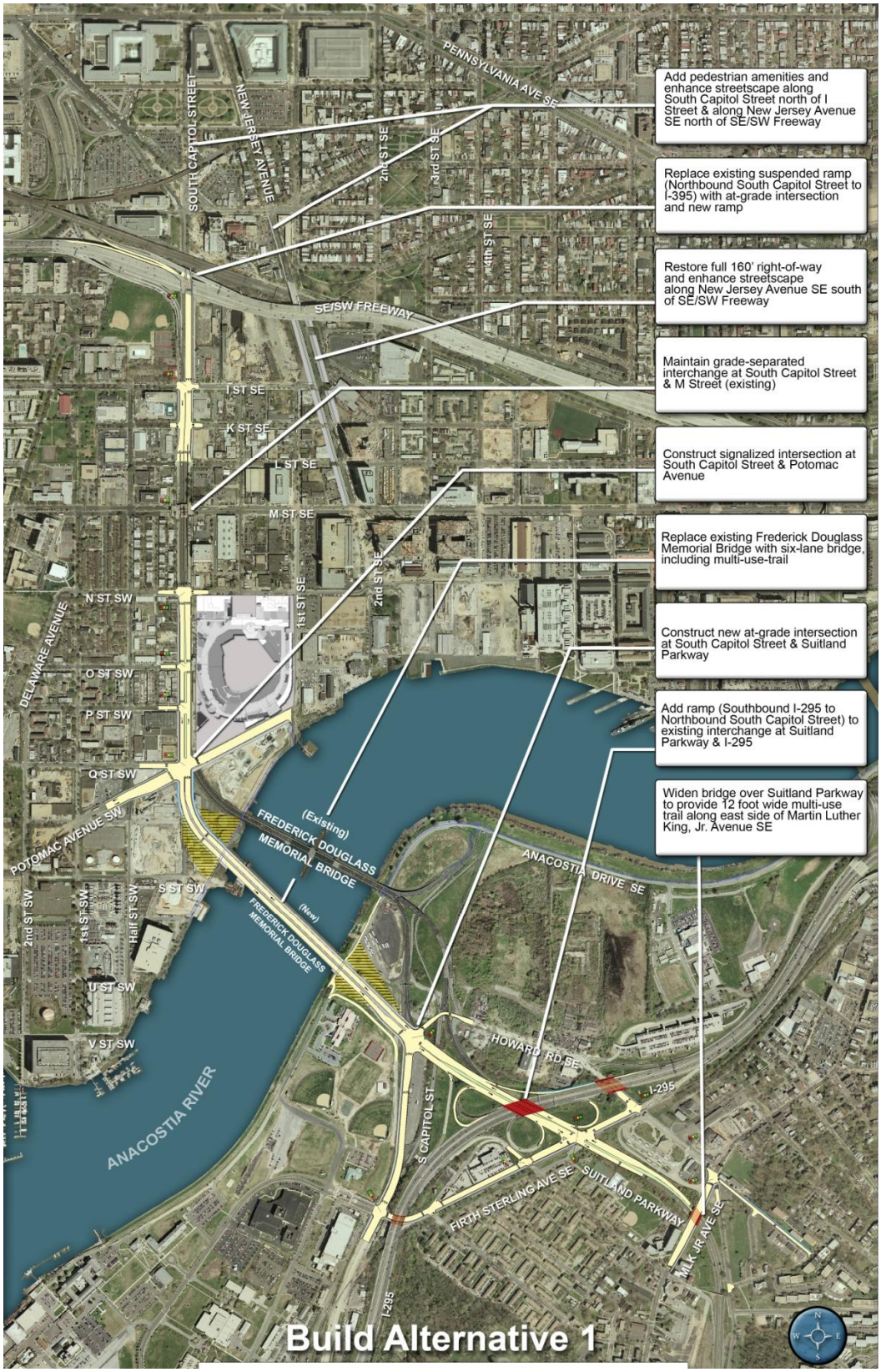
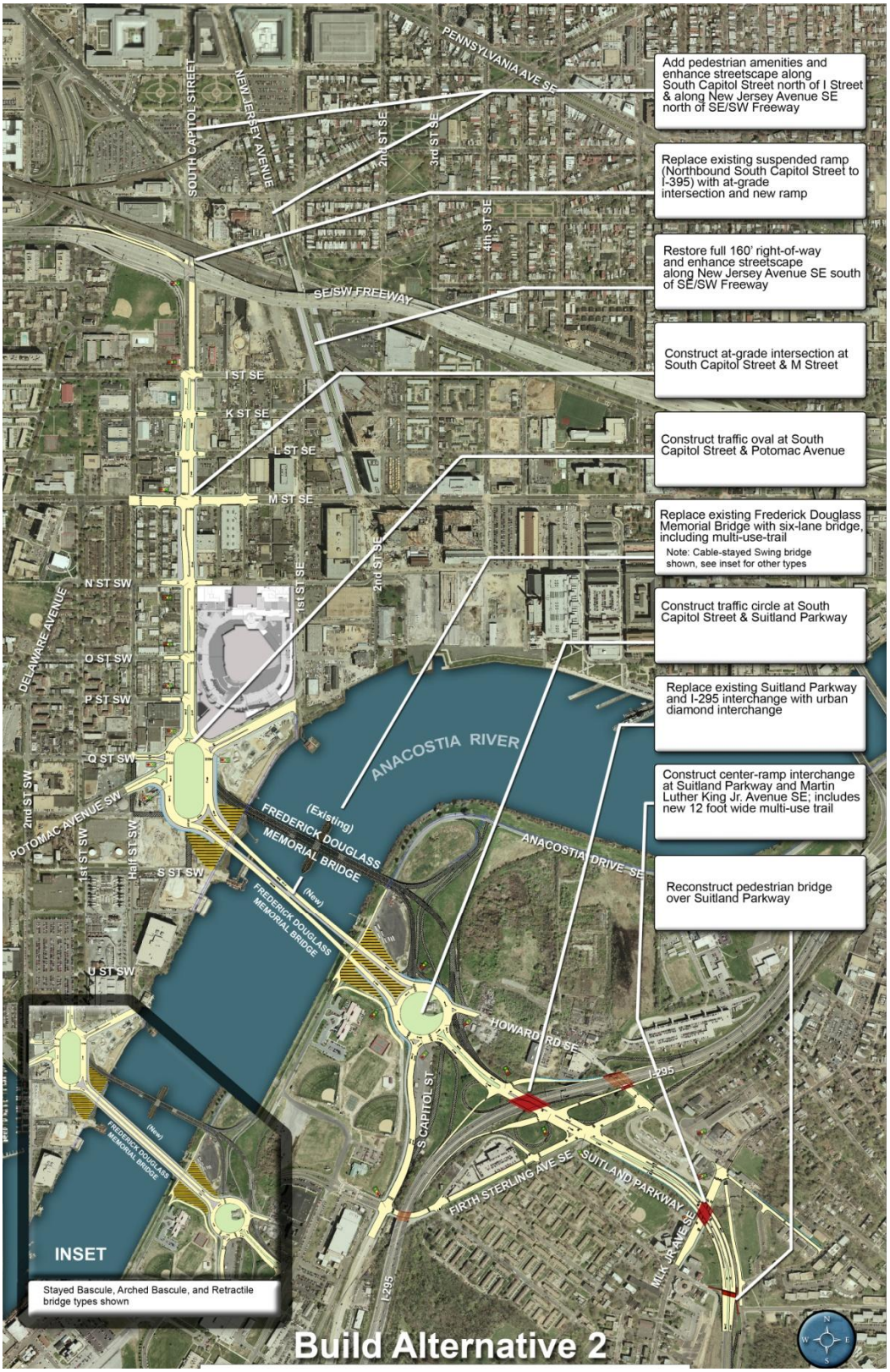


Figure 2-2: Build Alternative 2



District Department of Transportation

All three Build Alternatives would transform South Capitol Street into a grand, urban boulevard—as envisioned in the Plan of the City of Washington—by providing new, consistent streetscape features and pedestrian and bicycle facilities from Firth Sterling Avenue SE to Independence Avenue. In addition, the alternatives would replace the Frederick Douglass Memorial Bridge, provide streetscape features along Suitland Parkway and New Jersey Avenue SE, and include new or modified connections between major roadways.

Four bridge types for the replacement of Frederick Douglass Memorial Bridge were considered in the development of the three build alternatives in the FEIS.

- Cable-Stayed Swing Bridge
- Stayed Bascule Bridge
- Arched Bascule Bridge
- Retractile Bridge

The new bridge alignment would have been designed at an angle for all three build alternatives. The rationale for this angled bridge alignment was to provide adequate clearance for operating the swing span on the existing bridge during the new bridge construction. The FEIS build alternatives only considered movable bridges to replace the existing bridge.

Streetscape improvements under each build alternative aimed to transform the existing corridor into an urban gateway. The streetscape features were designed to improve multimodal mobility and support economic development, two elements of the purpose and need for the Project. They did not vary between the alternatives, except for minor differences, because the Build Alternatives and the FEIS Preferred Alternative had similar alignments and characteristics.

Linear landscaping and streetscape features were proposed along South Capitol Street, New Jersey Avenue SE, and Suitland Parkway; however, they were employed differently on each street. Streetscape features in spot locations, as needed, were also proposed along Washington Avenue SW. The overall project streetscape concept included prominent landscape features at the intersections of South Capitol Street and Potomac Avenue SE, and South Capitol Street and Suitland Parkway. These two locations would have visually anchored each end of the new Frederick Douglass Memorial Bridge.

Build Alternative 1 had the following features that distinguished it from Build Alternative 2:

- A modified, at-grade, and signalized intersection at South Capitol Street, Potomac Avenue, and Q Street SW
- Not having a cable stayed swing bridge as an option for the replaced Frederick Douglass Memorial Bridge
- An at-grade signalized intersection at South Capitol Street, Howard Road SE, and Suitland Parkway, replacing the existing series of ramps that connect the three roadways
- Replacement of the southbound I-295 to Howard Road SE ramp with a southbound I-295 to northbound Suitland/South Capitol Street ramp, which would eliminate the need for Howard Road SE to serve as a ramp and

- A widened Martin Luther King, Jr. Avenue bridge over Suitland Parkway

Elements that distinguished Build Alternative 2 from Build Alternative 1 included the following:

- An at-grade intersection at South Capitol Street and M Street, eliminating the current grade separation
- A four-lane signalized traffic oval at South Capitol Street, Potomac Avenue, and Q Street SW
- A three-lane signalized traffic circle at South Capitol Street, Howard Road SE, and Suitland Parkway, replacing the existing series of ramps that connect the three roadways
- Conversion to an urban diamond interchange at I-295 and Suitland Parkway, replacing the existing partial cloverleaf interchange and
- An interchange at Martin Luther King, Jr. Avenue SE and Suitland Parkway

Further information about Build Alternatives 1 and 2 can be found in Section 2.2 of the FEIS. The FEIS Preferred Alternative is described in Section 2.1.3 below.

2.2.3 FEIS Preferred Alternative

The FEIS Preferred Alternative would transform the existing South Capitol Street Corridor into a grand urban boulevard, as envisioned in the L'Enfant Plan. The transformed corridor would support other major public and private actions within the vicinity of South Capitol Street.

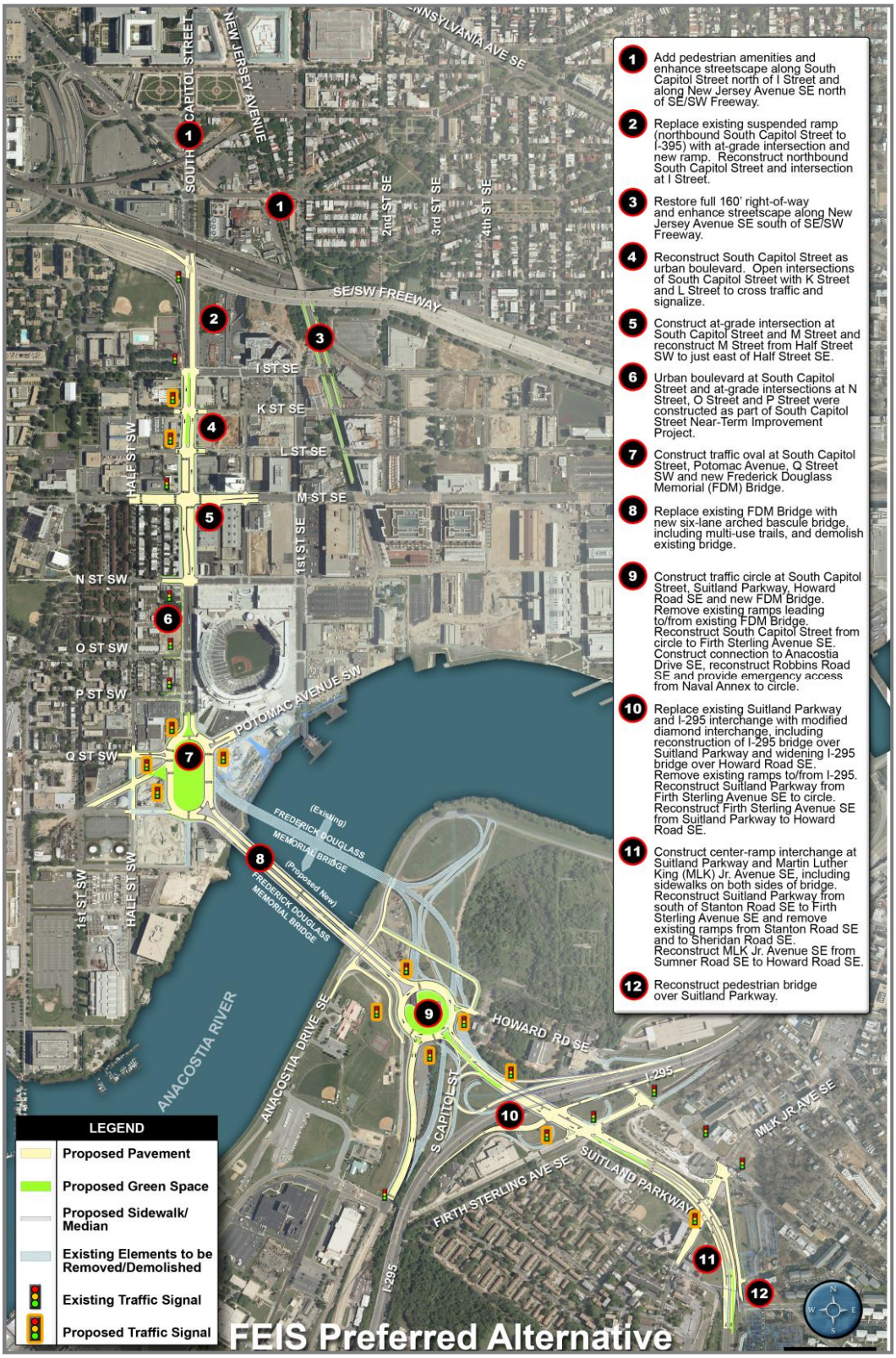
The FEIS Preferred Alternative would create an urban gateway that physically and aesthetically links the U.S. Capitol and the District's Monumental Core, improves safety, accessibility, and multimodal mobility, and supports economic development. The FEIS Preferred Alternative would meet the purpose and need for the Project. The FEIS Preferred Alternative, which is illustrated in Figure 2-3, would:

- Rebuild South Capitol Street as a six-lane boulevard with landscaped median west of the Anacostia River
- Reconstruct at-grade intersections along South Capitol Street at I, N, O, P, K, L, and M Streets
- Reconstruct the existing ramp from northbound South Capitol Street to I-395 as an at-grade intersection
- Construct a four-lane signalized traffic oval connecting South Capitol Street, Potomac Avenue and Q Street SW
- Replace the existing Frederick Douglass Memorial Bridge with an arched bascule bridge (Figure 2-4) that includes bicycle and pedestrian access and remove the existing bridge
- Construct a traffic circle at the eastern approach to the new Frederick Douglass Memorial Bridge to connect South Capitol Street, Suitland Parkway and Howard Road SE
- Extend Anacostia Drive to the north gate entrance of the U.S. Naval Support Facility Anacostia

- Construct an access road from Anacostia Drive to Howard Road and the traffic circle
- Replace the existing Suitland Parkway/I-295 interchange with a modified diamond with a two-lane loop ramp for I-295 southbound at Suitland Parkway, and a new traffic signal at the merge point with Suitland Parkway
- Reconstruct the I-295 bridge over Suitland Parkway
- Widen the I-295 bridge over Howard Road
- Construct streetscape improvements along New Jersey Avenue
- Widen the Martin Luther King, Jr. Avenue overpass at Suitland Parkway to accommodate a new multi-use trail
- Construct a single-point center ramp interchange to create new access between Suitland Parkway and Martin Luther King, Jr. Avenue and eliminate existing ramps between Suitland Parkway, Sheridan Road and Stanton Road
- Reconstruct the pedestrian over-pass over Suitland Parkway between Sheridan Road and Barry Farms
- Implement signed bicycle routes along New Jersey Avenue and throughout the Project Area to provide connections and improved access to the Anacostia Riverwalk Trail, the riverfront, and Historic Anacostia
- Install unifying landscape features at the intersections of South Capitol Street and Potomac Avenue and South Capitol Street and Suitland Parkway to visually anchor the two ends of the new Frederick Douglass Memorial Bridge

See Section 2.2 of the FEIS for further information.

Figure 2-3: Design Features of the FEIS Preferred Alternative



District Department of Transportation

Figure 2-4: FEIS Arched Bascule, Moveable Bridge Concept

2.2.4 Risks to the FEIS Preferred Alternative

Following the release of the FEIS for public review, the bridge alignment of the Frederick Douglass Memorial Bridge was evaluated in terms of design efficacy, constructability, cost, right-of-way requirements, environmental considerations, and other factors. The evaluation identified the following potential risks to project construction:

- Acquisition of 5.2 acres of United States Navy (USN) property at the JBAB would require an Act of Congress with no guarantee that the property could be obtained.
- Relocation of an existing USN fuel pier, located approximately 300 feet downstream from the existing bridge. The FEIS did not identify a new location for the pier.
- Realignment of a privately-operated helipad, located on the west side of the Anacostia River near the new proposed bridge approach, could cause flight surface conflicts (per Federal Aviation Administration criteria).
- Reconstruction of a 65-year-old levee, used to protect the east side of the river from storm surges would conflict with USACE's recommendation to avoid reconstructing the levee.
- Relocation of two fiber optic cables and a 69-kilovolt PEPCO power cable, located under the Anacostia River.
- Remediation of contaminated soils, located near the proposed west abutment and traffic oval.

The identified risks led DDOT to consider revising the alignment of the Frederick Douglass Memorial Bridge in the FEIS Preferred Alternative. The alignment was relocated parallel to and

directly adjacent to the south side or downstream from the existing bridge superstructure. This alignment would preclude operating the swing span during the estimated three years needed to construct the new bridge. The relocated bridge alignment would avoid impacting the JBAB property, and minimize or eliminate the impacts associated with the remaining risks. The potential realignment presented opportunities to revisit the design of the east traffic circle in keeping with the goal of developing a gateway to the District's Monumental Core. Other design elements of the FEIS Preferred Alternative were evaluated for risks. For example, a change to the FEIS Preferred Alternative design for the interchange at Suitland Parkway and Martin Luther King, Jr. Avenue SE was made to address:

- The single point urban interchange from Suitland Parkway to Martin Luther King, Jr. Avenue SE which would impact a contributing resource to Suitland Parkway, a historic property
- Left-side entrances merging onto Suitland Parkway from Martin Luther King, Jr. Avenue SE creating potential safety issues
- Right-of-way issues at the intersection of the South Capitol and M Streets requiring revisions to the lane configuration
- In addition, the existing ramps, which allow traffic movements to and from South Capitol Street to I-395 and I-695, would create safety and operational issues. The FEIS did not identify the need for reconfiguration at these ramp locations.

Since completing the FEIS, DDOT investigated the types of marine vessels and navigation requirements for bridge openings using existing historical, current, and forecast data. This information is included in the *Anacostia River Navigation Evaluation Report* (DDOT, 2014) (Appendix A). Records indicated that the bridge occasionally opened for marine vessels. According to bridge records, the swing span was opened 21 times from September 2002 to November 2012, excluding maintenance openings, and only four times since 2007. Replacing the movable bridge with a fixed bridge would result in substantial cost savings.

The *Anacostia River Navigation Evaluation Report* (DDOT, 2014) (Appendix A) concluded that the proposed 42-foot vertical clearance and the 150-foot horizontal clearance for the fixed span replacement bridge would be expected to accommodate 99.8 percent of the existing and projected marine vessels on the river. In addition, the report indicated that the cost difference between constructing a fixed span bridge and an arched bascule moveable span bridge (as proposed by the FEIS Preferred Alternative) would be approximately $140 million (DDOT, 2014). Because of this additional study, a moveable span bridge was eliminated from further study. A fixed span bridge was proposed for the Project. Based on the information above, the FEIS Preferred Alternative was eliminated from further study and a new build alternative, the Revised Preferred Alternative, was proposed for the Project.

2.3 Revised Preferred Alternative

The South Capitol Street Corridor was organized by segments (numbered 1 through 5) for construction planning purposes. Figure 2-5 illustrates the following segments:

- Segment 1 – Areas immediately west and east of the Anacostia River (includes a new bridge and traffic ovals on both sides of the river)
- Segment 2 – I-295 and the area where Suitland Parkway connects with South Capitol Street
- Segment 3 – Suitland Parkway east of Firth Sterling Avenue
- Segment 4 – South Capitol Street from N Street to D Street
- Segment 5 –New Jersey Avenue SE between M Street SE and D Street SE. (The FEIS limits extended north beyond D Street to C Street)

The South Capitol Street Project is estimated to cost $1.033 billion. Specifically, Segment 1 is estimated to cost approximately $480 million, Segment 2 approximately $223 million, Segment 3 approximately $135 million, Segment 4 approximately $153 million, and Segment 5 approximately $42 million. While the five segments are evaluated as one project, construction will be staged or programmed for discrete construction elements as funding permits.

The following text summarizes each segment of the Revised Preferred Alternative. The logical termini and independent utility is described in Section 2.5 of the FEIS and did not change as a result of development of the Revised Preferred Alternative. The Project Area encompasses South Capitol Street between Suitland Parkway at Martin Luther King, Jr. Avenue SE on the southeast end of the corridor and Independence Avenue on the north end of the corridor (see Figure 1-1). The western and eastern boundaries north of the Frederick Douglass Memorial Bridge are located at 2nd Street SW and 2nd Street SE. Figure 2-6 illustrates the design features of the Revised Preferred Alternative.

Figure 2-5: Project Segments along the South Capitol Street Corridor

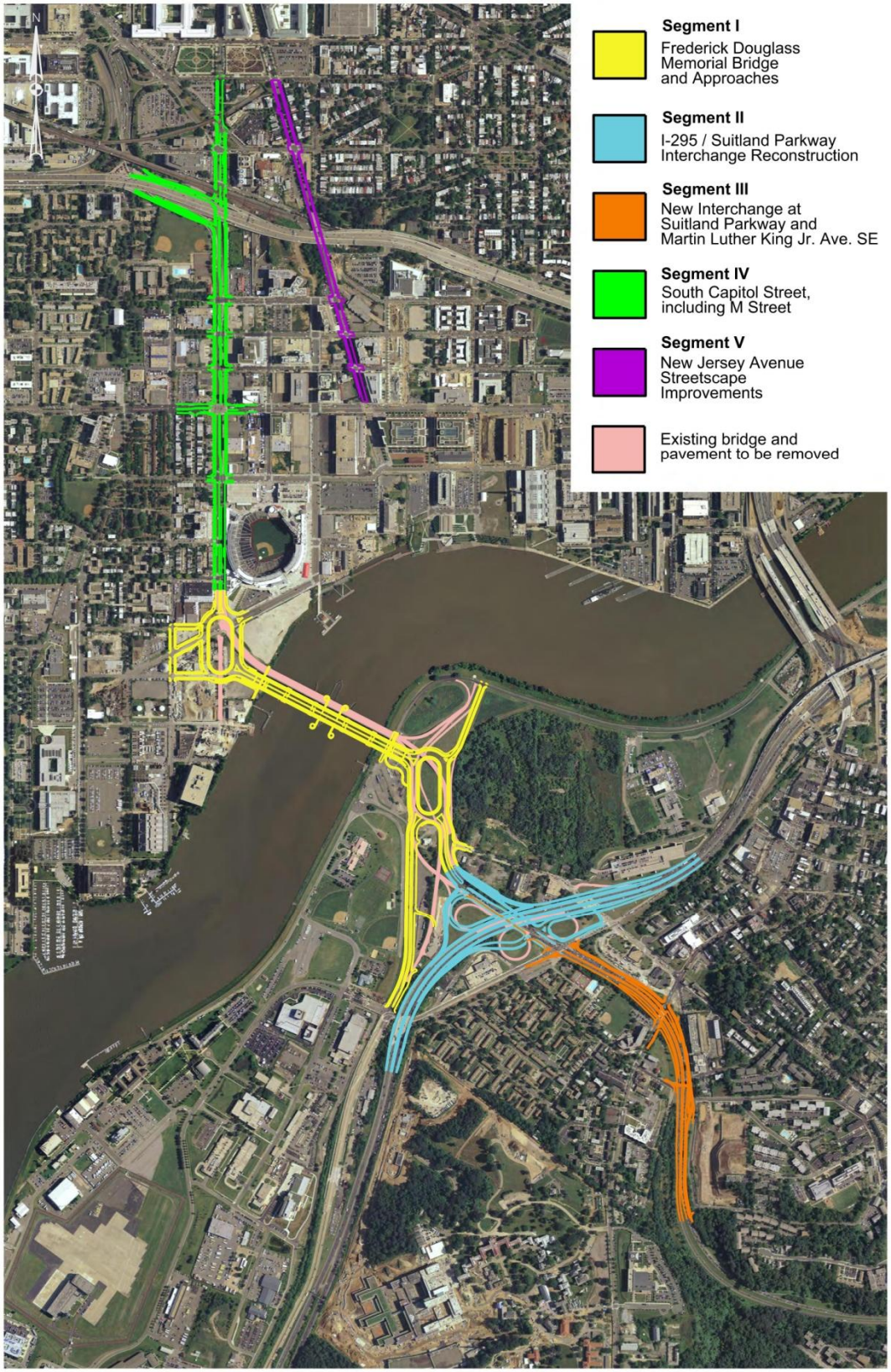
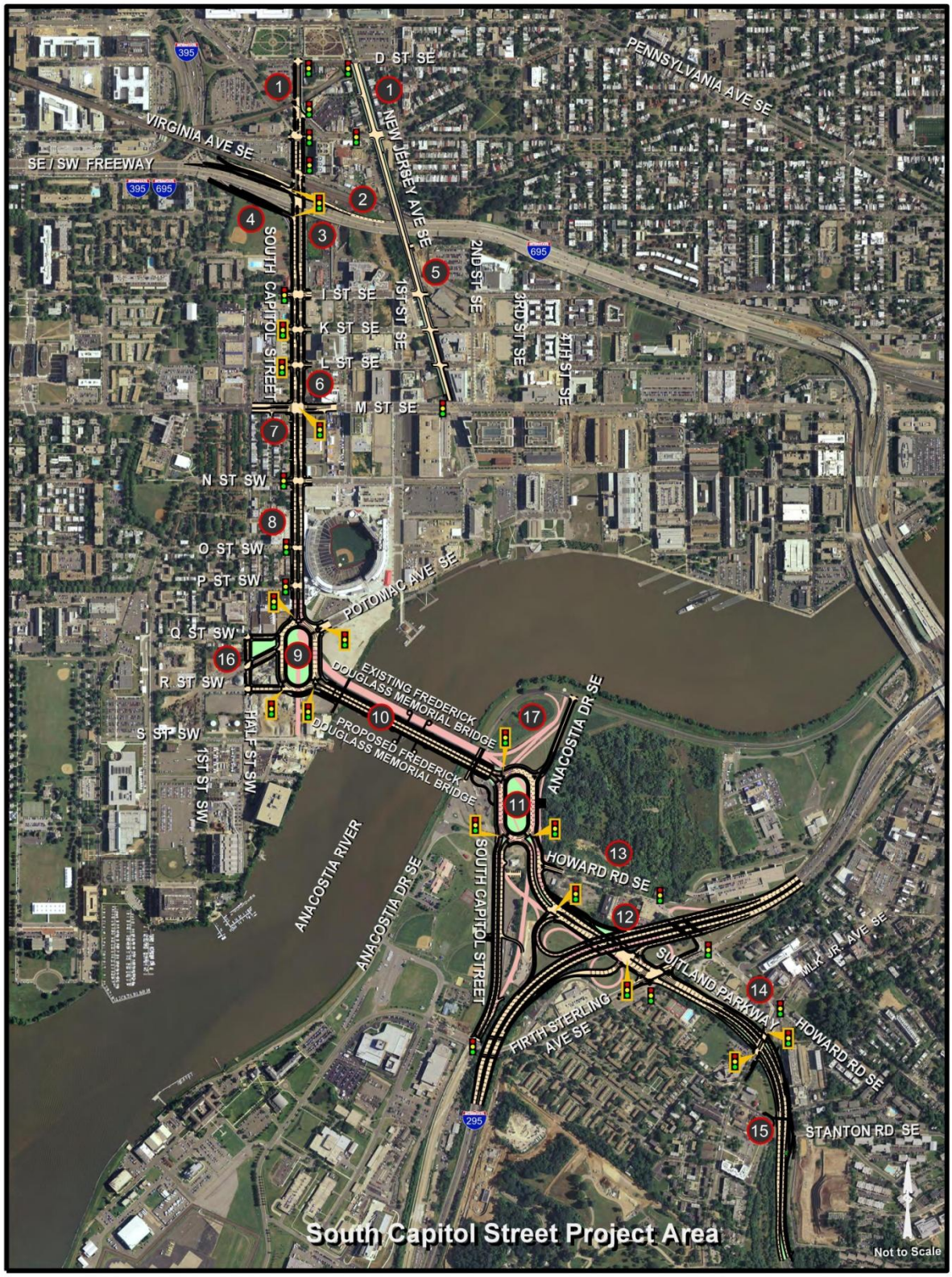


Figure 2-6: Design Features of the Revised Preferred Alternative



LEGEND

- Proposed Pavement
- Proposed Green Space
- Proposed Sidewalk / Median
- Existing Elements to be Removed / Demolished
- Existing Traffic Signal
- Proposed Traffic Signal

1. Add pedestrian amenities and enhance streetscape along South Capitol Street north of I Street and along New Jersey Avenue SE north of SE/SW Freeway.
2. Restripe SE/SW Freeway westbound and close the outer most thru lane between exit and entrance ramps (to/from South Capitol Street). Restripe the existing exit ramp from single-lane to two-lane ramp without pavement widening.
3. Replace existing suspended ramp (north bound South Capitol Street to SE/SW Freeway) with at-grade intersection and new ramp.
4. Realign two existing ramps as compact diamond configuration (from SE/SW Freeway to southbound South Capitol Street, right turn only). Reconstruct sidewalk along South Capitol Street and replace pedestrian underpass with at-grade crossing.
5. Restore full 160' right-of-way and enhance streetscape along New Jersey Avenue SE south of SE/SW Freeway.
6. Reconstruct South Capitol Street as urban boulevard between SE/SW Freeway and just south of N Street. Open intersections of South Capitol Street with K Street and I Street to cross traffic and signalize.
7. Construct at-grade intersection at South Capitol Street and M Street and reconstruct M Street from Half Street SW to just east of Half Street SE.
8. Urban boulevard at South Capitol Street and at-grade intersections at O Street and P Street were constructed as part of South Capitol Street near-term improvement project. Resurface pavement, improve pedestrian amenities and enhance streetscape.
9. Construct (west) traffic oval at South Capitol Street, Potomac Avenue, Q Street SW, R Street SW, and new Frederick Douglass Memorial Bridge (FDMB).
10. Replace existing FDMB with new six-lane bridge including multi-use trails, and demolish existing bridge.
11. Construct (east) traffic oval at South Capitol Street, Suitland Parkway, new Anacostia Drive and new FDMB. Remove existing ramps leading to/from existing FDMB. Reconstruct South Capitol Street from east oval to Firth Sterling Avenue SE. Provide access to DC Water new poplar point pump station. Preserve existing pump station house.
12. Replace existing Suitland Parkway and I-295 interchange with modified diamond interchange, including reconstruction of I-295 bridges over Suitland Parkway, Firth Sterling Avenue, and Howard Road SE. Remove existing ramps to/from I-295. Reconstruct Suitland Parkway from Firth Sterling Avenue SE to east oval. Reconstruct Firth Sterling Avenue SE from Suitland Parkway to Howard Road SE.
13. Construct new and improved pedestrian/bike connections throughout the project area including a new pedestrian/bike path along Suitland Parkway connecting Firth Sterling Avenue and the east oval
14. Construct compact diamond interchange at Suitland Parkway and Martin Luther King (MLK) Jr. Avenue SE. Preserve existing MLK bridge over Suitland Parkway. Reconstruct Suitland Parkway from south of Stanton Road SE to Firth Sterling Avenue SE and remove existing ramps from Stanton Road SE to Sheridan Road SE.
15. Reconstruct pedestrian bridge over Suitland Parkway.
16. Restore and enhance landscape at U.S. Reservation 245.
17. Reconstruct existing one-way driveway to Anacostia Park into a two-way access driveway with two shared-use bike and pedestrian paths. Unneeded access roads within both the park and public right-of-way will be removed and converted into green space.

Revised Preferred Alternative Design Features

2.3.1 Segment 1

Segment 1 encompasses the Anacostia River and the land areas immediately adjacent on the west (near the Nationals Park and Buzzard Point) and east (near Anacostia and Poplar Point) ends of the river. The river flows in a north-south direction within the Project Area. The following sections describe the Revised Preferred Alternative regarding the bridge, motorized access on the surrounding road network, the bicycle and pedestrian network and streetscape improvements.

Frederick Douglass Memorial Bridge

The Revised Preferred Alternative's new bridge would be located parallel to and directly adjacent to the south side or downstream from the existing bridge superstructure (see Figure 2-7). The new bridge would be a fixed span accommodating a minimum vertical clearance of 42 feet below the structure and a horizontal clearance of 150 feet. The architecture for the new bridge would be determined as part of the design-build process for the Project as described in Section 2.4.

The new bridge in the Revised Preferred Alternative would support six travel lanes (three lanes in each direction), and bicycle/pedestrian paths. Bicycle and pedestrian paths are provided on both sides of the bridge. This includes an 8-foot pedestrian lane and a 10-foot bidirectional bicycle path, for a total width of 18 feet. Figure 2-8 illustrates the conceptual elevation for the Revised Preferred Alternative's new bridge.

Figure 2-7: Revised Alignment for the New Frederick Douglass Memorial Bridge (Revised Preferred Alternative)

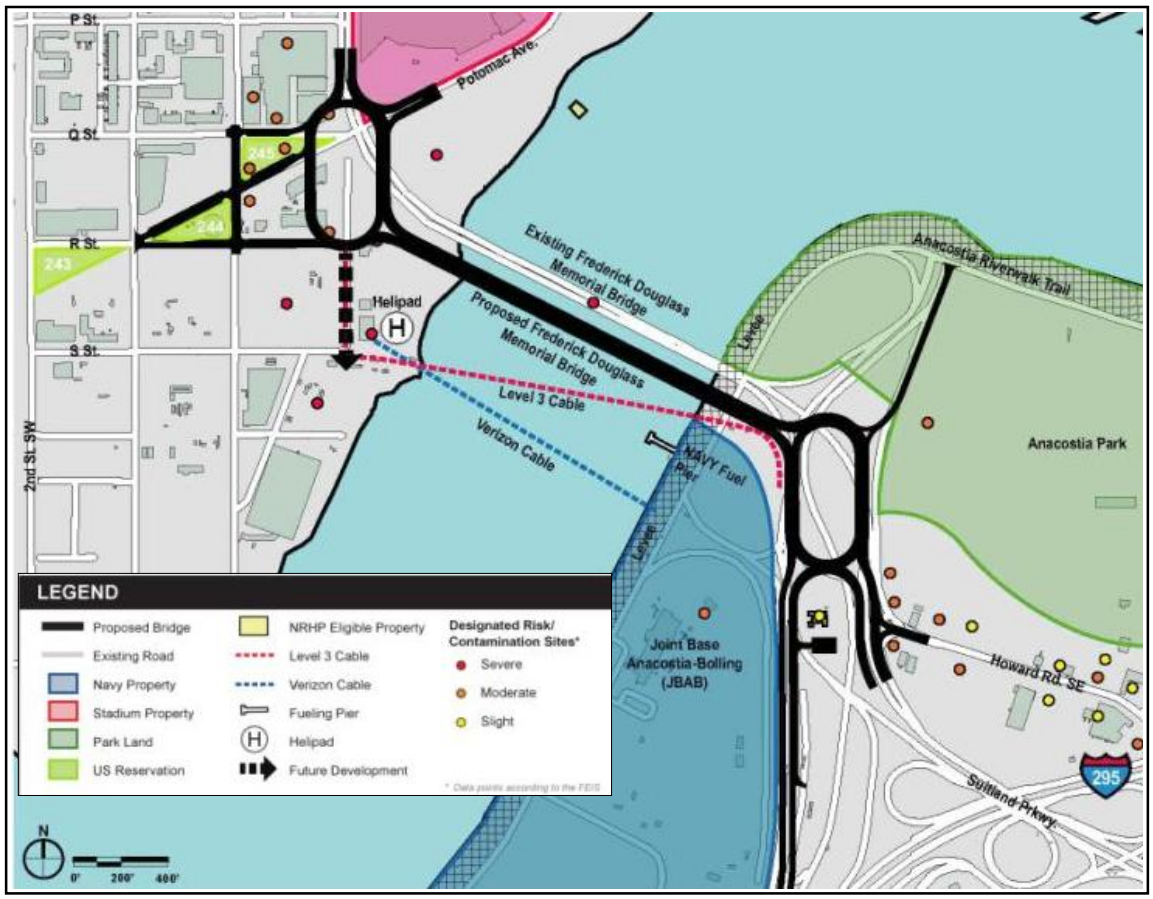
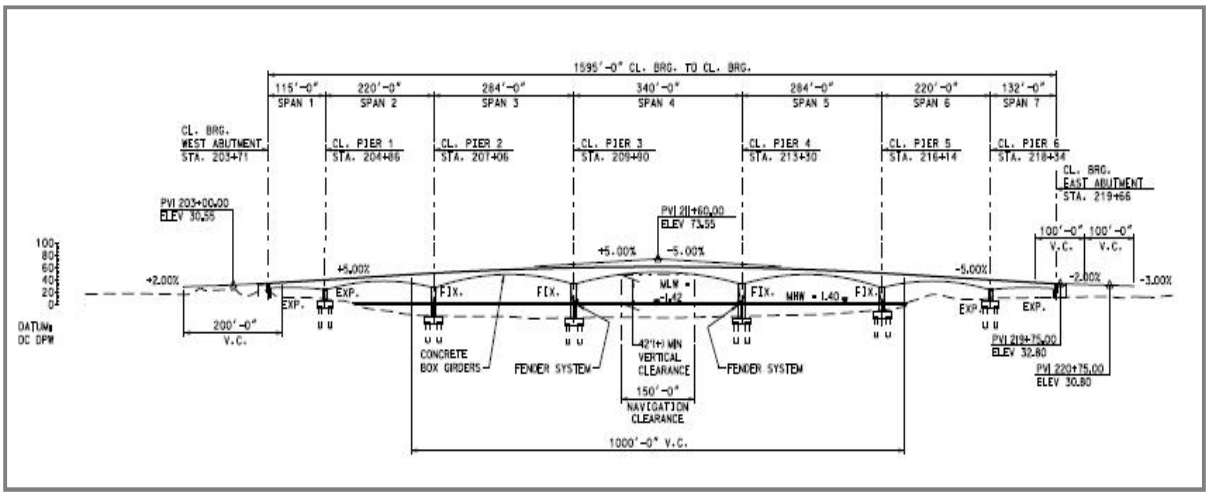


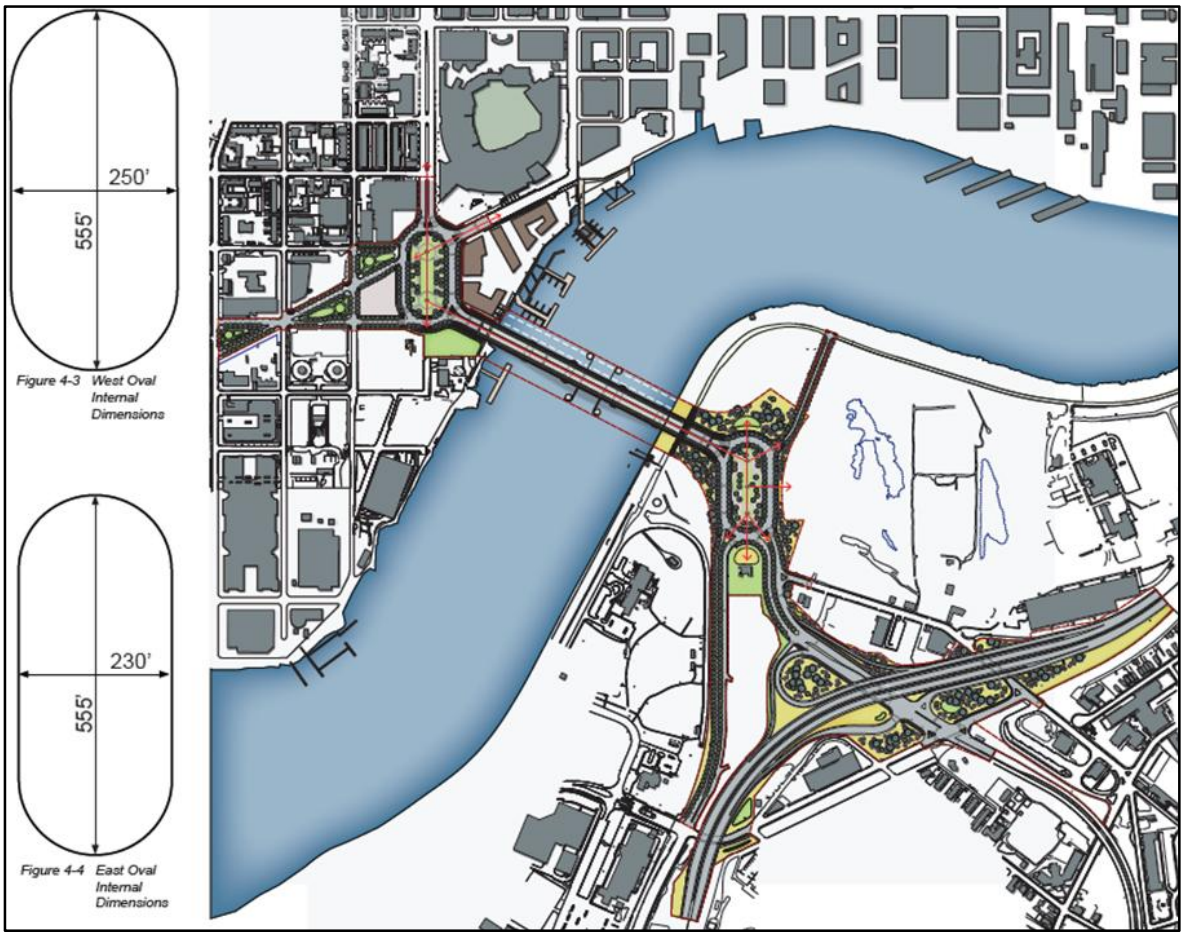
Figure 2-8: Conceptual Elevation of New Frederick Douglass Memorial Bridge (Revised Preferred Alternative)



Access

The Revised Preferred Alternative includes a west traffic oval that connects South Capitol Street, Potomac Avenue, O Street SW, R Street SW, and the new bridge. As shown in Figure 2-9, the traffic oval would be 250 feet by 555 feet. On the west side of the bridge near the traffic oval, the design would allow staircases and Americans with Disabilities Act (ADA) ramps to connect with the riverfront on both the north and south sides of the bridge. The number of lanes within the traffic oval would vary from two to four depending on the location within the oval, which is the same as proposed in the FEIS Preferred Alternative.

Figure 2-9: Revised Configuration for West and East Traffic Ovals



Instead of a traffic circle at the east side approach to the new bridge, the Revised Preferred Alternative would include a traffic oval similar in size and scale to the traffic oval on the west side of the river (see Figure 2 9). The design for the east traffic oval was closely coordinated with staff from the DC State Historic Preservation Office (DC SHPO), the U.S. Commission of Fine Arts (CFA), and the National Capital Planning Commission (NCPC), resulting in an aesthetic match of both the west and east traffic ovals. The east traffic oval would be located completely within DDOT right-of-way. It would connect the new Frederick Douglass Memorial Bridge, the

realigned South Capitol Street and Suitland Parkway. The number of lanes within the oval would vary from three to four depending on the location within the oval.

The east traffic oval will necessitate the closure of the existing roads providing public access to the Poplar Point section of Anacostia Park. To mitigate the loss of access and in coordination with the NPS, the agency with jurisdiction over the park, the Revised Preferred Alternative will reconstruct the existing single-lane one-way access road that links Suitland Parkway and I-295 (via Howard Road) to Anacostia Drive SE, which provides roadway circulation within the park. The new access road will provide one lane in each direction. It will connect the northeast leg of the east traffic oval with Anacostia Drive, thereby maintaining access to the park for motorists traveling on South Capitol Street, Suitland Parkway, and I-295.

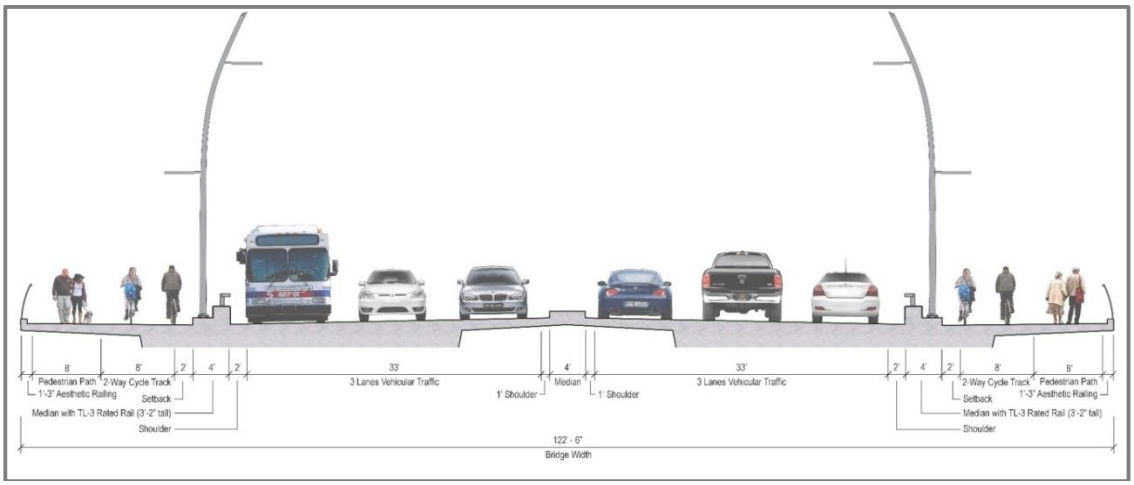
Other existing ramps linking Anacostia Drive SE to South Capitol Street within both park property and DDOT right-of-way will be removed as they will no longer be needed, resulting in a net loss of road pavement, and a large contiguous green space at the gateway to the park. In addition, a 12-foot-wide shared use path (suitable for pedestrians and cyclists) constructed of pervious materials will be provided on each side of the new access road. This will connect the Riverwalk Trail in the park with the South Capitol Street shared use paths. The NPS will maintain jurisdiction over the reconstructed access road and the shared use paths within the park boundary.

The east traffic oval in the Revised Preferred Alternative would not directly connect with Howard Road in the near term. Instead, the initial configuration of Howard Road would connect directly with Suitland Parkway

Pedestrian and Bicycle Facilities

The bicycle and pedestrian paths would be located on opposite sides of the Frederick Douglass Memorial Bridge. However, as shown in Figure 2-10, each path would be approximately 18 feet wide. Each path would provide separate travelways for cyclists and pedestrians. For cyclists, both paths would accommodate two-way traffic.

Figure 2-10: Revised Cross-Section



Streetscape

The interior of the east traffic oval would accommodate a future monument or memorial, either in the northern or southern half of the traffic oval. The specific design of sidewalks, including materials, would be determined during the design-build process, which will include a visual quality framework to guide preparation of plans for the streetscape (see Section 2.4).

Figure 2-11 illustrates the conceptual landscaping plan for the east traffic oval. The DC Water and Sewer Authority (DC Water) Poplar Point Pump Station would be located beyond the east traffic oval, a change from the FEIS Preferred Alternative, in which the building was to be located within the east traffic circle.

Figure 2-11: Conceptual Landscaping Plan for the East Traffic Oval

2.3.2 Segment 2

Segment 2 encompasses I-295 and the area between South Capitol Street SE and Firth Sterling Avenue SE, including Suitland Parkway.

As described below, the most notable design features are derived from new information regarding the condition of interstate highway bridge structures within the Project Area.

Structures

Following publication of the FEIS, the I-295 bridge over Firth Sterling Avenue SE was identified as needing to be widened to improve safety for vehicles traveling on the ramps to and from I-295 south of Suitland Parkway. Due to the complex geometric configuration of the existing bridge, together with its age, a revised alternative involving complete replacement with a single span bridge was developed. The bridge over Firth Sterling Avenue SE also spans an inactive railroad right-of-way owned by CSX Transportation, Inc. (CSXT).

Geometry

Suitland Parkway would be widened to accommodate three lanes in each direction. The roadway would be striped for two lanes in each direction, east of I-295 only. Loop ramps were realigned to minimize impacts to the DC Water Poplar Point Pump Station during deep tunnel shaft construction.

The Revised Preferred Alternative for Segment 2 is consistent with the current alignment of Suitland Parkway under I-295. The Revised Preferred Alternative maintains the alignment of Suitland Parkway. The Revised Preferred Alternative shifts Ramp F to the west, from Suitland Parkway to northbound I-295.

Changes in Access

FHWA requested an extension of Ramp B, which accommodates vehicle movements from southbound I-295 to westbound Suitland Parkway. This would reduce the grade of Ramp B from 9 percent (substandard for an interstate highway ramp) to 6.5 percent. This change would require partial acquisitions of five properties, including two used by schools located along Howard Road SE. The FEIS Preferred Alternative included these acquisitions; however, the Revised Preferred Alternative requires less property from the schools. The Revised Preferred Alternative would not impact school buildings.

Pedestrian and Bicycle Facilities

The Revised Preferred Alternative provides sidewalks along Suitland Parkway. The sidewalks improve connections between the east traffic oval and local roads. A new pedestrian tunnel will be provided under Ramp B to eliminate the at-grade crossing.

Streetscape

The Revised Preferred Alternative focuses landscaping in the green space of the interchange of I-295 and Suitland Parkway (see Figure 2-12). The plants would be native species and provide adequate sight distances for vehicles exiting the highway. The selected designer/contractor

would determine the specific design for sidewalks, including materials. The preparation of plans will be part of a visual quality framework (see Section 2.4). Where applicable, DDOE's Maximum Extent Practicable Process should be used in the streetscape design to incorporate best management practices for stormwater management.

Figure 2-12: Conceptual Landscaping Plan at Interchange of I-295 and Suitland Parkway

2.3.3 Segment 3

Segment 3 includes Suitland Parkway from Firth Sterling Avenue SE east to just south of Stanton Road SE (see Figure 2-13).

Figure 2-13: Existing Suitland Parkway Intersection at Firth Sterling Avenue SE

The modifications to the Revised Preferred Alternative in Segment 3 focus on improving access to Martin Luther King, Jr. Avenue SE, safety on Suitland Parkway, and preserving the existing bridge, a contributing resource to Suitland Parkway. Suitland Parkway is a historic property listed in the National Register of Historic Places (NRHP).

Access

The Revised Preferred Alternative would convert the overpass at Martin Luther King, Jr. Avenue SE to an urban diamond interchange, instead of an interchange with center ramps. The new ramps on both sides of Suitland Parkway would accommodate all vehicle movements between Suitland Parkway and Martin Luther King, Jr. Avenue SE. The elimination of the center ramp would avoid altering the Martin Luther King, Jr. Avenue SE bridge over Suitland Parkway. However, because the proposed urban diamond interchange would not require the modification of the bridge itself, the cross-section of Martin Luther King, Jr. Avenue SE at the overpass would not change. The bridge is a contributing resource to Suitland Parkway, which is a historic property listed in the NRHP. The Revised Preferred Alternative would not impact or require reconstruction of Sheridan Road at Martin Luther King, Jr. Avenue SE and Howard Road.

Pedestrian and Bicycle Amenities

A sidewalk/bicycle path would be provided or upgraded along the north side of the reconstructed Suitland Parkway.

2.3.4 Segment 4

Segment 4 includes South Capitol Street from N Street to D Street (see Figure 2-14).

Figure 2-14: Existing South Capitol Street Intersection at I Street

Geometry

The Revised Preferred Alternative would create a grand urban boulevard along South Capitol Street with at-grade intersections.

The Revised Preferred Alternative would create a grand urban boulevard along South Capitol Street with at-grade intersections. To convert the existing grade-separated South Capitol Street/M Street intersection into an at-grade intersection, acceptable fill material will be required. New stormwater management facilities, per DDOE design requirements, and storm sewer system will be added for the proposed at-grade intersection which will tie into the existing storm sewer system. Existing walls will be demolished to the extent required to construct the at-grade intersection and the proposed stormwater management facilities and storm sewers.

The Revised Preferred Alternative would provide left turn access along South Capitol Street at three locations in addition to those provided by the FEIS Preferred Alternative. The locations are:

- Southbound South Capitol Street to I Street SE
- Southbound South Capitol Street to L Street SE
- Northbound South Capitol Street to I Street SW

These changes would increase connectivity at the intersection of South Capitol Street and M Street. In addition, M Street would accommodate a left turn lane northbound and southbound and two eastbound through lanes.

South Capitol Street would have a wider landscaped median between the west traffic oval and the Southeast-Southwest Freeway to emphasize its character as a grand urban boulevard. The Revised Preferred Alternative extends north of the Southeast-Southwest Freeway to D Street, continuing the character of the grand urban boulevard further along South Capitol Street.

Access

I-695 begins at 4th Street SW where I-395 turns to the north towards the 3rd Street/I-395 North Tunnel. Ramps from South Capitol Street connect to northbound I-395 and westbound I-695/westbound I-395. Three of the ramps to and from I-695 and I-395 would be reconfigured to improve safety and operations. Proposed activities include:

- Modifying Ramp H and I-695 southbound using pavement restriping to improve safety at the Ramp G merge area by providing two lanes to exit with minimal cost and impacts
- Providing a new access point from southbound South Capitol Street to Ramp G/GD (towards I-395 North Tunnel and westbound I-695/southbound I-395)
- Reconfiguring the existing Ramp E and Ramp EF and reconfiguring the South Capitol Street and I Street intersection as an urban interchange ramp

These activities would improve aesthetic and visual quality, safety, and traffic operations. The ramp for northbound South Capitol Street to westbound freeway vehicle movements would be reconfigured. The reconfigured ramps would require a signalized intersection with South Capitol Street, which eliminates the need for the existing pedestrian tunnel.

Pedestrian Amenities

The Revised Preferred Alternative contains wide landscaped areas that would increase the separation of pedestrian and bicycle traffic from vehicular traffic. The Revised Preferred Alternative also provides a wide pedestrian refuge area to reduce pedestrian crossing distances across roadways.

Streetscape

The streetscape design specifically developed for South Segment 4 includes several features that help provide a multimodal gateway to the U.S. Capitol and the Monumental Core. Because it is part of the urban street grid, the design provides pedestrian-oriented amenities. Preparation of streetscape improvements plans would reflect the visual quality framework (see Section 2.4).

2.3.5 Segment 5

Segment 5 encompasses New Jersey Avenue SE between M Street SE and D Street SE (see Figure 2-15).

Figure 2-15: New Jersey Avenue SE Looking North at E Street, SE

Geometry

The Plan of the City of Washington included New Jersey Avenue SE among the principal diagonal avenues with an established right-of-way of 160 feet. However, the existing right-of-way of New Jersey Avenue SE ranges between 50 and 180 feet wide within the project area. The geometry and streetscape concept would restore a consistent design to the avenue and reestablish the 160-foot-wide right-of-way between the SE-SW Freeway and M Street SE (see Figure 2-16). The proposed typical section on the north end of the street is provided on Figure 2-17. The Revised Preferred Alternative reduces the limits of improvement from Independence Avenue SE to south of the U.S. Capitol complex to D Street SE.

Streetscape

Preparation of streetscape improvements plans will reflect the visual quality framework (see Section 2.4).

Figure 2-16: Proposed New Jersey Avenue SE Typical Section between M Street SE and I-695

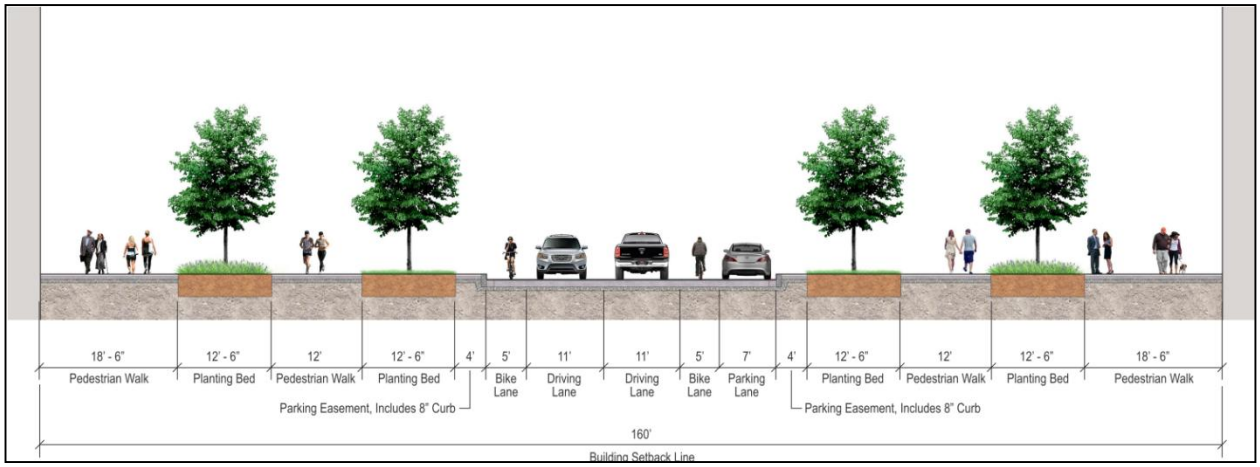
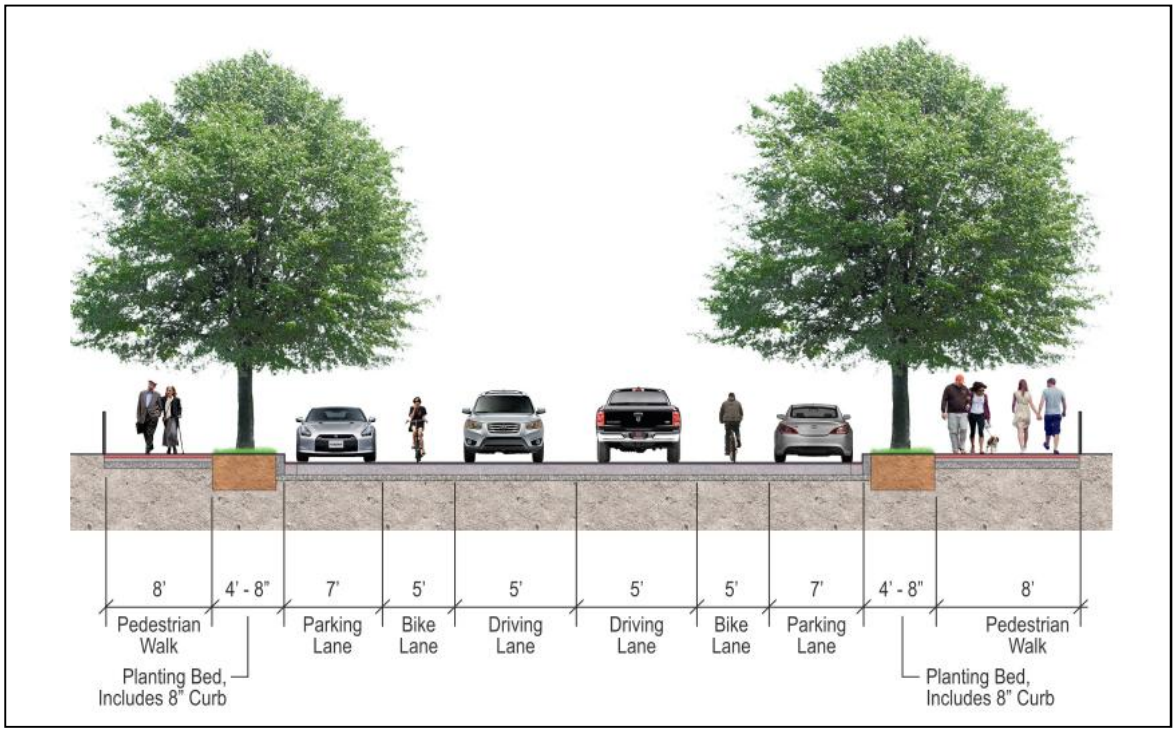


Figure 2-17: Proposed New Jersey Avenue SE Typical Section between E and D Streets SE



2.4 Visual Quality Management Process

DDOT is planning to use a design-build process to complete at least Segments 1 and 2 of the Project (see Section 2.3). Because the new Frederick Douglass Memorial Bridge is prominently located along the Anacostia River and is an important gateway into Anacostia and areas west of the river, the visual quality of the proposed design of the new bridge, traffic ovals and other elements of the Project will be a very important consideration when selecting a designer/contractor for each phase of the Project.

As part of the Request for Proposal, the prospective designer/contractors will be required to follow a visual quality manual for guidance. The visual quality manual will provide information regarding visual design elements and goals for the Project. The prospective designer/contractors will submit conceptual design concepts to DDOT for review and comment. This section describes the general framework and notable elements in the visual quality process for the Project, including the important visual considerations that will be part of the Project. Section 4.9 describes the visual impacts of the Revised Preferred Alternative, with regard to the visual framework herein provided in this section.

The South Capitol Street Corridor is centrally located in an area of public and private urban investment between the District's Monumental Core and the Anacostia River. The proposed replacement of the Frederick Douglass Memorial Bridge and streetscape elements of the

Project present a unique opportunity to accelerate this trend and encourage new investments in the District's neighborhoods. In addition, the improvements to the South Capitol Street Corridor are designed to enhance the gateway between Anacostia and the District's Monumental Core as envisioned by the L'Enfant Plan. These factors provided a critically important context for the Project, and influenced the approach for determining the Project's visual and aesthetic elements.

At the conclusion of the NEPA process and dependent on the FHWA decision as provided in the ROD, the selection of the designer/contractor will consider, the visual quality assessments contained within the technical proposals that the designer/contractors will submit for review. The visual quality management process described herein will include the identification of visual quality design goals, and a series of reviews to determine if a designer/contractor's technical proposal meets the visual design goals for the Project.

2.4.1 Visual Quality Framework

A visual quality framework will provide guidance to prospective designer/contractors in their approaches for visual quality and aesthetic design of the Project. This framework preserves the autonomy and flexibility among the prospective designer/contractors so each can create a coherent and integrated technical proposal that displays exemplary civic architecture and urban design.

Visual design goals will be developed for the Project based on multiple planning initiatives conducted by District and federal agencies, supplemented with extensive stakeholder coordination and input over the past several years. The visual design goals, which apply to the entire Project, will reflect the vision of providing a grand urban boulevard, which will be a gateway into the nation's capital, an iconic symbol of the District's aspirations in the 21st century, and a catalyst to revitalize local neighborhoods and the Anacostia Waterfront. The Project's visual design goals include:

- Transform South Capitol Street into grand urban boulevard and gateway to the District's Monumental Core
- Create an elegant and iconic new Frederick Douglass Memorial Bridge that reflects the classical sentiment of Washington's monumental bridges and is grounded in the traditions of great civic design in the District
- Enhance the Project Area by emphasizing:
  - Historic views along primary and crucial street corridors, such as the South Capitol Street viewshed
  - Views of the new bridge from various locations around the project site, especially from the existing and future riverfront parks and esplanades
  - Views along and across the Anacostia River to accentuate broad urban vistas
  - New views of the District and surrounding public spaces for users of the bridge

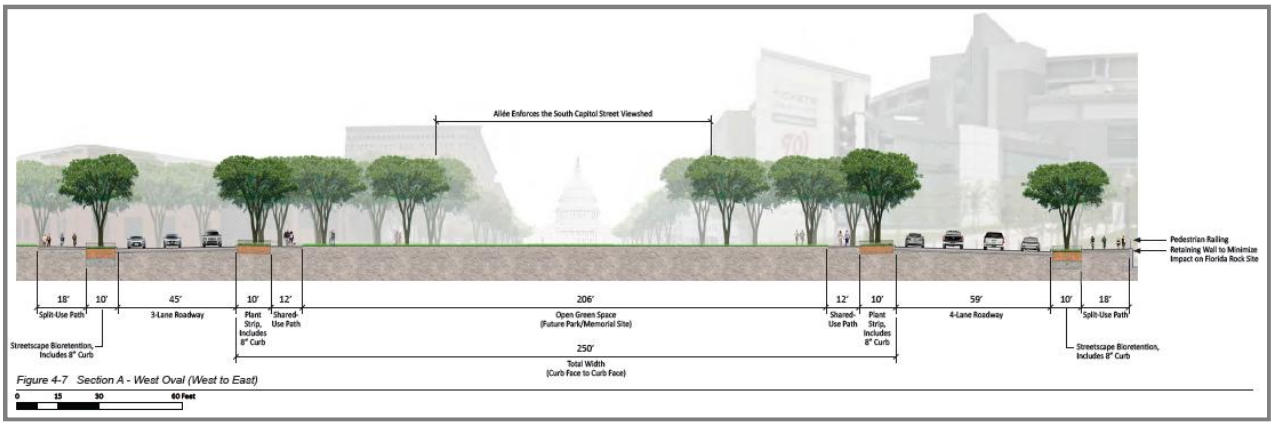
- Respect and celebrate the cultural and architectural history of the District
- Design project elements to complement contextual urban elements and properties determined to have historic significance
- Harmonize the proposed scale and height of the new bridge with the long-term projected growth of surrounding neighborhoods
- Showcase the Anacostia River as a valuable natural resource by providing enhanced pedestrian and bicycle access to waterfront areas on both shorelines
- Connect adjacent neighborhoods by improving bicycle and pedestrian facilities and better managing motor vehicle traffic throughout the corridor
- Integrate a network of open spaces that provide high-quality, people-oriented urban parks and destinations
- Use materials that are timeless in their appearance, exceptionally durable, and inspired by the great civic architecture of the District
- Pursue state-of-the-art landscape design that attracts and supports intensive pedestrian activity, while integrating sustainable management and restoration strategies
- Interpret the cultural legacy of Frederick Douglass into the design of the bridge and streetscape
- Design all aspects of the Project to encourage subsequent public and private investments that further expand the public realm
- Anticipate future nationally-significant commemorative works in, and adjacent to, the Project Area
- Establish an interim use program and design for the traffic ovals each end of the bridge to complement the adjacent land uses, and reinforce the views to and from the L'Enfant Plan

The following generally describes the visual quality objectives of the Project.

The roadway alignment and geometry must be a simple, logical and symmetrical framework consistent with the L'Enfant Plan where diagonal intersecting avenues are superimposed on a standard urban grid to create expansive viewsheds. For example, one of the goals is to develop South Capitol Street as one of the most prominent viewsheds in the District. The preservation of the southern axis, stemming from the U.S. Capitol, must be free of obstructions, such as signs or trees. The proposed traffic ovals are also an important element of Project's alignment and geometry. Both traffic ovals must be oriented in the center of South Capitol Street (see Figure 2-18) and share similar dimensions.

Figure 2-18: Northern View from Terminus of South Capitol Street on West Traffic Oval

s



The new Frederick Douglass Memorial Bridge should make its primary aesthetic impact through its position (alignment), and the shape and sizes of its structural elements. While the bridge will be a discrete visual entity, it should aesthetically appear to be part of a continuous urban corridor. All of the visible elements of the bridge, including secondary elements such as pier details and railings, should achieve a consistent family of shapes and be placed according to a recognizable geometric order so that the whole bridge appears as a single integrated design. Requirements for the new bridge include:

- Maintain the classical appearance of previous bridges in the District within a contemporary design
- Express structural elements by their position, size, shape, and their roles in the support of the bridge
- Avoid using elements, solely for aesthetic effect, which do not contribute to the support of the bridge
- Visually relate the bridge to the overall South Capitol Street Corridor. In particular, emphasize the visual importance of the traffic ovals at the each end of the bridge
- Provide a contemporary design for all details on the bridge including sidewalk pavement, lighting, railings, and belvederes (Belvederes are overlooks built into the superstructure that function as places for cyclists and pedestrians to pause and rest while crossing the bridge)
- Use a consistent shape for the structural elements of the bridge
- Coordinate the positions of all elements on the bridge surface to create a recognizable geometric order

2.4.2 Visual Quality Considerations

The Request for Proposal for a designer/contractor will focus on achieving the Project's visual design goals. DDOT will continue to coordinate with the prospective designer/contractors during the procurement period to achieve visual goals.

Prospective designer/contractors will be required to formally submit at least two rounds of visual quality concepts prior to formally submitting their final technical and financial proposals. The visual quality concepts (VQC) represent the designer/contractors' approach for achieving the visual design goals for the Project. The designer/contractors will be required to present their visual quality concepts to DDOT. This presentation will give DDOT an opportunity to review and comment on the visual quality concepts. The visual quality concept submissions will give the prospective designer/contractors an opportunity to provide confidential design ideas to DDOT without compromising the integrity of the design-build process.

DDOT will invite staff from DC SHPO, NCPC, and CFA to participate as part of an Aesthetic Review Committee (ARC) to review and provide DDOT comments on designer/contractors conceptual visual quality submissions. Those participating in the ARC will be required to sign confidentiality statements and will be subject to DDOT's conflict of interest requirements.

The DDOT Evaluation Committee and the ARC will review each visual quality concept submission prior to the confidential presentations by each team. DDOT may provide comments on the acceptability of each visual quality concept submission. However, each team will be responsible for ensuring that its final visual quality concept submission complies with the requirements of the Request for Proposal.

DDOT will select a designer/contractor based on a determination of "best-value" which will include consideration of the visual quality of the proposed design.

2.5 Other Projects in Project Vicinity

The FEIS documented several major transportation projects that were recently completed, underway, or proposed within or near the Project Area (see Section 2.6 of the FEIS). The following section updates the status of these projects and discusses new projects since the FEIS.

Frederick Douglass Memorial Bridge Rehabilitation

This project was completed in 2007 to address near-term needs for the existing Frederick Douglass Memorial Bridge. Additional structural repairs were made to the existing structure in 2010, but no major activities have occurred since 2010.

South Capitol Street Near-Term Improvements

The South Capitol Street Near-Term Improvements Project reconstructed 1st Street SE (from I Street SE to Potomac Avenue SE), Potomac Avenue (from 1st Street SE to Half Street SE), N Street SE (from 1st Street SE to South Capitol Street), and I Street SE (from New Jersey Avenue SE to South Capitol Street). The reconstruction and street widening, which occurred throughout Wards 6 and 8, included streetscape, streetlight, and traffic signal improvements. In addition, this project constructed several minor pedestrian improvements, such as crosswalk striping and ramp installations, in compliance with the Americans with Disabilities Act. This project was completed in 2008.

DC Streetcar

Anacostia Initial Line

Phase 1 of this project, as described in the FEIS, would include the segment between Suitland Parkway and the Car Barn/Maintenance Area. Construction was completed in the summer of 2013 for the proposed Testing and Commissioning Site. The rest of Phase 1, the section between Suitland Parkway and the Anacostia Station, and Phase 2 of the project are currently under study by DDOT The South Capitol Street Project would not preclude the Anacostia Initial Line as planned.

Anacostia SE/SW DC Line

The Anacostia SE/SW DC Streetcar line (also referred to as the Anacostia Initial Line-M Street-Buzzard Point line) would connect the Anacostia Initial Line with Buzzard Point via M Street. The streetcar line has been studied as part of the M Street SE/SW Transportation Study Final Report completed in December 2012 (DDOT). The study analyzed how to integrate transit, bicycling and walking with motor vehicle traffic in the area along M Street SE/SW, and the Southwest waterfront from 12th Street SE to 14th Street SW and from the Southwest/Southeast Freeway south to the Anacostia River/Washington Channel.

M Street Southeast-Southwest Special Events Study Final Report

A study to analyze the area during special events was completed in May 2014 (DDOT). If implemented, this project could potentially affect the configuration and operation of the M Street / South Capitol Street intersection.

Martin Luther King, Jr. Avenue Great Streets

As part of the Great Streets Program, streetscape improvements have been implemented along Martin Luther King, Jr. Avenue. Additional improvements were considered and evaluated as part of the Anacostia Extension Streetcar Project. DDOT is currently completing an Environmental Assessment for this project.

11th Street Bridges Project (Phases 1 and 2)

The construction of Phase 1 of this project was completed in 2013. Phase 1 included the completion of three new bridges that provide direct connections between the Southeast-Southwest Freeway and both directions of I-295, fixing a long-standing deficiency that forced motorists to use local streets to connect between both freeways. The new link between Southeast-Southeast Freeway and I-295 has been designated as I-695.

Phase 2 of the project will further improve connections between the Southeast-Southwest Freeway and Virginia Avenue SE with the new outbound 11th Street Freeway Bridge. It will create boulevard connections between 11th Street and Pennsylvania Avenue SE. Phase 2 is ongoing and is expected to be completed in late 2015.

Anacostia Riverwalk Trail

Currently, 12 of the total 20 miles of the Anacostia Riverwalk Trail are open and heavily used. Most recently, the trail along Maine Avenue and the two fiberglass bridges over railroad tracks

just north of the John Philip Sousa Bridge were opened. The remaining sections of the Anacostia Riverwalk Trail that still need to be completed include sections at Kenilworth Gardens, Buzzards Point and Oxon Run which are beyond the South Capitol Street Project Area. The remaining sections are either in design or under construction.

Tunnel between I-295 and I-395

The FEIS noted this tunnel project. However, since the current *2013 Update to the Financially Constrained Long-Range Transportation Plan* (CLRP) (Metropolitan Washington Council of Governments (MWCOG), 2013) does not include the project, it is no longer considered active.

Water Coach/Taxi

The District has been unable to establish a water taxi service operating on regular schedules and routes along the Anacostia River. A few private operators, such as the Potomac River Boat Company and the American River Taxi, have provided service during special events, such as during game days for the Washington Nationals. The American River Taxi website noted that the company has suspended the operation of regularly scheduled services for visitors and commuters until it can incorporate a new fleet that support expanded services for commuter trips.

In June 2014, the US Department of Transportation (USDOT) awarded $123.5 million for passenger ferry projects and ferry operators throughout the United States and selected territories. One of the projects receiving funding is for two ferry vessels for a new commuter passenger ferry service connecting Jones Point Park in Alexandria, Virginia to the JBAB military installation in Southeast Washington, D.C. The Virginia Department of Transportation (VDOT), in partnership with the Northern Virginia Regional Commission (NVRC), will receive $3.38 million to provide a new transit option for military and federal employees traveling to JBAB and the U.S. Department of Homeland Security's future headquarters at St. Elizabeths campus.

DC United Soccer Stadium

Preliminary plans have been presented for a new soccer stadium for DC United at Buzzard's Point in Southwest Washington, DC. The stadium would be located within the South Capitol Street Project Area, southwest of the west side traffic oval. The two projects would overlap specifically at Reservation 243 and 244, and along R Street SW. Because a new use has been proposed for these properties by the current owner, the executed Section 106 Memorandum of Agreement for the proposed Project is in the process of being amended to remove the restoration of Reservations 243, 244, and 245 as a Project commitment.

Anacostia Waterfront Initiative: Transportation Master Plan – 2014 Update

The Anacostia Waterfront Initiative (AWI) was launched in March 2000 and documented in the *AWI Framework Plan* (OP, 2003). DDOT and FHWA created the *AWI Transportation Master Plan* (DDOT, 2005) to implement the transportation element of the *AWI Framework Plan*. DDOT initiated the *AWI Transportation Master Plan* to organize the studies and projects underway in the AWI study area into a comprehensive program. It describes DDOT's project development process for implementing the AWI vision. It also provides details of each project's current progress, as well as a snapshot of the status of DDOT's AWI transportation program as a whole.

The *AWI Transportation Master Plan* was updated in 2007 and 2008. The updated *AWI Transportation Master Plan* (DDOT, 2014) presents the current status of AWI transportation projects, and presents the current implementation schedule for the following projects:

- South Capitol Street Corridor
- Frederick Douglass Memorial Bridge Rehabilitation
- 11th Street Bridges (both phases)
- DC United Soccer Stadium
- Anacostia Riverwalk Trail
- DC Street Car
- Water Coach/Taxi
- I-295/I-395 Tunnel (no longer active)

Firth Sterling Trail

This project would be a multi-use trail connecting the South Capitol Street Trail (at Firth Sterling and South Capitol Street intersection) with the Anacostia Metrorail Station (just northeast of the Suitland Parkway and Firth Sterling intersection). The length of the trail, including intersection crossings, will be approximately 2,400 linear feet.

The majority of the trail will be located within the CSXT Railroad Shepherds Branch right-of-way that is being acquired in Fiscal Year (FY) 2015 by DDOT from CSXT. Due diligence on the right-of-way is presently underway by DDOT/AWI staff. The trail location is within the APE for the Revised Preferred Alternative.

The other option for the Firth Sterling Trail project would be to add it to the present South Capitol Street Trail. This project is nearing completion of the preliminary (30 percent) plans within a few weeks. Currently, it has no final design or construction funds obligated to the project. Based on the NEPA process required for acquisition of six easements from the JBAB, the South Capitol Street Trail design will not be finalized until next year at the earliest. Construction would probably not begin before fiscal year 2017.

chapter 3.0
affected environment

This chapter presents environmental conditions within, and immediately surrounding, the Project Area.

3.1 Summary of Affected Environment

This section summarizes the environmental conditions documented in the FEIS. It updates the descriptions of existing environmental conditions if current conditions substantively differ from those in the FEIS. The term substantively as used herein refers to a large magnitude of change in terms of number, size or extent of environmental resources. For example, the extensive amount of development in the Project Area has changed land use conditions from those described in the FEIS. For some of the environmental topics covered in the FEIS, the changes that have occurred since the FEIS are slight or minor and do not warrant an updated description of the affected environment for these particular topics. For example, as described below in Section 3.1.1 under "Air Quality", there were improvements to the monitored levels of certain air pollutants. However, overall air quality conditions are not any different now than at the time of the FEIS.

This section is divided into two sub-sections. The first subsection identifies those categories of environmental resources did not exhibit substantive changes since the publication of the FEIS in March 2011, and do not warrant updated descriptions for this document. Explanations supporting these evaluations are provided. The second subsection identifies environmental resources that exhibited substantive changes since the publication of the FEIS, and warrant additional descriptions for this document. The updated descriptions of the affected environment under these resources are provided in the body of this chapter.

3.1.1 No Substantive Changes in the Affected Environment from FEIS

Economy and Employment

The FEIS documented that the majority of the jobs within the Project Area are office-related (see Section 3.2 of the FEIS). This has generally remained the same as the majority of the land use has not substantially changed since 2011. However, the development of Nationals Park, and the associated restaurant and retail developments has increased the levels of retail employment in the Project Area.

Air Quality

The National Capital Interstate Air Quality Control Region, which is where the project area is located, is classified as a maintenance area for carbon monoxide (CO), a nonattainment area for particulate matter of less than 2.5 microns ($PM_{2.5}$) (for the 1997 standard), a marginal nonattainment area for ozone (O_3), and an attainment area for all other criteria pollutants. At the time of the FEIS, the project area was classified as a moderate nonattainment area for O_3 (see Section 3.5 of the FEIS). All other designations remain the same as reported in the FEIS. The Clean Air Act (CAA) requires that a *State Implementation Plan* (SIP) be prepared for each nonattainment area and a maintenance plan be prepared for each former nonattainment area that subsequently demonstrated compliance with the standards. A SIP is a compilation of a state's air quality control plans and rules that are approved by USEPA.

The Transportation Planning Board (TPB), housed within the MWCOG, produces two basic documents that serve as the basis for the regional mobile source air quality analysis. The first is the *Financially Constrained Long-Range Transportation Plan* (CLRP), which includes all major transportation projects and programs that are planned in the Washington region over the next 25 years. The second document, the *Transportation Improvement Plan* (TIP), lists projects and programs that will be funded in the next six years. The CLRP and the TIP utilize vehicle miles traveled (VMT) and emissions factors to determine emissions estimates for the entire transportation system. The analytical results, presented under the Transportation Conformity Rule, demonstrate that the CLRP and the TIP are consistent with the goals of the SIP.

The South Capitol Street Project is listed in the 2013 CLRP, which was approved by TPB on July 17, 2013 and by the USDOT on January 22, 2014 and the FY 2013-2018 TIP, which was approved by TPB on July 18, 2012 and by the USDOT on May 30, 2013. The project is identified as TIP ID # 3423. The design concept and scope of the project have not changed substantively since inclusion in these documents. As such, the Project comes from a conforming transportation plan and a TIP that conforms to the SIP's purpose. The Metropolitan Washington Air Quality Committee (MWAQC) and TPB developed an Air Quality Conformity Report, which contains emissions ceilings (called "mobile emissions budgets") to which the TIP must conform. The analysis in the Air Quality Conformity Report demonstrates that mobile source emissions, estimated for the TIP and for each analysis year of the long range plan, adhere to all CO, O_3 season volatile organic compound and nitrogen oxide, and PM 2.5 pollutants (including direct 2.5 and precursor nitrogen oxide) emissions budgets established by the MWAQC, which are either approved or under review by the USEPA. Additionally, the "action scenario" (forecast year) emissions for fine particles are not greater than the base year 2002 emissions, thus satisfying the requirement for pollutants without an established budget. These results provide a basis for a determination of conformity of the 2013 CLRP and the FY2013-2018 TIP.

An Air Quality Technical Report (Appendix C) was prepared in 2014 for the Revised Preferred Alternative. The FEIS included the results of air quality monitoring conducted between 2006 and 2008 by the U.S. Environmental Protection Agency (USEPA) at stations near the Project Area. Updated monitoring data is available for the years 2009 to 2011. Compared with the FEIS, the updated analysis (Appendix C) showed fewer instances where ozone levels were above the

National Ambient Air Quality Standards (NAAQS) (42 USC 7401 et seq.). Neither the updated analysis nor the FEIS analysis recorded any other air pollutants with levels above the NAAQS. Therefore, the air quality conditions within the Project Area appear to have slightly improved since the FEIS.

Noise

The *Noise Technical Report* (Appendix D) for the Revised Preferred Alternative, prepared in February 2014, used the July 2011 *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (23 CFR 772) and the DDOT *Noise Policy* (DDOT, 2011).

The FEIS used the results of the *South Capitol Street Noise Technical Report* (DDOT, 2007) to identify 13 noise receptors based on the June 1995 FHWA *Highway Traffic Noise Analysis Abatement Policy and Guidance* (FHWA, 1995) and the DDOT *Noise Policy Guidelines* (DDOT, 1997) (see Section 3.6 of the FEIS). Although the analyses used different guidance documents, both monitored ambient noise conditions at the same locations within the Project Area. Despite relatively rapid development in the Project Area, the types of land uses have not changed since publication of the FEIS.

In both studies, the primary sources of ambient noise in the Project Area continued to be from motor vehicles traveling on the major highways within the Project Area, such as Suitland Parkway SE, I-295, South Capitol Street (including the Frederick Douglass Memorial Bridge), and I-395. The primary source of ambient noise conditions, in both studies, was traffic using local connecting roadways, such as Martin Luther King, Jr. Avenue SE, Firth Sterling Avenue SE and M Street.

Water Quality

A *Supplemental Natural Resources Technical Report* (Appendix E), including an assessment of current water quality, was prepared in 2014 for the Revised Preferred Alternative. The Project Area is located entirely within the Anacostia River basin and includes the Anacostia River, which the USACE classifies as a navigable waterway, and a perennial tributary known as Stickfoot Branch. The FEIS documented that the water quality of the Anacostia River was poor for both ecological and human health, and that the USEPA designated the portion of the river between John Phillip Sousa Bridge (Pennsylvania Avenue SE) and at the Potomac River as “impaired waters” (see Section 3.7 of the FEIS). The sources of the contamination included high particulate loading that contributes to high turbidity and sedimentation, and fecal coliform pollution originating from combined sewer (sanitary and stormwater) overflow (CSO) discharges into the river during major rainfall events. The FEIS also noted that the Anacostia River contained elevated levels of many toxic contaminants, such as trace metals, PAHs (polycyclic aromatic hydrocarbons), PCBs (polychlorinated biphenyls), pesticides and herbicides.

The lower Anacostia River, from below the John Phillip Sousa Bridge to the mouth of the Potomac River, was listed as an “Impaired Water” by USEPA in 2010 for Use Classes B (secondary contact recreation and aesthetic enjoyment) and D (protection of human health related to consumption of fish and shellfish). It was also considered a high priority for total maximum daily loads (TMDL) development for oil and grease and trash. A TMDL is an estimate

of the maximum amount of a pollutant that a given water body can absorb without violating applicable water quality standards. The Anacostia River, as a whole, has three approved TMDLs for organics and metals, biological oxygen demand, and total suspended solids.

As discussed in the *Supplemental Natural Resources Technical Report* (Appendix E), despite the establishment of the TMDLs, recent water quality monitoring does not indicate appreciable improvements and has varied from year to year. However, updated regulations, construction technologies, and best management practices (BMPs) provide encouragement that the water quality of the Anacostia River will improve in the future. New developments in the District require stormwater management as part of the development, many of which are occurring close to the Project Area. Additionally, the DC Water and Sewer Authority (DC Water, formerly known as WASA) is currently constructing "Clean Rivers" (CSO Long Term Control Plan) projects that are meant to address the problem of discharges of raw sewage into the river during major rainfall events, according to *WASA's Recommended Combined Sewer Overflow Long-Term Control Plan (CSO Long-Term Control Plan)* (DC Water, 2012).

Submerged aquatic vegetation is defined as vascular plants that remain below the water surface during the growing season. The distribution, abundance, and species composition of submerged aquatic vegetation depends on several variables including salinity, water quality, water temperature, and water depth. Submerged aquatic vegetation provides important ecological functions, including generating food and habitat for waterfowl, fish, shellfish, and invertebrates, by adding oxygen to the water column during photosynthesis, filtering and sediment retention, and absorbing excess nutrients (which they require for growth) such as nitrogen and phosphorus that may cause the growth of unwanted algae in surrounding waters.

Activities affecting the removal or eradication of submerged aquatic vegetation are regulated by the US Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act of 1977, as amended, and Section 10 of the Rivers and Harbors Act of 1899. These areas are also regulated by the District of Columbia as promulgated under the Water Pollution Control Act of 1984 (D.C. Law 5-188, D.C. Code §6-923).

In past years (i.e., 1999 to 2002), submerged aquatic vegetation beds were located in the Anacostia River to the north and south of the Frederick Douglass Memorial Bridge. Recent surveys conducted in 2004 by the Virginia Institute of Marine Science (VIMS) and the District of Columbia Fisheries and Wildlife Division using aerial photography and field efforts did not find evidence of submerged aquatic vegetation beds within the South Capitol Street project area.

Wildlife and Habitats

The *Supplemental Natural Resources Technical Report* (Appendix E) prepared in 2014 for the Revised Preferred Alternative provides current information regarding wildlife and habitats.

The FEIS documented that the Anacostia River supports both benthic macroinvertebrates and fish communities (see Section 3.9 of the FEIS). Benthic macroinvertebrates are small organisms that lack backbones that live on or in the bottom sediments of streams and rivers. They include crustaceans, such as crayfish, mollusks, aquatic worms, and the immature forms of aquatic

insects, such as stonefly and mayfly nymphs. Macroinvertebrate communities are often used as indicators of localized water quality conditions. Using secondary sources of information, the FEIS noted that benthic life in the Anacostia River is severely diminished and communities are rated as severely degraded. The clams and mussels found within the nearby Potomac River are missing in the Anacostia River due to sediment toxicity and contaminants.

Similarly, fish diversity in the Anacostia River is lower than in the Potomac River. Several fish species that were historically abundant in the Anacostia River now rarely occur. The numbers of alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*) are very low compared to the one million pounds per year caught before 1975 (DCRA 1996). However, the FEIS noted that fish resources in the Anacostia River are improving for several game fish species, including largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), striped bass (*Morone saxatilis*) , and yellow perch (*Perca flavescens*).

The District and the State of Maryland have active programs to reduce non-point source pollution entering the Anacostia River watershed, such as the *CSO Long Term Control Plan* (DC Water, 2012), but the biological community data shows that conditions since the FEIS have not improved. The *Supplemental Natural Resources Technical Report* (DDOT, 2014) (Appendix E) contains more detailed information on biological community trends in the Anacostia River.

The FEIS documented that terrestrial biological conditions in the Project Area are typical of a largely urban environment (see Section 3.9 of the FEIS). Conditions include limited diversity in vegetation and wildlife, with clusters of vegetation typically limited to parks and other urban open spaces. Large areas of more naturalized vegetation in the Project Area do occur in the Poplar Point portion of Anacostia Park. These terrestrial biological conditions have not changed since the FEIS, as land use relative to natural habitats has remained unchanged in the Project Area.

As noted in the FEIS, osprey (*Pandion haliaetus*) nesting occurs within the Project Area. According to the National Park Service (NPS), four nesting pairs on or near the Frederick Douglass Memorial Bridge were observed in 2013 (Mikaila Milton pers. comm., November 6, 2013). Several other ospreys nested on light boxes along Anacostia Drive in 2013 (Mikaila Milton pers. comm., November 6, 2013). In 2014, the DDOE documented nesting of a pair of peregrine falcons on the Frederick Douglass Memorial Bridge (Daniel Rauch pers. comm., September 9, 2014). According to DDOE, the pair presumably fledged two chicks.

Geology, Topography and Soils

The Project Area is located entirely within the Coastal Plain Physiographic Province. The topography in the Project Area is relatively flat with elevations ranging from 0 to 25 feet above sea level. The Project Area primarily contains Urban Land Complex soils. These types of geological, topographic and soil conditions change very gradually over time and, therefore, the conditions as described in the FEIS are still valid (see Section 3.11 of the FEIS).

Visual Quality

A visual quality assessment was conducted for the existing conditions for purposes of the Revised Preferred Alternative using the same methodology as in the FEIS. The FEIS identified the following eight landscape units for the purposes of describing the visual and aesthetic conditions of the Project Area (see Section 3.14 of the FEIS):

- South Capitol Street (west side of the Anacostia River)
- Frederick Douglass Memorial Bridge
- South Capitol Street SE (east side of the Anacostia River)
- Suitland Parkway
- Howard Road SE
- Marine Luther King, Jr. Avenue SE
- Anacostia Park
- New Jersey Avenue SE

The FEIS described each landscape unit, the visual character, visual quality, visually-sensitive resources, and viewers (those who would experience aesthetic and visual conditions of the unit). Based on these descriptors, none of the landscape units have changed to any notable degree because those elements, identified in the FEIS, still exist to enhance or disrupt visual quality.

3.1.2 Substantive Changes in the Affected Environment from the FEIS

Land Use

The development trends described in the FEIS are still occurring (see Section 3.1 of the FEIS). Parcels along South Capitol Street are continuing to change from industrial to mixed uses, including the ongoing redevelopment of the Yards project. The large amount of development in the Project Area has changed land use conditions from those described in the FEIS. Section 3.2 describes the current land use conditions.

Community Cohesion and Facilities

The FEIS identified Southwest and Southeast neighborhoods and communities in the Project Area (see Section 3.2 of the FEIS). Over the past several years, the Project Area has experienced new development and redevelopment of property, particularly west of the Anacostia River. Most of this change has focused on the development of Nationals Park. Due to the rapid change in the area, the 2008-2012 American Community Survey documented an influx of new residents (in renter and owner-occupied units) from 2000 to 2009.

At the time of the FEIS, year 2010 U.S. Census and updated American Community Survey information was not yet available; therefore, the FEIS did not accurately account for the population growth and rapid change within the communities. However, the Project Area and the surrounding neighborhoods continue to provide many local activities for those within the

community. Community facilities have remained the same since the FEIS. Section 3.3 updates the U.S. Census data and describes changes to community cohesion in the Project Area.

Environmental Justice (EJ)

Several changes related to Environmental Justice have occurred since the FEIS (see Section 3.3 of the FEIS). These changes include the availability of new 2010 Census data, an update of the EJ methodology to account for a change in the reporting of poverty data, and an update of the Census areas analyzed for the Project.

Revised EJ guidance from the U.S. Department of Transportation (USDOT), USDOT Order 5610.2(a) - *Final DOT Environmental Justice Order* (USDOT, 2012) was released since the FEIS was published. This new guidance was reviewed to ensure that the methodology was consistent with the revised USDOT Order and references to the USDOT Order have been updated, as appropriate.

The FEIS used year 2000 Census data at the block group (BG) level to assist in identifying the locations of minority and low-income populations (EJ populations) within the Project Area. The updated assessment of EJ populations used year 2010 Census data at the census tract level to quantify minority populations and poverty data from the 2010 American Community Survey (ACS) 5-Year Estimates. The change in scale of the data from block group to census tract was necessary because the census tract is the smallest unit available for poverty data in the 2010 ACS 5-Year Estimates, which is the only currently available source of income data. However, a census tract can meet the EJ threshold criteria for the presence of minority populations, low-income populations, or both.

In addition to this change, census tracts 010400 and 007503, located east of the river, were analyzed in the FEIS. Census 2000 block groups, 007502, 007503 and 0098091 (now referenced as block group 0104002 in the 2010 Census), were not included in the Supplemental DEIS updated analysis because the Revised Preferred Alternative does not impact these areas. The remaining neighborhoods within the Project Area, previously identified as being located in EJ areas, continue to have the same classification. As a result of the changes between Census 2000 and Census 2010, the overall EJ population within the Project Area has decreased. Section 3.4 contains detailed EJ population data and mapping.

Wetlands

A total of six wetlands were identified within the Project Area during the 2005 wetland delineation for the FEIS (see Section 3.8 of the FEIS). The U.S. Army Corps of Engineers' 2005 Jurisdictional Determination (JD) letter approved the wetland delineation for five years. The wetlands included the following classifications: four wetlands were classified as palustrine emergent; one as palustrine forested, and one as a combination of forested, emergent, and scrub shrub. All of the wetlands were located within Anacostia Park on Poplar Point. Four of the wetlands were isolated and determined to be non-jurisdictional due to their lack of hydrologic connectivity to other streams and wetlands. Two wetlands were considered jurisdictional, as they drained through pipes to the Anacostia River.

A new wetland assessment was conducted because it had been longer than five years since the previous JD approval. The 2014 wetland delineation identified one new forested wetland and two new emergent wetlands. A 0.04-acre forested wetland was originally identified as an intermittent stream channel during the 2005 delineation. However, stream channel characteristics are no longer present. Instead, wetland conditions are now predominant. Two emergent wetlands (0.07 acre and 0.08 acre, respectively) were also delineated between Suitland Parkway and Dunbar Road. Section 3.5 presents the results of the updated wetland delineation in the Project Area. The *Supplemental Natural Resources Technical Report* (DDOT, 2014) (Appendix E) contains more detailed information on wetland conditions with the Project Area. The USACE updated the JD for the Project on February 5, 2015 (see Section 3.5 for further information).

Threatened and Endangered Species

In accordance with Section 7 of the *Endangered Species Act of 1973* (16 USC 1531 et seq.) and the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, coordination was conducted with both the U.S. Fish and Wildlife Service (FWS) and National Marines Fisheries Service (NMFS). The FEIS documented that the FWS did not identify any federal trust species (listed threatened, endangered or candidate animal and plant species) in the Project Area. When contacted for the preparation of the Supplemental DEIS the FWS, again, did not identify federal trust species.

The FEIS documented that the NMFS identified the shortnose sturgeon (*Acipenser brevirostrum*) as a species that may exist in the upper tidal Potomac River (see Section 3.9 of the FEIS). When contacted again, the NMFS identified the Atlantic sturgeon (*Acipenser oxyrhynchus oxyrinchus*) as a newly listed, federally endangered species potentially occurring in the Anacostia River. A *Biological Assessment of the Atlantic Sturgeon* (DDOT, 2014) (Appendix F) was conducted to evaluate the likelihood that Atlantic sturgeon use the portion of the Anacostia River within the Project Area. Section 3.6 provides the updated Section 7 coordination and the Atlantic sturgeon assessment.

Floodplains

The FEIS identified floodplains within the Project Area using the 2002 *Flood Insurance Rate Map (FIRM) for the District of Columbia* (FEMA, 2002) (see Section 3.10 of the FEIS). The Federal Emergency Management Agency (FEMA) updated the FIRM (FEMA, 2010). Section 3.7 describes the changes to floodplains.

Cultural Resources

The FEIS documented project compliance with Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470 et seq. and 36 CFR 800) (see Sections 3.12 and 4.12 of the FEIS). Section 106 requires that a federal undertaking (e.g., a project that requires federal funding or permit) consider effects to historic properties within the Area of Potential Effects (APE), which is determined through consultation with the DC SHPO. The Revised Preferred Alternative changed the boundaries of the APE and required a reassessment of historic properties within the APE. Section 3.8 describes the Section 106 consultation process, which was reopened due

to the introduction of the Revised Preferred Alternative. The Section 106 consultation process included developing the revised APE, reassessing effects to historic properties, and amending the MOA in consultation with the DC SHPO, consulting parties, and signatories. Additional details are provided in the *Section 106 Assessment of Effects to Historic Properties Report* (DDOT, 2014) (Appendix G).

Hazardous Materials

The FEIS documented the locations of potential hazardous materials sites within the Project Area based on the results of the following studies (see Section 3.13 of the FEIS):

- *Preliminary Environmental Screening Assessment Report* (DDOT, 2006) – focused on the entire Project Area
- *Phase 1 Site Assessment and Contaminated Materials Management Report* (DDOT, 2005) – focused on the area of the bridge and its approaches
- *Phase 2 Environmental Site Assessment (ESA) for South Capitol Street Protective Buying* (DDOT, 2008) – focused on the area near the proposed west traffic oval

The following updated environmental screening assessment (ESA) reports were completed in the area of the proposed west traffic oval:

- Phase 2 ESA Parcel #72 (DDOT, 2012)
- Phase 2 ESA Parcel #74 (DDOT, 2012)
- Phase 2 ESA Parcel #77 (DDOT, 2012)
- Phase 2 ESA Parcel #37 (DDOT, 2012)
- Phase 2 ESA Parcel #75 (DDOT, 2012)
- Phase 2 ESA Parcel #42 (DDOT, 2012)
- *Phase 2 ESA Parcel #41* (DDOT, 2012)

Section 3.9 presents the results of a more comprehensive evaluation of the studies prepared for the FEIS including the updated ESAs and highlights changes from the FEIS. This resulted in an increase of 14 additional properties of concern relative to the FEIS. Additional detail is provided in Appendix H, the Modified Phase I Environmental Site Assessment (ESA) (DDOT, 2014).

Pedestrian and Bicycle Facilities

Although the conditions of pedestrian and bicycle networks within the Project Area remain largely the same since the FEIS (see Section 3.15 of the FEIS), a few facilities have been constructed, which are described in Section 3.10.

Traffic and Transportation – South Capitol Street and Other Roadway Characteristics

With two exceptions, the classifications and characteristics of roadways in and around the Project Area remain the same as documented in the FEIS (see Section 3.16 of the FEIS). South Capitol Street from Potomac Avenue to Firth Sterling Avenue SE was reclassified from a freeway to a principal arterial. In addition, Washington Avenue SW, which connects Independence Avenue SW and South Capitol Street, was designated an emergency evacuation route, joining four other roadways (South Capitol Street, the Southeast-Southwest Freeway, I-295, and

Suitland Parkway) in the Project Area. The FEIS used traffic data collected in 2008. Additional traffic data was collected in 2009 and 2010. Based on this newer traffic data, the affected environment with respect to traffic conditions was updated, and is summarized in Section 3.11. Additional details are available in Appendix I, the *South Capitol Street Transportation Technical Report* (DDOT, 2014).

Traffic and Transportation – Traffic Safety

Since the FEIS, DDOT has released the 2009-2011 *Traffic Safety Report Statistics* (DDOT, 2013), which provides a list of top 100 hazardous intersections in the District of Columbia based on crash frequency, rate, severity, cost, and composite index values during that time period. Compared with the 2007-2009 Traffic Safety Report Statistics used for the FEIS, the 2009-2011 Traffic Safety Report Statistics still show the following same four intersections within the Project Area as among the top 100 hazardous intersections in the District:

- Firth Sterling Avenue and Suitland Parkway SE
- Firth Sterling and Howard Road SE
- Martin Luther King, Jr. Avenue and Howard Road SE
- I Street and South Capitol Street

Additional traffic safety information was collected for the freeways within the Project Area, which includes:

- I-695 from the 11th Street Bridge SE to I-395
- DC 295 (Anacostia Freeway) from the 11th Street Bridge SE to two miles north of the Pennsylvania Avenue SE interchange
- I-295 from two miles of Malcolm X Avenue SE interchange and the 11th Street Bridge SE
- I-395 from the Potomac River to the 3rd Street SW tunnel entrance

The predominant types of vehicle crashes on these freeway segments were rear-end collisions (45 percent) and sideswipe collisions (26.4 percent). Appendix J presents updated information about existing crash statistics.

Traffic and Transportation: Other Transportation Facilities and Service

The FEIS documented information about public transportation, parking, and other forms of non-roadway transportation (public and private) occurring in and around the Project Area (see Section 3.16 of the FEIS). In terms of parking, there were no substantive or notable changes to the locations and availability of on-street and off-street parking facilities within the Project Area since the FEIS.

The FEIS also documented helicopter and passenger and freight rail service. These services have remained basically the same as in the FEIS. These services have not changed to any notable degree since the FEIS. For the preparation of the Supplemental DEIS/ Supplemental FEIS, traffic information was updated to the year 2013, which showed notable changes particularly at the Navy Yard Metrorail Station.

The Washington Metropolitan Area Transit Authority (WMATA) and DDOT added or modified several Metrobus and DC Circulator routes in and around the Project Area (see Section 3.11). Section 3.11 also discusses the assessment of navigation activities along the Anacostia River, which was prepared to assist with the determination of whether the new Frederick Douglass Memorial Bridge could be a fixed span structure or not.

3.2 Land Use

3.2.1 Existing Land Uses

Anchored by the completion of Nationals Park and the establishment of the USDOT headquarters at M Street SE and New Jersey Avenue SE, continuous land use development on the west side of the Anacostia River has occurred along the South Capitol Street Corridor since the FEIS. As illustrated in Figure 3-1, and noted in Table 3-1, several developments have been completed since 2009 including projects associated with the Yards redevelopment in the riverside area adjacent to the Washington Navy Yard and M Street SE. The recent projects are predominately residential and office developments, with some commercial and mixed-use developments, and public parks.

Figure 3-1: Example of Recent Development along South Capitol Street Corridor

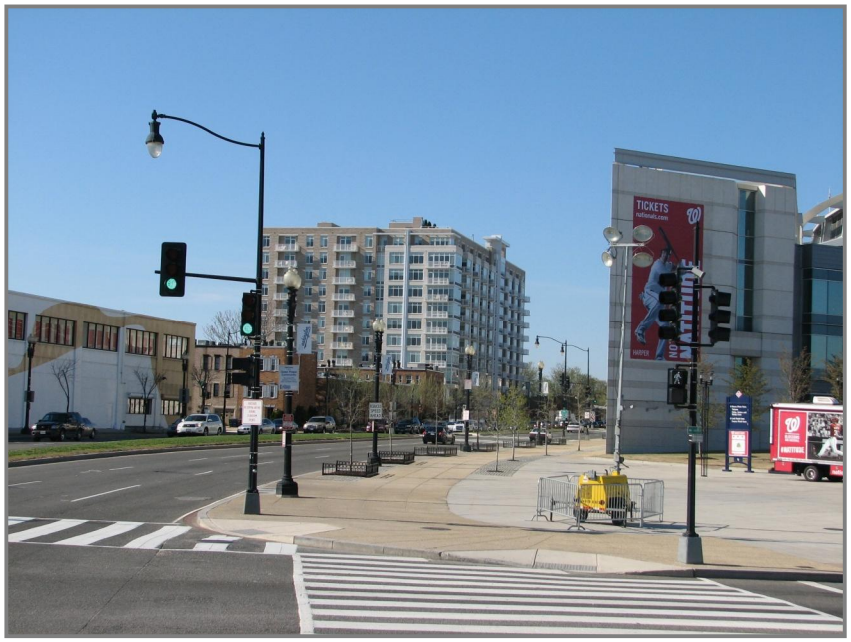


Table 3-1: Developments Completed in Project Area since 2009 - West of Anacostia River

Project	Location	Major Use	Completion Year
Velocity Condos	1025 1st Street, SE	Residential	2009
Diamond Teague Park	First Street and Potomac Avenue SE	Park	2009
909 at Capitol Yards	909 New Jersey Avenue SE	Residential	2009
55 M Street SE (Phase 1)	Half Street between M and N Streets SE	Mixed-use	2009
1015 Half Street	1015 Half Street SE	Office	2011
Camden South Capitol	1345 South Capitol Street SW	Residential	2013

As a result, the existing land uses within the Project Area have changed slightly compared to those described in the FEIS.

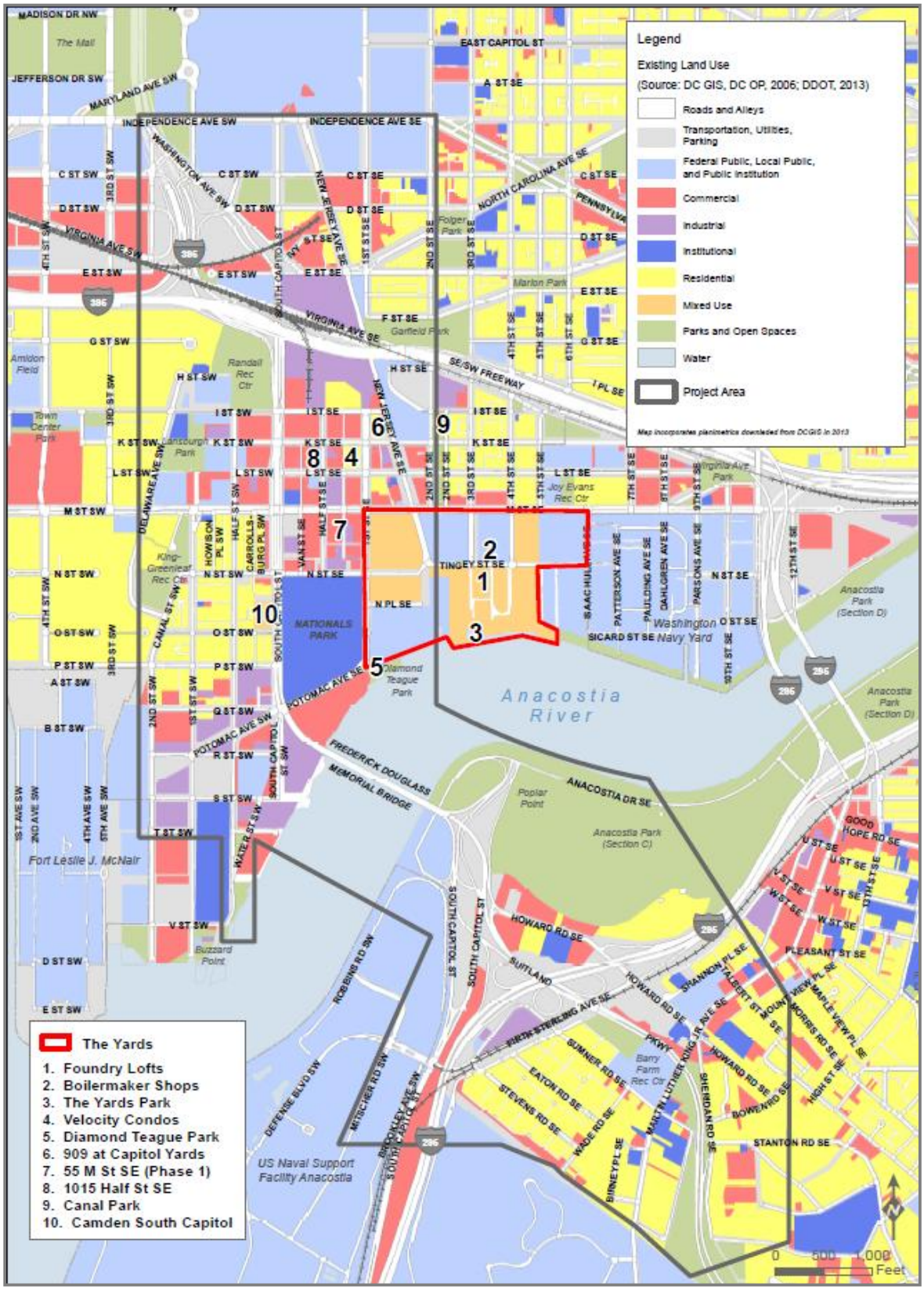
Figure 3-2 illustrates the current land uses and the following section describes the changes in land uses since the FEIS.

The FEIS documented that the pace of redevelopment on the east side of the Anacostia River was not as fast as on the west side since much of the Project Area east of the Anacostia River still consists of parks, open space, and government facilities. Development has mostly focused on housing, such as the recently completed Sheridan Terrace and Matthews Memorial Terrace (see Table 3-2). These, and other residential projects, are focused in the area around Barry Farm. The approximately 350-acre St. Elizabeths Campus is being redeveloped south of the Project Area. The current phase of construction for the West Campus of St. Elizabeths is underway. The redevelopment of the East Campus is currently in the planning and design stages.

Table 3-2: Developments Completed in Project Area since 2009 - East of Anacostia River

Project	Location	Major Use	Completion Year
Grandview Estates	1264-1308 Talbert Street SE	Residential	2009
Matthews Memorial Terrace	2632 Martin Luther King, Jr. Avenue SE	Residential	2012
Sheridan Station (Phase 1)	2516 Sheridan Road SE	Residential	2010-2012

Figure 3-2: Existing Land Use



3.2.2 Governmental Plans, Policies, and Controls

Federal, regional and local government plans, policies, and controls relevant to the project and Project Area have largely remained the same as those described in the FEIS. This section describes the exceptions.

Regional

The MWCOG has updated the following plans since the FEIS:

- The *2013 Update to the Financially Constrained Long-Range Transportation Plan (CLRP) for the National Capital Region* (MWCOG, 2013)
- *Transportation Improvement Program (TIP) for the Metropolitan Region FY 2013-2018* (MWCOG, 2013)

The National Capital Region Transportation Planning Board (TPB) updated and adopted the CLRP in July 2013, for years 2013 to 2040. On July 18, 2012, the TPB adopted the TIP for fiscal years 2013 to 2018. Both the CLRP and TIP updates included the South Capitol Street Project. The CLRP and the TIP stated that the District would implement "improvements based on recommendations from the South Capitol Street Gateway and Anacostia Access studies including right-of-way acquisition and replacement of the Fredrick Douglass Memorial Bridge on a new southern alignment."

Local

In 2009, the OP launched the first Amendment Cycle for the 2006 *Comprehensive Plan of the National Capitol* (OP, 2006). The purpose of the Amendment Cycle was to correct technical errors or address major changes in policy or new initiatives that have occurred since 2006. The amendments were developed in 2010, but adopted in April as part of the *Comprehensive Plan* (OP, 2010). Table 3-3 summarizes the amendments related to the South Capitol Street Corridor and the Project. These amendments continue to encourage mixed-use redevelopment, and focus on improving accessibility to the multi-modal transportation network and neighborhoods in the South Capitol Street Corridor. In general, the amendments reinforce the future role of the South Capitol Street Corridor as a gateway to the city.

Table 3-3: 2010 Amendments to the Comprehensive Plan Relevant to the Project Area

Section	Amendment
304.11 – Policy LU-1.1.5: Urban Mixed Use Neighborhoods	"Encourage new central city mixed-use neighborhoods combining high-density residential, office, retail, cultural, and open space uses in the following areas: 1. Mt. Vernon Triangle 2. North of Massachusetts Avenue (NoMA) 3. Downtown East 4. South Capitol Street Corridor/Stadium area 5. Near Southeast/Navy Yard 6. Center Leg Freeway air rights 7. Union Station air rights"
306.16	"While transit-oriented development is most commonly thought of as a strategy for Metrorail station areas, it also applies to premium transit corridors and the city's "Great Streets." Seven corridors are designated Great Streets as part of an integrated economic development, transportation, and urban design strategy. The location of these streets is shown in Map 3.5 [of the Amendment]. While not officially designated, four other corridors — Rhode Island Avenue, North/South Capitol Streets, Lower 14th Street, and Bladensburg Road — are also shown on the map to recognize their potential for enhancement."
411.9	"As the District is a densely developed city with an historic built environment, the city does not foresee making significant investments in road widening to accommodate more autos. Instead, the District will continue to manage existing roadway resources and provide for viable transportation choices throughout the city. Some of the roadway and bridge investments the city is planning to make within the next five to eight years include: Rehabilitating the existing Frederick Douglass Memorial Bridge through structural steel repairs, lighting improvements, and preventive maintenance Creating a traffic circle at the intersection of Potomac Avenue and South Capitol Street Extending Potomac Avenue to 2nd Street SE on the east and to Fort McNair on the west Reconfiguring the underpass arrangement at the intersection of M and South Capitol Streets Redesigning South Capitol Street for a continuous, at-grade, 130-foot street section as originally specified in the L'Enfant Plan, with a narrow median"
1808.2 – Policy FSS-1.1.1": Directing Growth	"Opportunities for future housing development and employment growth in the Far Southeast/Southwest should be directed to the area around the Congress Heights Metrorail Stations and along the Great Streets corridors of South Capitol Street. Provide improved transit and automobile access to these areas and improve their visual and urban design qualities."
1808.7 – Policy FSS-1.1.6: Anacostia Streetcar Project	"Coordinate land use and transportation decisions along the proposed route of the Anacostia Streetcar. Future development along the streetcar line should be clustered around proposed transit stops. In addition, the streetcar route should be designed and planned to minimize impacts on traffic flow and to avoid negative impacts on the historic character of the Anacostia community."

Table 3-3: 2010 Amendments to the Comprehensive Plan Relevant to the Project Area (continued)

Section	Amendment
1908.3 – Policy AW-1.1.2: New Waterfront Neighborhoods	"Create new mixed use neighborhoods on vacant or underutilized waterfront lands, particularly on large contiguous publicly-owned waterfront sites. Within the Lower Anacostia Waterfront/ Near Southwest Planning Area, new neighborhoods should be developed at the Southwest Waterfront, Buzzard Point, Poplar Point, Southeast Federal Center and Carrollsburg areas. These neighborhoods should be linked to new neighborhoods upriver at Reservation 13, and Kenilworth-Parkside. A substantial amount of new housing and commercial space should be developed in these areas, reaching households of all incomes, types, sizes, and needs."
1914.9 – Policy AW-2.4.3: Poplar Point Mixed Use Neighborhood	"Create a new transit-oriented mixed-use neighborhood oriented around the Poplar Point Park, linked to the Anacostia Metrorail Station and new Anacostia streetcar line. The neighborhood should include a large amount of affordable housing and should also include retail and civic uses that benefit the adjacent communities east of I-295. Within the overall mix of uses, allow segments of the future development to be devoted entirely to office use to encourage location of Federal office space and other office space supportive of Federal government agencies to occupy new buildings at Poplar Point. This should be particularly targeted to office space related to the Department of Homeland Security consolidation at the St. Elizabeths Campus. To minimize the loss of useable open space, development should utilize the land recovered after the realignment and reconstruction of the Frederick Douglass Bridge."

3.2.3 Zoning

Although the District of Columbia Office of Zoning (DCOZ) updated the zoning maps and ordinances since the FEIS, the changes within the Project Area were relatively minor as shown on Table 3-4. The DCOZ also updated the overlay zone districts, but no changes were made to the overlay zones within the Project Area since the FEIS. Overall, the existing Project Area remains zoned to facilitate large areas of commercial, residential, and mixed-use developments, with some light industrial uses along the waterfront. Combined with the design standards established by the overlay districts, this zoning encourages the development of the South Capitol Street Corridor into a symbolic gateway to the District.

Table 3-4: Updates in Zoning in Project Area since the FEIS

Area	Location	Updated Zone District (2013)	FEIS Zone District (2008)
West of Anacostia River	Current U.S. DOT headquarters (M Street SE between 4th Street SE and New Jersey Avenue SE)	CR (mixed-use)	Unzoned

West of Anacostia River	Block south of U.S. DOT headquarter occupied by DC Water (just south of intersection between New Jersey Avenue SE and Tingey Street SE)	M (industrial)	W-2 (waterfront mixed-use)
East of Anacostia River	Residential blocks around intersection of Shannon Place SE and Talbert Street SE (just southeast of I-295)	R-5-A (residential)	R-4 and R-5-A (residential)

3.3 Community Cohesion and Facilities

3.3.1 Community and Neighborhood Description

As described in the FEIS, a portion of the Near Southeast neighborhood, located south of I-395/I-695 along the southeast waterfront, has continued to experience changes. Originally anchored by Nationals Park and the U.S. DOT headquarters, the steady completion of the Yards redevelopment projects and the construction of numerous other commercial and residential developments over the past few years have changed the urban landscape of this neighborhood.

Since the FEIS, the neighborhoods east of the Anacostia River have not changed nearly to the extent as the Near Southeast neighborhood. The redevelopment plans described in the FEIS in and around the neighborhoods of Barry Farm, Hillsdale, and Historic Anacostia are progressing, but have not advanced to such an extent that substantial changes to neighborhood characteristics are evident. The Yards Park development, completed in 2010, provided an additional recreational area with space for outdoor performances.

Table 3-5 highlights the large number of new residents who moved into the Project Area between 2000 and 2010. Since 2000, population has more than tripled in all census tracts in the Project Area. This shows that the population is new to the area and the community is growing.[1] Figure 3-3 illusrates the census tracts for Table 3-5.

[1] ACS data from 2008 to 2012 was used as the population has continued to grow since the time 2010 Census data was collected.

Table 3-5: Tenure of Total Population in Occupied Housing Units by Census Tract

	Census Tract 64		Census Tract 65		Census Tract 72		Census Tract 73.01		Census Tract 74.01		Census Tract 105	
Total population in occupied housing units:	1,821		2,535		2,701		2,377		2,309		4,132	
Moved in 2010 or later	535	29.4%	1,876	74.0%	1,753	64.9%	990	41.6%	689	29.8%	1,476	35.7%
Moved in 2000–2009	1,017	55.8%	649	25.6%	993	36.8%	1,265	53.2%	880	38.1%	2,241	54.2%
Moved in 1990–1999	434	23.8%	677	26.7%	612	22.7%	122	5.1%	651	28.2%	842	20.4%
Moved in 1980–1989	127	7.0%	506	20.0%	55	2.0%	0	0.0%	135	5.8%	191	4.6%
Moved in 1970–1979	37	2.0%	205	8.1%	0	0.0%	0	0.0%	0	0.0%	90	2.2%
Moved in 1969 or earlier	10	0.5%	110	4.3%	0	0.0%	0	0.0%	148	6.4%	143	3.5%

Source: 2008–2012 American Community Survey 5-Year Estimates
Note: Census tract data is the smallest geographic area for occupied housing data available from the American Community Survey and for the 2010 Census

Figure 3-3: Census Tracts in the Project Area

There are various neighborhood organizations within the Project Area with the goal of fostering community cohesion. For example, the Southwest Neighborhood Assembly publishes a local newspaper, *The Southwester*, and maintains a website with community information and upcoming events. Events include afterschool activities and tutoring for school-age children, storytime for infants and preschoolers, activities for seniors, and fitness classes for all age groups. Although the group currently focuses on the Southwest neighborhood, the goal is to expand community information to other areas.

The Area Neighborhood Councils (ANCs) also provide opportunities to involve residents in the community and desiminate information to the public. The Project Area is located predominately in ANCs 6D and 8C, and partially includes ANC 6B. The neighborhood organizations expand communication, encourage relationships among residents, and help foster a sense of community.

3.3.2 Housing

The FEIS documented that most housing units in the project were located west of South Capitol Street on the west side of Anacostia River. The completion of residential developments in the Near Southeast neighborhood has increased the number of housing units available east of South Capitol Street within the Project Area. These new residential housing units are mostly high-density condominiums and apartment rentals. East of the Anacostia River, the number of housing units is largely the same as that documented in the FEIS.

The FEIS reported 10,143 housing units in the project area in 2000 (U.S. Census, 2000) with an additional 900 units completed or under construction. The 2010 Census data identified approximately 13,300 units in the area (U.S. Census, 2010), a growth of more than 30 percent in a decade.

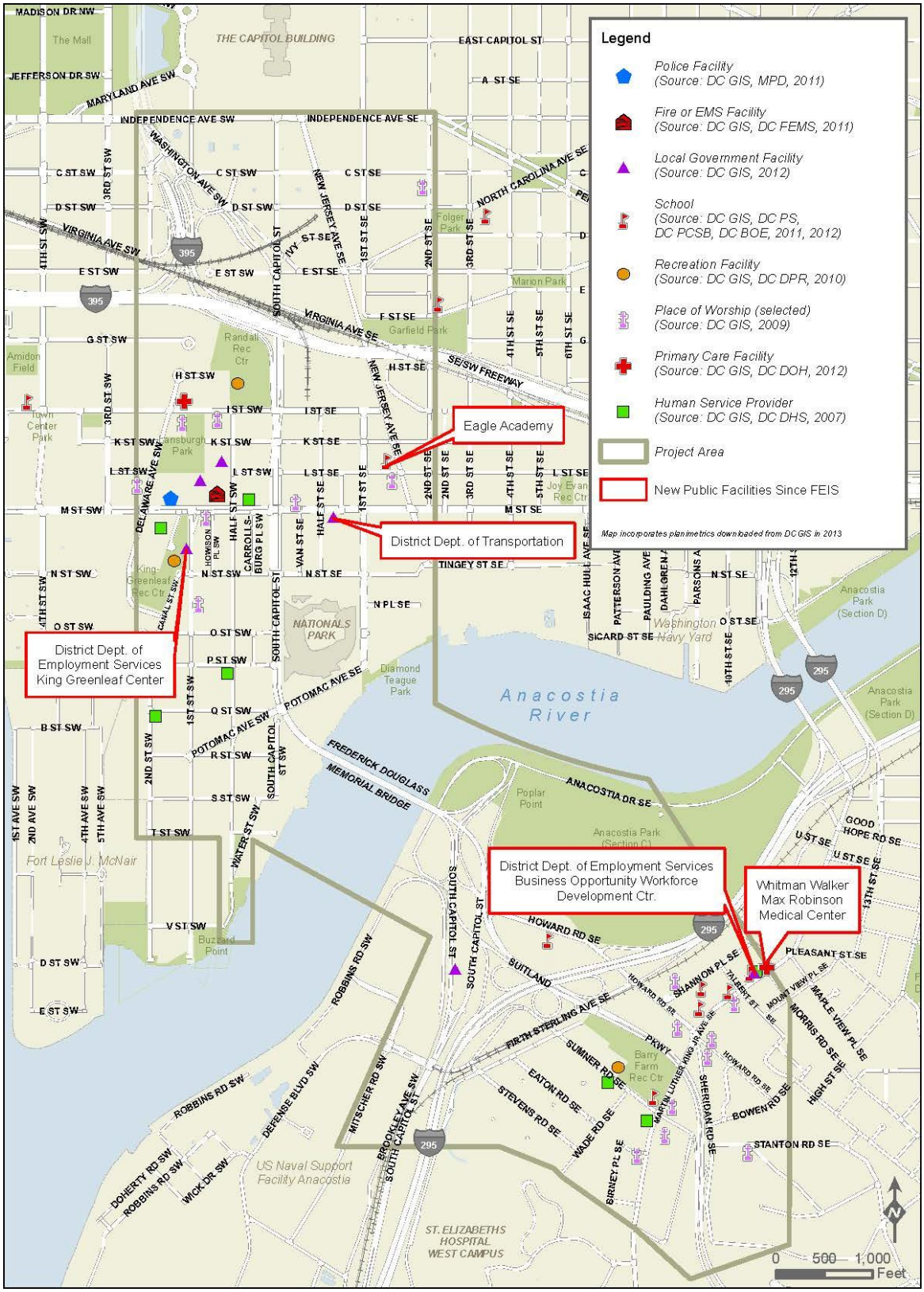
3.3.3 Places of Worship, Public Facilities, and Schools

Since the FEIS, the number of places of worship in and around the Project Area did not change, but the following new public facilities and schools were established:

- Eagle Academy (school) – 1017 New Jersey Avenue SE
- Whitman Walker – Max Robinson Medical Center (primary care facility) – 2301 Martin Luther King, Jr. Avenue SE
- DDOT Headquarters (local government facility) – 55 M Street SE
- District of Columbia Department of Employment Services – King Greenleaf Center (local government facility), 201 N Street SW
- District of Columbia Department of Employment Services – Business Opportunity Workforce Development Center (local government facility), 2301 Martin Luther King, Jr. Avenue SE

Jackie Robinson School for Disabled Students, which was located on Howard Road SE near I-295, was closed in 2011. The site now contains an outpatient mental health facility for infants through adolescents. Figure 3-4 shows the updated community facilities.

Figure 3-4: Community Facilities



3.3.4 Utilities

Utility infrastructure remains similar as described in the FEIS. One exception, the PEPCO power plant at Buzzard Point, was decommissioned in June 2012.

Although work has not been completed, sections of both the Blue Plains and Anacostia River Tunnels (part of the DC Clean Rivers Project) will be within the Project Area. Construction for the Blue Plains Tunnel began in May 2013. The Anacostia Tunnel is expected to begin construction in 2014 (see Figure 3-5).

Figure 3-5: Blue Plains and Anacostia Tunnels

3.3.5 Demographics

The FEIS used year 2000 Census data, *Selected Social Characteristics: Demographics and Income* (U.S. Census, 2000), to describe the demographic and income characteristics of residents living in and near the Project Area because year 2010 U.S. Census data was not yet available. The 2010 Census data has been used to provide an update to demographics information for this document. Data is available for overall population and minority populations at the block group level. Data on income level is only available at the census tract level for the 2010 Census. Therefore, different levels of data are presented below based on the topic of discussion. In addition, three block groups that were included in the FEIS analysis were not subject to an updated analysis as they were determined to be outside of the current Project Area. Those block groups are 0098091, 0075033, and 0075032 from the 2000 Census. One additional block group from 2010 Census has been included in the analysis for this document which is block group 0065001.

Based on the most recent 2010 Census data, the District's population increased by about five percent between the year 2000 and 2010. In 2010, the District's total population was almost 602,000 persons.

The 2010 Census block group data were used to determine a total population of approximately 22,000 residents in the Project Area using the 14 block groups shown on Figure 3-6. This population is 7.6 percent less than in the year 2000 (see Table 3-6). Population changes within the Project Area were extremely uneven, with several block groups experiencing substantial drops in population while others had extremely high growth rates.

Block groups 0072001 and 0072002, representing the portion of the Near Southeast neighborhood within the Project Area, grew by over 50 percent. This is consistent with the level of redevelopment that has occurred in this area over the past several years. Conversely, block group 0064002 located on the west side of South Capitol Street near Buzzard Point, experienced an almost 15 percent drop in population. The area between D Street and Independence Avenue includes only four residents as the majority of the area is comprised of Congressional offices.

On the east side of the Anacostia River, two block groups comprise the majority of the Project Area. Block groups 0074011 (Barry Farm) and 0074012 (Hillsdale) experienced population decreases of 16 and 24 percent, respectively, between 2000 and 2010. Barry Farm is planned for redevelopment from public housing to mixed income housing. Block group 0074072 is the only block group east of the river to experience population growth. This reflects the residential redevelopment projects of Grandview Estates and Sheridan Station that were completed in 2009 and 2010, respectively.

The 2010 Census data indicated a population decrease of 2,222 people (42.5 percent) in block group 0073011 from 2000. However, this block group represents JBAB, and the majority of this military installation is located beyond the Project Area.

Figure 3-6: 2010 Census Block Groups in Project Area with Population Change

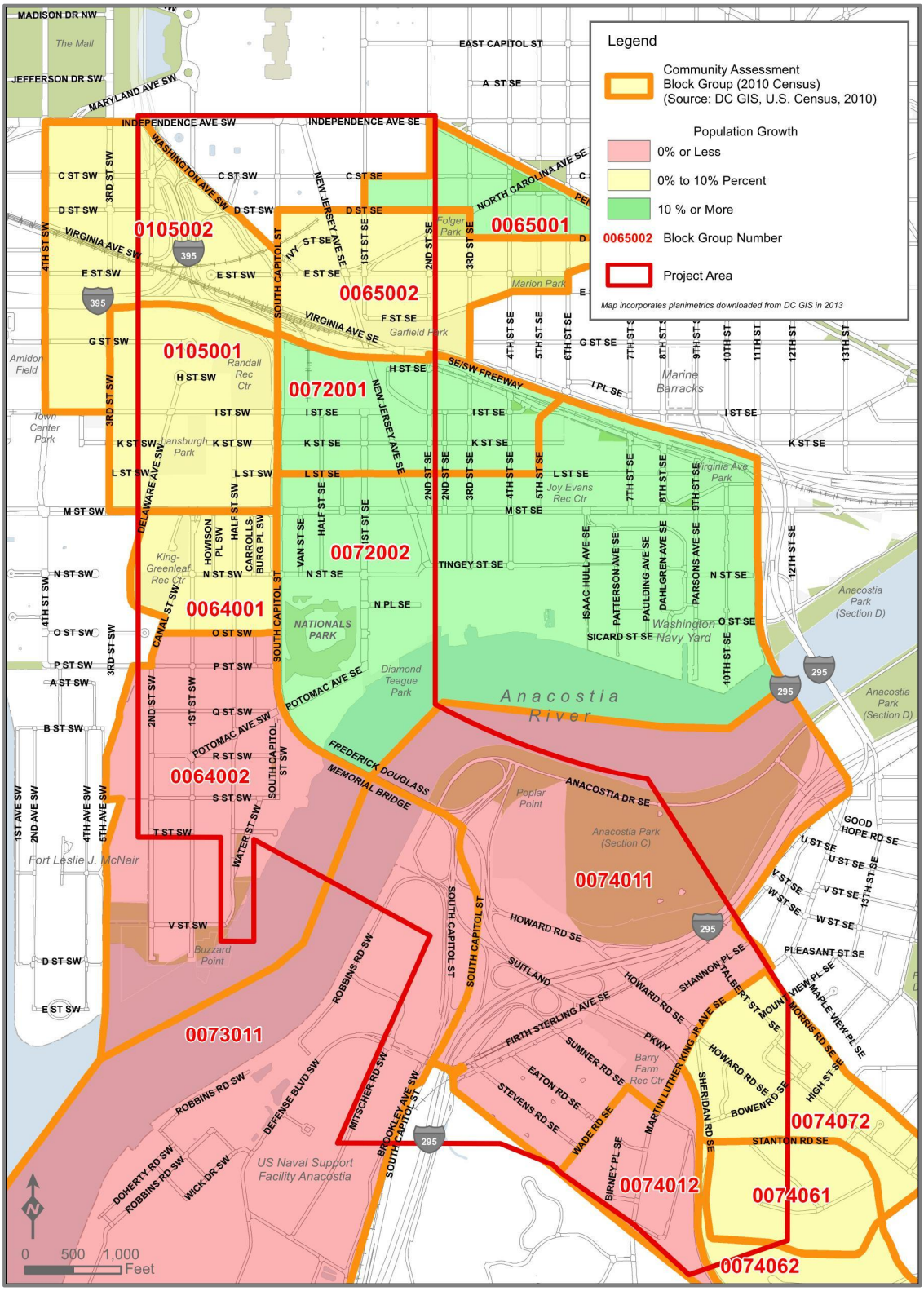


Table 3-6: Comparison of Year 2000 and 2010 Populations by Block Group

2000 Block Group (or Equivalent)	2000 Population	2010 Block Group	2010 Population	Population Change 2000-2010
0064001	1,187	0064001	1,242	4.6%
0064002	1,053	0064002	897	-14.8%
0065001	895	0065001	997	11.4%
0065002	1,527	0065002	1,534	0.5%
0072001	1,825	0072001	1,964	53.1%
		0072002	830	
0073011	5,234	0073011	3,012	-42.5%
0074011	1,764	0074011	1,484	-15.9%
0074012	1,232	0074012	930	-24.5%
0074064	3,227	0074061	1,439	5.1%
		0074062	1,624	
0074075	1,634	0074072	1,771	8.4%
0060021	608	0105001	1,967	*3.7%
0060011	2,680	0105002	1,443	
Total	22,866	Total	21,134	-7.6%

Sources: U.S. Census 2000 Summary File 1 and U.S. Census Bureau 2010 Summary File 1, Block Group Data
* Block groups 0105001 and 0105002 cover the same area as block groups 0060021 and 0060011. However, the areas are not equal and the population change has been combined to accurately reflect the growth.

Overall, racial and age profiles of the population within the Project Area are similar to those documented in the FEIS. The following section uses U.S. Census terminology in describing the racial characteristics of the residents living in the Project Area.

In 2010, Black or African-Americans (not of Hispanic origin) composed the largest racial group (59 percent) of the population within the Project Area. This is 14 percent lower than that documented in the FEIS for the year 2000 (see Table 3-7). The total percentage of Black or African-Americans (not of Hispanic origin) residents in the District was 50 percent in 2010. White (not of Hispanic origin) residents comprised the second largest racial group in the Project Area at about 30 percent, which is 10 percent higher than that documented in the FEIS for the year 2000 (see Table 3-6). The total percentage of white residents in the District was almost 35 percent in 2010.

Table 3-8 shows that 69 percent of the population in the Project Area was between the ages of 18-64 in 2010, which was slightly lower than the 72 percent in the District as a whole. However, this was nine percent higher than in 2000 when those 18-64 years old comprised about 60 percent of the total population. The percent of population younger than 17 years old decreased from about 34 percent to 24 percent between the years 2000 and 2010. This was higher than the 17 percent for the District as a whole.

Table 3-7: U.S. Census 2010 Population by Race and Hispanic Origins

Category	Population in the Project Area		Total Population in the District of Columbia	
	Number	Percentage	Number	Percentage
White*	6,359	30.1%	209,464	34.8%
Black or African-American*	12,460	59.0%	301,053	50.0%
Hispanic (all races)	1,072	5.1%	54,749	9.1%
Asian*	641	3.0%	20,818	3.5%
American Indian*	82	0.4%	1,322	0.2%
Other or Multiple Races*	520	2.5%	14,317	2.4%
Total Minority	14,775	69.9%	392,259	65.2%
Total Population	21,134	100.0%	601,723	100.0%

Source: U.S. Census 2010 Summary File 1
Note: *Not of Hispanic Origin

Table 3-8: U.S. Census 2010 Population by Age

Age	Population in the Project Area		Total Population in the District of Columbia	
	Number	Percentage	Number	Percentage
0 to 17	5,020	23.8%	100,815	16.8%
18 to 64	14,751	69.8%	432,099	71.8%
65 or Above	1,363	6.4%	68,809	11.4%
Total	21,134	100.0%	601,723	100.0%

Source: U.S. Census 2010 Summary File 1, Block Group Data

Although overall income levels of residents in the Project Area were below those of the District in 2010, they improved over the past several years at a greater pace. The median household income in 2010 was about $47,000, well below the District-wide median income of about $58,500 (see Table 3-9). However, in 2000, the median household income among residents in the Project Area was only about $23,800. Therefore, household median income in the Project Area rose by almost 100 percent, compared with 26 percent for the District as a whole.

The percentage of persons living below the poverty level[2] in the Project Area decreased from 33 percent to 25.7 percent from 2000 to 2010, a much larger improvement than the 1.7 percent in the District as a whole. The increase in median income and decrease in those living below the poverty level is likely due to the extensive development in the area over the past decade. Section 3.4 contains detailed information on minority and low income populations.

[2] Poverty Thresholds for 2010 by Size of Family and Number of Related Children Under 18 Years: Weighted average threshold for a family of four people: $22,314 (Source: U.S. Census 2010 Summary File 1)

Table 3-9: U.S. Census 2010 Income and Poverty Levels

Category	Project Area	District of Columbia
Median Household Income	$47,064	$58,526
Per Capita Income	$25,024	$42,078
Persons Below Poverty Level – Total	5,231	101,767
Percentage of Persons Below Poverty Level	25.7%	18.5%

Source: 2006-2010 ACS 5-Year Estimate

Home values and ownership rates in the Project Area increased between 2000 and 2010 (Table 3-10). Although home values and ownership rates are below those in the District, they improved at a faster pace between 2000 and 2010. Home ownership improved by more than five percent in the Project Area compared with less than three percent in the District.

Table 3-10: U.S. Census 2010 Housing Value/Homeownership Rate

Category	Project Area	District of Columbia
Housing Units	12,738	296,719
Median Home Value	$349,533	$443,300
Homeownership Rate	21.4%	43.5%
Median Rent	$871	$1,063

Source: U.S. Census 2010 Summary File 1, 2006-2010 ACS 5-Year Estimates

3.4 Environmental Justice

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (EO 1994), directs federal agencies to "promote nondiscrimination in federal programs substantially affecting human health and the environment, and provide minority and low-income communities access to public information on, and an opportunity for public participation in, matters relating to human health or the environment." The EO directs agencies to use existing laws to ensure that when they act:

- They do not discriminate on the basis of race, color, or national origin
- They identify and address disproportionately high and adverse human health or environmental effects of their actions on minority and low-income communities, and
- They provide opportunities for community input during the National Environmental Policy Act (NEPA) process, including input on potential effects and mitigation measures

Section 3.3.5 summarizes the demographic composition of populations in the Project Area. However, additional population data were collected to establish a detailed demographic profile and baseline for the Environmental Justice (EJ) impact analysis.

3.4.1 Methodology

Definitions of "Minority" and "Low-Income"

Executive Order 12898 does not define the terms "minority" or "low-income." However, the revised EJ guidance from the U.S. Department of Transportation (USDOT), USDOT Order 5610.2(a) *Final DOT Environmental Justice Order* (USDOT, 2012) provides the following definitions, which have been used in this analysis:

- Minority Individual – The U.S. Census Bureau classifies a minority individual as belonging to one of the following groups: American Indian or Alaskan Native, Asian American, Native Hawaiian or Other Pacific Islander, Black (not of Hispanic Origin) and Hispanic or Latino.
- Minority Populations – Any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed USDOT program, policy, or activity.
- Low-Income – A person whose household income is at or below the US Department of Health and Human Services poverty guidelines.
- Low-income Population – Any readily identifiable group of low-income persons who live in geographic proximity and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed USDOT program, policy, or activity.

Identifying Minority and Low-Income Populations in the Project Area

As a tool for evaluating the proportionality of impacts and benefits, this analysis identified "EJ areas" and "non-EJ areas" in the Project Area. As used in this chapter, the term "non-EJ area" does not imply the absence of EJ populations living in that area. This analysis distinguishes between EJ areas and non-EJ areas as a tool for assessing the potential for disproportionate impacts on EJ populations. An "EJ area" was defined to include any census tract in which the minority or low-income population meets either of the following thresholds:

(a) The minority population in the census tract exceeds 50 percent, or

(b) The percentage of a minority or low-income population in the affected area is "meaningfully greater" than the percentage of the minority and low-income population in the general population

For this analysis, "meaningfully greater" was defined to mean a census tract in which the percentage of minority or low-income residents was 10 percent or higher than the corresponding percentage in the surrounding jurisdiction (the District). The 2010 Census determined that 65.2 percent of residents in the District were classified as minority populations and 18.5 percent of the total population lived below the poverty line. Because the percentage of minorities in the District is well above 50 percent (see "a" above), the meaningfully greater standard did not apply in the identification of minority populations. The meaningfully greater standard used to determine a low-income population was 20.35 percent (10 percent above the District-wide poverty rate of 18.5 percent). The analysis of the presence of minority and low-income populations are completely separate. A census tract can exceed either of the minority and low-income thresholds or both in order to be identified as an EJ area.

The use of thresholds for identifying EJ areas was based on the Council on Environmental Quality (CEQ) guidance document, *Environmental Justice Guidance under the National Environmental Policy Act* (CEQ 1997). The FEIS followed the similar methodology; however, block group data for minority and low-income populations was extracted from the 2000 decennial Census. In 2010, the U.S. Census Bureau did not collect income data. Therefore, the 2006–2010 ACS 5-Year Estimates were used to determine the presence of low-income populations. The census tract is the smallest level of data available in the ACS 5-Year Estimates. As a result, the updated EJ analysis used data at the census tract level to compare both minority and low-income populations.

3.4.2 Census Tracts Meeting EJ Threshold Criteria

The Project Area for the Revised Preferred Alternative includes all, or parts of, eight census tracts. Figure 3-7 presents the EJ areas and non-EJ areas within the Project Area, and also illustrates the 1,000-foot potential impact area beyond the Project's limit of disturbance. The impact area was used in the analysis to estimate potential impacts on EJ populations.

The total population in the Project Area is 21,950. Table 3-11 and Table 3-12 present a summary of population data including the percentages for minority and low-income persons. The census data revealed that the Project Area census tracts contained a percentage of minority persons (71 percent) which is slightly higher than the District average of 65.2 percent.

Figure 3-7: EJ and Non-EJ Areas within the Project Area

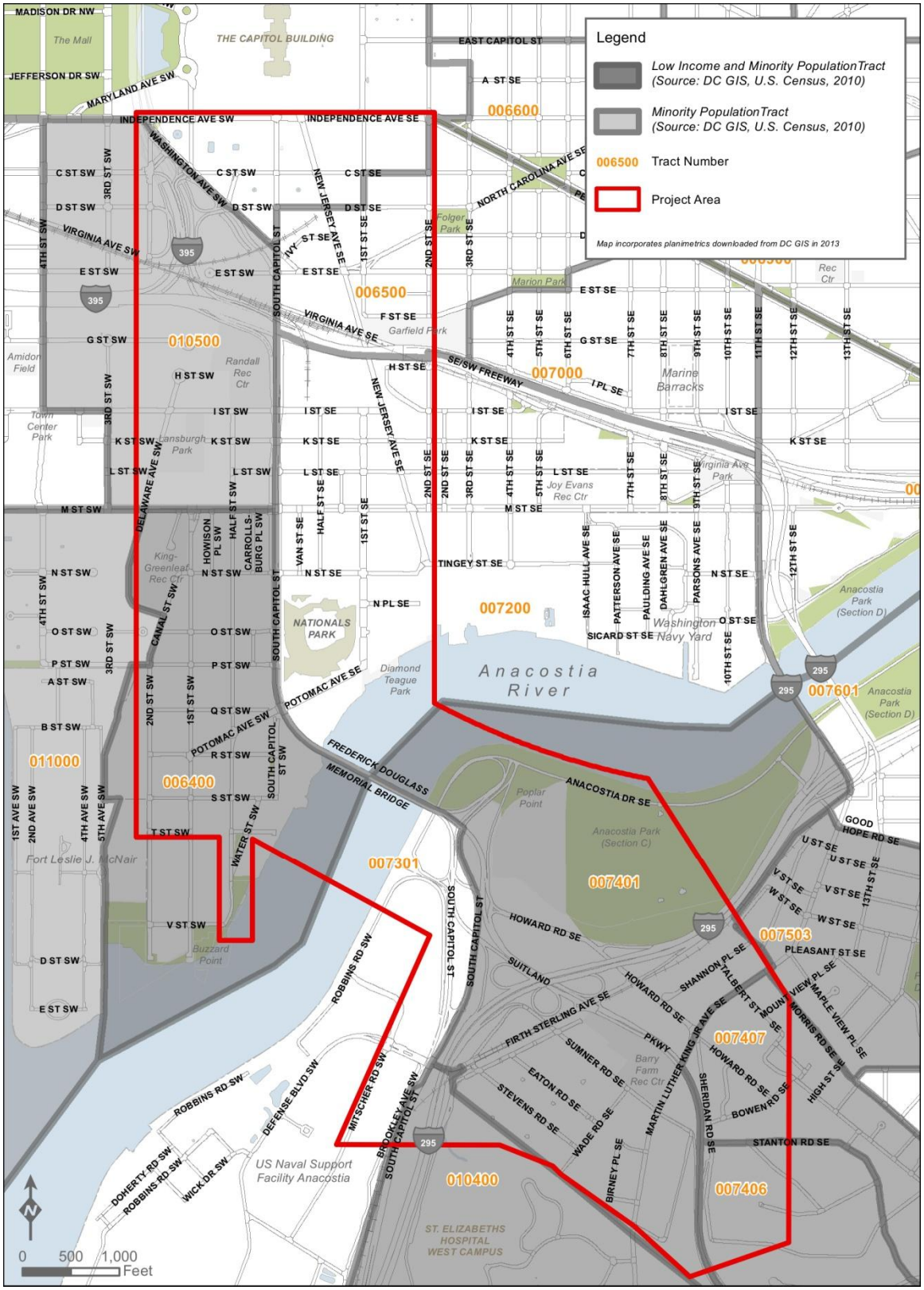


Table 3-11: Environmental Justice Populations

Project Area Census Tracts	Total Census Tract Population	Total Minority Population*	Percentage Minority Population*	Persons Below Poverty Level	Percentage of Persons Below Poverty Level
006400	2,139	2,006	93.8%	598	31.1%
006500	2,531	532	21.0%	33	1.3%
007200	2,794	1,225	43.8%	141	11.7%
007301	3,012	1,407	46.7%	35	1.4%
007401	2,414	2,399	99.4%	1255	57.3%
007406	3,063	3,052	99.6%	1495	47.2%
007407	2,587	2,555	98.8%	942	31.7%
010500	3,410	2,410	70.7%	822	19.4%
Project Area Totals	21,950	15,586	71.0%	5,321	25.7%
DC Totals	601,723	392,259	65.2%	101,767	18.5%

Source: U.S. Census Bureau 2010 Summary File 1, ACS 5-Year Estimates (income data)

* Includes Black Not of Hispanic Origin, Hispanic, American Indian or Alaskan Native, Asian or Pacific Islander, "Other Race," and "Two or More Races"

Table 3-12: Minority Population

Project Area Census Tracts	Percentage Black Population*	Percentage Hispanic Population	Percentage Other Minority Population**	Percentage Minority Population
006400	86.0%	3.0%	4.8%	93.8%
006500	8.8%	4.9%	7.4%	21.0%
007200	30.5%	5.5%	7.8%	43.8%
007301	23.8%	13.0%	9.9%	46.7%
007401	97.0%	1.3%	1.1%	99.4%
007406	96.3%	2.3%	1.0%	99.6%
007407	95.4%	1.4%	1.9%	98.8%
010500	54.5%	6.2%	10.0%	70.7%
District of Columbia	50.0%	9.1%	6.1%	65.2%

Source: U.S. Census Bureau 2010 Summary File 1

* Not of Hispanic Origin
** American Indian or Alaskan Native, Asian or Pacific Islander, "Other Race," and "Two or More Races"

The Project Area census tracts contained a percentage of low-income persons (25.7 percent) that is substantially higher than the District average of 18.5 percent. For the Project Area census tracts, the low-income percentage ranged from 1.3 percent to 57.3 percent.

Of the eight census tracts in the Project Area, five census tracts contain minority populations of 50 percent or more (census tracts 006400, 007401, 007406, 007407 and 010500). With the exception of census tract 010550, these same census tracks also exceeded the low-income threshold of 20.35 percent. Census tract 010550 had a total minority average at 70.7 percent and a total poverty average of 19.4 percent. Table 3-13 and Figure 3-7 presents the census tracts that meet or exceed the EJ thresholds.

Table 3-13: Census Tracts Meeting Environmental Justice Thresholds

	Minority		Poverty	
Census Tract	Meets First Threshold*	Meets Second Threshold**	Meets First Threshold*	Meets Second Threshold**
006400	Yes	--	--	Yes
006500	No	--	--	No
007200	No	--	--	No
007301	No	--	--	No
007401	Yes	--	--	Yes
007406	Yes	--	--	Yes
007407	Yes	--	--	Yes
010500	Yes	--	--	No

*Percentage more than 50 percent of census tract total population
** Percentage more than 10 percent of the District average

In summary, five of eight census tracts in the Project Area (census tracts 006400, 007401, 007406, 007407 and 010500) were identified as minority and/or low-income areas using the 50 percent minority threshold or the "meaningfully greater" threshold criteria for presence of a low-income population. These locations were considered EJ areas for the purposes of the impact analysis. The remaining three census tracts did not meet the criteria for an "EJ area". These three are census tracts 006500 and 007200, located along M Street (east of South Capitol Street) and census tract 007301, located on JBAB property (east of the river). Analysis of the 2010 Census data revealed that the areas on the east side of South Capitol Street along the M Street corridor (census tracts 06500 and 007200) are no longer EJ areas as reported in the FEIS and are now identified as non-EJ areas although some minority and low-income persons are still present within the census tract boundary. The change in the EJ assessment for these census tracts is due, in part, to the extensive redevelopment in the Project Area and surrounding Southeast and Southwest neighborhoods that have occurred since the 2000 Census, which was the data used for the FEIS.

In addition to this change, census tracts 010400 and 007503 — located east of the river, and analyzed in the FEIS (year 2000 block groups 0075032, 0075033, and 0098091 now referenced as census tract 0104002 in the 2010 Census), were not included in the Supplemental DEIS updated analysis because the Project does not impact these areas. The remaining neighborhoods within the Project Area, previously identified as being located in an EJ area, continue to have the same classification as reported in the FEIS.

3.5 Wetlands

A total of six wetlands were identified in the Project Area during the 2005 wetland delineation for the FEIS. All of the wetlands were located within Anacostia Park on Poplar Point. In April 2005, representatives from the USACE, NPS, DDOE, and DDOT conducted a field verification of the wetlands. An approved JD was issued by the USACE on July 1, 2005, valid for five years.

A new wetland delineation was conducted for the Project in the spring and summer of 2014, as the original JD had expired. Wetlands previously identified within the interior of Anacostia Park were not reevaluated, since they lie well outside the construction limits of the Project. Wetlands along the west side of Anacostia Park were reassessed, but were found to be the same as when originally delineated in 2005, and thus required no additional delineation.

Three new wetlands were discovered within the Project Area. A palustrine forested (PFO) wetland was delineated between I-295 and Golden Raintree Drive (see Figure 3-8). This small, linear wetland was identified as an unnamed tributary stream during the original delineation. However, conditions have changed, and the system no longer has stream features, but is instead functioning as a forested wetland. Two palustrine emergent (PEM) wetlands were also delineated between Suitland Parkway and Dunbar Road.

A field survey with the USACE was conducted on August 20, 2014 to determine the revised JD. The *Supplemental Natural Resources Technical Report* (DDOT, 2014) (Appendix E) contains more detailed information on wetland conditions with the Project Area. In a letter dated February 5, 2015, the USACE provided its final JD of wetlands within the Project Area, which has an expiration date of five years from the date of the letter. The USACE determined that the three new wetlands discovered within the Project Area are isolated wetlands (no observed connection to any Waters of the U.S.) that would not be subject to USACE jurisdiction if they were to be affected by the Project. However, they would still be subject to DDOE jurisdiction, per their letter on February 27, 2015. Both the USACE and DDOE correspondence is included in Appendix K.

Figure 3-8: Delineated Wetlands (2014)

3.6 Threatened and Endangered Species

Through coordination with the USFWS and NMFS, the federally-listed endangered shortnose sturgeon was identified as being present in the upper tidal Potomac River, and could potentially be present in the lower Anacostia River where the existing Frederick Douglass Memorial Bridge crosses the river. In December 2006, the DDOT requested consultation with the NMFS pursuant to Section 7 of the *Endangered Species Act of 1973*, as amended (16 USC 1531 et seq.), for the shortnose sturgeon. A *Biological Assessment for the Shortnose Sturgeon* (DDOT, 2006) was prepared in the fall of 2006 to evaluate the likelihood that the shortnose sturgeon is present within the Project Area (i.e., the Anacostia River at and near the bridge). The assessment concluded that the shortnose sturgeon is not likely present in the Project Area. With this information, the FHWA determined that the Project is "not likely to adversely affect" the shortnose sturgeon. In February 2007, the NMFS concurred with this determination, thus, completing the Section 7 consultation process for the FEIS.

With the reopening of the NEPA process, Section 7 consultation also was reopened. Consultation with the NMFS occurred in August 2013, which resulted in the identification of the Atlantic sturgeon, which was formally listed by the USFWS as an endangered species on April 6, 2012, as possibly being present within the Project Area. Another *Biological Assessment for the Atlantic Sturgeon* (DDOT, 2014) (Appendix F) was prepared to address the likelihood of occurrence of the Atlantic sturgeon within the Anacostia River and what, if any, impacts to the species could occur from construction of the Project (*Biological Assessment of Impacts to the Atlantic Sturgeon (Acipenser oxyrinchus),* May 2014).

Based on available scientific data about sturgeon captures and the general lack of suitable spawning and foraging habitat for Atlantic sturgeon in the Anacostia River, the assessment determined an extremely low likelihood that Atlantic sturgeon are present within the Project Area.

There are no known records of the Atlantic sturgeon within the Anacostia River or within the Potomac River at or near the District. Of the 1,590 wild and 463 hatchery-reared juvenile Atlantic sturgeon captures in the Chesapeake Bay watershed, only 11 wild and one hatchery-reared sturgeon were captured in the Potomac River upstream from the U.S. Route 301 crossing (USFWS 2013), which is more than 50 miles downstream from the District. None of these captures occurred within tidal freshwater areas.

The Anacostia River and its tributaries lack suitable spawning areas for sturgeon, reducing the likelihood that Atlantic sturgeon would enter the Anacostia River to spawn. Lack of spawning Atlantic sturgeon would eliminate the possibility of young-of-year sturgeon moving back downstream through the Project Area. Therefore, the only likely scenario for Atlantic sturgeon to be present within the Anacostia River would be juvenile fish seeking suitable foraging habitat. However, the river contains low quantities of macroinvertebrates, limiting the available food supply for the juvenile fish. Therefore, Atlantic sturgeon may occur as transients in low numbers in the Project Area.

With the information provided in the biological assessment of the Atlantic sturgeon, the FHWA, in a letter to the NMFS dated August 1, 2014, determined that the Project is "not likely to adversely affect" the Atlantic sturgeon in accordance with Section 7 of the Endangered Species Act. In a letter dated September 16, 2014, the NMFS responded that no federally listed or proposed threatened or endangered species under their jurisdiction exist in the vicinity of the Project and that no direct or indirect effects are expected. This completed the updated Section 7 consultation process for the Project (see Appendix K).

3.7 Floodplains

The FEIS relied on the 2002 FIRM (FEMA, 2002) to identify floodplains in and around the Project Area. The FIRM was updated in 2010, which included modifications to the 100-year and 500-year floodplains. Figure 3-9 presents information from the 2010 FIRM. The 2010 FIRM (FEMA, 2010) showed substantial changes to the 100-year floodplain on both east and west of the Anacostia River.

On the east side of the river, the 100-year floodplain expanded and now covers most of Anacostia Park and Poplar Point, and more areas within the JBAB, reaching the southbound sections of South Capitol Street.

On the west side of the river, two areas were added to the 100-year floodplain on the 2010 FIRM. The first is a large area that extends from Independence Avenue south to about P Street, roughly incorporating the northwest quadrant of the Project Area. The second area is an expansion of the floodplain along the west bank of the Anacostia River, south of Tingey Street.

Figure 3-9: Existing Floodplains

3.8 Cultural Resources

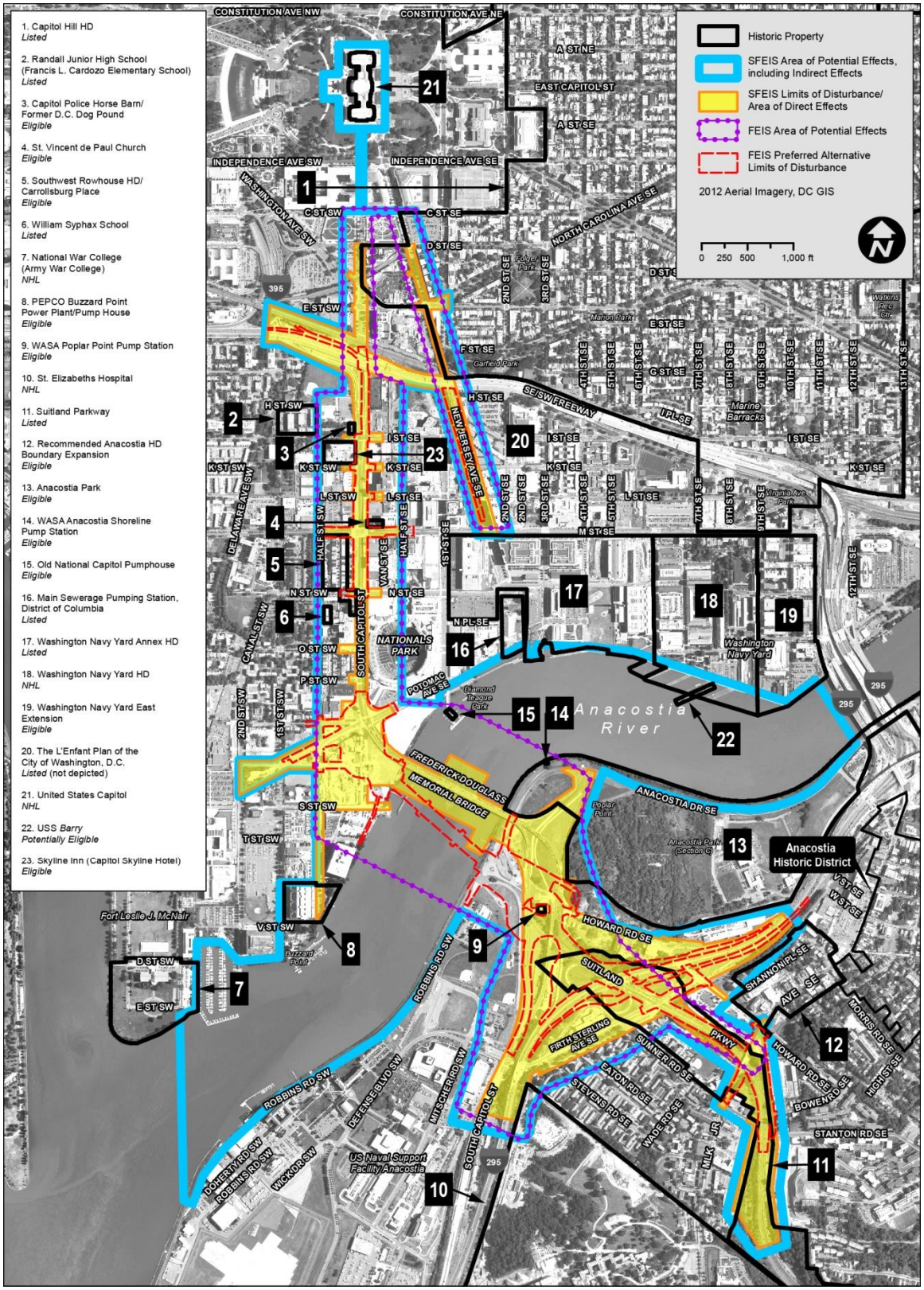
3.8.1 Section 106 Legal and Regulatory Context

The Project is subject to compliance with the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470 et seq.) and its' implementing regulations (36 CFR 800). Specifically, Section 106 of the NHPA requires that the responsible Federal agency consider the effects of its actions on historic properties, which are properties listed in or determined eligible for listing in the NRHP. The Federal Advisory Council on Historic Preservation (ACHP) must have an opportunity to comment on the undertaking.

Section 106 requires that the lead Federal agency, in consultation with the State Historic Preservation Office (SHPO), develop the APE, identify historic properties (i.e., properties listed on or eligible for the NRHP) in the APE, and determine the proposed project's effect on historic properties in the APE. Section 106 regulations require that the lead Federal agency consult with the SHPO and identified parties with an interest in historic properties during planning and development of the proposed project. The ACHP may participate in the consultation or may leave such involvement to the SHPO and other consulting parties. The ACHP, if participating, and SHPO are provided an opportunity to comment on the proposed project and its effects on historic properties. They participate in developing a Memorandum of Agreement (MOA) or Programmatic Agreement (PA) to avoid, minimize, or mitigate adverse effects, as applicable. Stipulations in a MOA or a PA must be implemented.

If a project adversely affects a National Historic Landmark (NHL), then the Federal agency must also comply with Section 110(f) of the NHPA. Section 110(f) of the NHPA requires that the agency undertake, to the maximum extent possible, planning and actions to minimize harm to any adversely affected NHL and give the ACHP an opportunity to comment. In cases of an adverse effect to an NHL, 36 CFR 800.10(c) requires that the lead Federal agency notify the U.S. Secretary of the Interior and consult with the ACHP. Staff members who meet the U.S. Secretary of the Interior's Professional Qualification Standards in history and architectural history performed the Section 106 investigations for the Project. For the South Capitol Street Project, the Section 106 process was reinitiated to address changes introduced by the Revised Preferred Alternative. The APE was revised and expanded to accommodate changes in the Project design and comments from consulting parties. The design changes resulted in changes to the Limits of Disturbance (LOD), which is the physical area that the selected designer/contractor would have the option to use to construct the Project, as well as other required activities such as parcel access, material storage or staging if it is not specifically prohibited (e.g., such as for non-permitted wetland impacts). The changes to the APE and LOD are shown on Figure 3-10.

Figure 3-10: Area of Potential Effects for the Revised Preferred Alternative



As a result, additional historic properties are being considered. Project effects to historic properties within the revised APE were evaluated and initial comments from consulting parties and the DC SHPO, received at a meeting on July 10, 2014 were considered and included. *The South Capitol Street Project Section 106 Assessment of Effects for Historic Properties* (DDOT, 2014) (Appendix G), will be submitted to the DC SHPO and consulting parties for review in early August 2014. The Project's MOA was amended and restated in consultation with consulting parties and signatories to reflect changes in effects assessments.

3.8.2 Identification of Historic Properties

Historic properties are listed in or determined eligible for listing in the NRHP by applying the NRHP Criteria for Evaluation to assess a property's historic significance. As stated in the NRHP Bulletin, *How to Apply the National Register Criteria for Evaluation* (NPS, 1997), the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

A. Are associated with events that have made a significant contribution to the broad patterns of our history, or

B. Are associated with the lives of persons significant in our past, or

C. Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction, or

D. Have yielded, or may be likely to yield, information important in prehistory or history

If a property is determined to possess historic significance, its integrity is evaluated using the following seven Aspects of Integrity to determine if it conveys historic significance: location, design, setting, materials, workmanship, feeling, and association. If a property is determined to possess historic significance under one or more Criteria and retains integrity to convey its significance, then the property is determined eligible for the NRHP during the Section 106 (16 USC 470 et seq. and 36 CFR 800) review.

Within the South Capitol Street Project's revised APE, there are 27 previously identified historic properties (23 are built properties and four are archaeological sites). Of the 23 built historic properties, four are National Historic Landmarks (NHL): the Washington Navy Yard Historic District, St. Elizabeths Hospital, the United States Capitol, and the National War College.

3.8.3 Built Historic Properties

Generally, buildings more than 50 years of age within the APE have been surveyed, documented, and evaluated for NRHP eligibility. Files at the NRHP and the DC SHPO were used to identify built historic properties in the revised APE. Reports completed for prior phases of the South Capitol Street Project and other projects completed in the APE were also reviewed. The revised APE for the Revised Preferred Alternative includes the area previously identified as the APE, and an expanded area to accommodate both direct and indirect effects. Additional

historic properties were identified based on the larger APE for the Revised Preferred Alternative, compared with the APE in the FEIS. Figure 3-10 identifies the built historic properties within the revised APE.

One additional property, the Skyline Inn, was evaluated during a prior phase of the Project. At that time, the hotel was less than 50 years of age and it was determined to be not eligible for the NRHP. However, since the Skyline Inn has now reached 50 years of age, it was reevaluated on a DC State Historic Preservation Office Determination of Eligibility Form using standard criteria for the NRHP. A draft version of the form was submitted in early August 2014 to the DC SHPO and other consulting parties for review and comment at the same time as the *Draft South Capitol Street Project Section 106 Assessment of Effects for Historic Properties* (DDOT, 2014). The draft version of the form supported the initial not eligible determination. In correspondence from September 18, 2014, the DC SHPO requested revisions to the form, stating that the agency assumed the Skyline Inn would be "determined eligible as we suspect it should be." The form was revised and the determination was changed to eligible. The revised form and revised *South Capitol Street Project Section 106 Assessment of Effects for Historic Properties* (DDOT, 2014) has been submitted to the DC SHPO for review and concurrence and to other consulting parties for review. Both are included in Appendix G of this document.

During a meeting on September 4, 2014, the NPS inquired about the status of the Barry Farm Recreation Center, which is within the general project vicinity. According to NPS staff, this property is eligible for listing in the NRHP. The Barry Farm Recreation Center, located at 1230 Sumner Road SE, is important for its association with providing recreational opportunities to African-American residents in segregated Ward Eight. It is the site of the first city playground for African-American children, and is also associated with the debut of GoGo music. The Barry Farm Recreation Center is located outside of the APE for the South Capitol Street Project. Therefore, it is not a historic property that is considered as part of the Section 106 process for the Project, although it has important historic associations within the city. The Project's APE was established in consultation with the DC SHPO and amended in response to additional DC SHPO and consulting parties' comments.

3.8.4 Archaeological Resources

The *South Capitol Street Draft Environmental Impact Statement (DEIS) and Section 4(f) Evaluation* (DDOT, 2007) included a Phase 1(a) assessment of eight archaeological sub-areas within the South Capitol Street APE based on existing maps, photographs and archival data. This assessment concluded that seven of the eight areas investigated within the APE had low potential to contain significant or intact subsurface archaeological remains.

Additional Phase 1(b) assessments of these seven areas were not recommended. However, the assessments noted the potential for previously unidentified archaeological resources in one area, Poplar Point, on the south side of the Anacostia River. The original area of Poplar Point, comprised of Anacostia River and Stickfoot Branch alluvium, included open and undeveloped areas where archaeological resources may have been preserved, so a Phase 1(b) assessment was recommended. The *Phase 1(a) Archaeological Assessment of Proposed Improvements to*

the South Capitol Street Corridor, Washington, D.C. (DDOT, 2006) presented the results. The DC SHPO concurred with the findings and recommendations of the Phase 1(a) report in June 2006.

The Phase 1(b) assessment area included the area bounded by Howard Road SE, Firth Sterling Avenue SE, and South Capitol Street. Shovel test pit (STP) excavation in Poplar Point failed to uncover any significant or intact archaeological remains. Most of the APE is located in previously disturbed areas or in areas that have been covered by deep fill. The Phase 1(b) assessment concluded that no significant archaeological resources are likely to exist within the Poplar Point portion of the APE, and that no further investigations are warranted. The *Phase 1(b) Archaeological Survey of Proposed Improvements to the South Capitol Street Corridor, Washington, D.C.* (DDOT, 2007) presented the results. The DC SHPO concurred with the findings and recommendations of the Phase 1(b) report in June 2009.

There are four previously identified archaeological sites that fall within the South Capitol Street Project's revised APE: Sites 51SE012, 51SE024, 51SE034 (Howard Road Historic District), and 51SE071. However, none of these sites are located in areas where construction-related soil disturbance will occur. Site 51SE024 is located outside of the LOD. Sites 51SE012 and 51SE071 are deeply buried in historic fill and will not be affected by the Project-related construction activities. Site 51SE034 is within the LOD and has been disturbed by prior construction from other projects. The Revised Preferred Alternative has no effect to previously identified archaeological resources.

The revised APE for the Revised Preferred Alternative included areas of potential soil disturbances that were not evaluated during the FEIS. These new areas were evaluated for potential new effects on archaeological resources. A detailed evaluation of archaeological resources was conducted within the LOD and the potential to affect previously unidentified archaeological resources is minimal. Therefore, additional archaeological investigation of the LOD is not recommended. The results, contained in the *Draft South Capitol Street Project Section 106 Assessment of Effects for Historic Properties* (DDOT, 2014) were submitted to the DC SHPO and other consulting parties for review and comment in August 2014. In correspondence dated September 18, 2014, the DC SHPO concurred with the archaeological assessment for the South Capitol Street Project.

3.9 Hazardous Materials

Industrial and hazardous waste materials and their management are federally-regulated under three laws: the 1980 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the 1986 Superfund Amendment and Reauthorization Act (SARA) which amended CERCLA, and the Resource Conservation and Recovery Act (RCRA) (42 USC 6901 and 42 USC 103). CERCLA and SARA focus on liability for cleanup of contaminated sites and establish an innocent landowner defense. RCRA addresses the management of hazardous materials, including the manufacture, storage, transportation, use, treatment, and disposal of waste materials (USEPA, 1976).

FHWA and DDOT policies emphasize the early identification of sites with potential environmental concerns such as contamination; the assessment of the type and extent of contamination and estimated cleanup costs; and avoidance of substantially contaminated properties. The current policies of the agencies recognize minor sources of contamination that can be remediated easily and do not generally result in excessive project delays, cleanup costs, or liability. Examples include limited contamination from leaking underground storage tanks [USTs], and asbestos and lead associated with structures to be demolished.

The FEIS summarized the findings of several hazardous materials assessments including a Preliminary Environmental Screening Assessment (PESA) and Phase 1 and Phase 2 Environmental Site Assessments (ESA). Those reports include:

- *Preliminary Environmental Screening Assessment Report* (DDOT, 2006)
- *Phase 1 Site Assessment and Contaminated Materials Management Report* (DDOT, 2005)
- *Phase 2 Environmental Site Assessment for South Capitol Street Protective Buying: Jemal's Buzzard Point, LLC and Florida Rock Properties, Inc.* (DDOT, 2008)

The PESA identified several areas where subsurface contamination may be encountered in the Project Area. A total of 53 sites were determined to be sites of concern that presented a contamination risk to the Project. Sites were prioritized as presenting a "slight" (26 sites), "moderate" (18 sites), or "severe" (nine sites) risk of contamination within the Project Area. Severe sites were identified as properties or clusters of properties with widespread contamination or previous or on-going remediation efforts, or as contaminated soil and/or groundwater likely to extend beyond property boundaries. These properties may be within or near the Project rights-of-way and most likely to be impacted by Project construction. The identified severe sites were recommended for further investigation in a Phase 2 ESA.

A *Modified Phase I Environmental Site Assessment (ESA)* (DDOT, 2014) (Appendix H) was completed to provide an updated analysis of hazardous materials in the Project Area. Similar to the FEIS, the ESA identified recognized environmental conditions (REC) including fill soil, asbestos containing materials, lead paint, and properties of concern.

The 2014 Phase 1 ESA identified many of the same properties of concern as the 2006 PESA. The ESA revealed the presence of 56 properties of concern in or near the Project Area, 14 of which

were newly identified. The change in the number of properties of concern may be due to changes in ownership or land use, resulting in different site names. Some of these facilities were identified through multiple sources; others were identified from a single source. The facilities include former gasoline stations, bulk petroleum storage facilities, vehicle repair facilities, dry cleaners, properties with underground storage tanks, former coal yards, and a Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) facility with a consent order.

Table 3-14 lists the properties of concern and categorizes the risk level for each property of concern as "low, medium or high," compared with the "slight, moderate or severe" categories used in the FEIS.

Table 3-14: Properties of Concern

ID	Site	Address	Risk Level
1.	Matthew Memorial Baptist Church, Leaking Underground Storage Tank (LUST) facility	2616 Martin Luther King, Jr. Avenue	Medium
2.	Vacant Property, former gas station, former dry cleaners	2500-2504 Martin Luther King Jr. Ave/2503-2509 Sheridan Road SE	High
3.	Church Parking Lot, former gas station	2501 Martin Luther King, Jr. Avenue	Medium
4.	Wooded Property, Brownfield property	2458 Martin Luther King, Jr. Avenue	Medium
5.	Wooded Property, former automobile repair facility	831 Howard Road SE	Medium
6.	District Department of Mental Health, LUST facility	819-821 Howard Road SE	Medium
7.	Vacant Commercial Property, former automobile repair facility	822 Howard Road SE	Low
8.	Poplar Point Nursery, CERCLIS/LUST facility	600 Howard Road SE	High
9.	Unknown Facility, prior listing in FEIS, but no new information	2750 South Capitol Street SW	Low
10.	Verizon – Barry Road Facility, LUST facility	2600 Barry Road SE	Medium
11.	Vacant Commercial Property, former gas station, LUST facility	631-637 Howard Road SE	High
12.	Joint Base Anacostia - Bolling, Anacostia naval station, multiple LUST incidents	2701 South Capitol Street SW	Medium
13.	Anacostia River, multiple ERNS incidents, probable contaminated sediment	Anacostia River	High
14.	Frederick Douglass Memorial Bridge over Anacostia River, PA Manifest	Frederick Douglass Memorial Bridge	Medium
15.	South Capitol Street Heliport, contaminated property	1724 South Capitol Street SE	High
16.	Recycled Aggregates, former bulk petroleum terminal	1721 South Capitol Street SW	High
17.	Bulk Oil Terminal, two large ASTs	1st Street SW	Medium
18.	Super Salvage Facility, scrap yard	1711 1st Street SW	Medium
19.	Jemal's Buzzard Point, former bulk petroleum terminal property	1620 South Capitol Street SE	High
20.	Superior Concrete – Southeast Building, LUST facility	1625 South Capitol Street SW	High

Table 3-14: Properties of Concern (continued)

ID	Site	Address	Risk Level
21.	Superior Concrete Materials, LUST facility	1601 South Capitol Street SW	High
22.	Maintenance Yard, salt storage	Northwest corner of Half Street SW and R Street SW	Low
23.	Metro Building Supply, former automobile repair, LUST facility	50 Q Street SW	High
24.	Vacant Property – Florida Rock Properties, contaminated property, LUST facility	1 and 25 Potomac Avenue SE	High
25.	Singh Transmission, former dry cleaners and gas station	1505-1515 South Capitol Street SW	High
26.	Gold Star Services, automobile repair facility	39 Q Street SW	Low
27.	USA Motors, automobile repair facility	45 Q Street SW	Medium
28.	U-Haul Self Storage, LUST facility	1501 South Capitol Street SW	Medium
29.	National's Ball Park, former automobile repair, contaminated property	1500 South Capitol Street SE (and multiple other addresses)	Medium
30.	Camden South Apartments, former cleaners, gas station, automobile repair, and drum storage yard	1321-1345 South Capitol Street SW	High
31.	Closed Gas Station, former gas station	1244-1256 South Capitol Street SE	High
32.	Parking Lot, Brownfield property	1236 South Capitol Street SE	Medium
33.	55 M Street Building, LUST facility	Half and M Streets SE	Medium
34.	Public Storage Rental Center, former cleaners	1226-1230 South Capitol Street SE	High
35.	DC Superior Court, RCRA generator	1215 South Capitol Street SW	Medium
36.	Undeveloped Property, former dry cleaners	12-18 M Street SW,	High
37.	Parking Lot, former gas station	1200 South Capitol Street SE	High
38.	Storage Yard, LUST facility	17 M Street SE	High
39.	BAE Systems Building, LUST facility	80 M Street SE	Medium
40.	Parking Lot J, former gas station	50 M Street SE	Medium
41.	Booz Allen Hamilton Building, former gas station	20 M Street SE	Medium
42.	7-Eleven, former gas station	1119 South Capitol Street SW	High
43.	Parking Lot, LUST facility	1112 Half Street SW	Medium
44.	Vacant Property, former gas station	1001-1015 South Capitol Street SW	High
45.	1015 Half Street SE Building, former metal plating facility	12 L Street SE	Medium
46.	Vacant Commercial/Industrial Property, former bulk petroleum facility and gas station	900-950 South Capitol Street SE	High
47.	Capitol Skyline Hotel, former coal yard, Underground Storage Tank (UST) facility	901-911 South Capitol Street SW	Low
48.	Multi-Use Property, former coal yards	2-32 I Street SE	Medium
49.	Capitol Power Plant, UST facility and former coal yard	Southwest corner of New Jersey Avenue SE and E Street SE	Medium
50.	Verizon Parking Lot, former junk warehouse and former gas station	499-501 South Capitol Street SW/ 3 Virginia Avenue SW/4 E Street SW	High
51.	Verizon E Street Facility, UST facility	30 E Street SW	Medium
52.	Vacant Industrial Building, former UST facility	1201 New Jersey Avenue SE	Medium

Table 3-14: Properties of Concern (continued)

ID	Site	Address	Risk Level
53.	Alion Building, LUST facility	1100 New Jersey Avenue SE	Medium
54.	Capitol Hill Tower – Courtyard Marriott, former cleaners, LUST facility	1000 New Jersey Avenue SE	Medium
55.	909 At Capitol Yards Apartment Building, LUST facility	909 New Jersey Avenue SE	Medium
56.	Site Under Construction, LUST facility	900 New Jersey Avenue SE	Low

Notes:

Low Risk: Properties containing suspected or documented contamination that is limited within the property boundary and is not expected to extend into the Project rights-of-way. Such factors as previous remediation efforts and the distance of the site location from the Project alignment have substantially reduced the likelihood of adverse impacts to the Project from these sites.

Medium Risk: Properties that contain documented contamination releases and that may extend beyond the property boundary. Sites may have completed on-site remediation of contaminated areas but the presence of residual levels of contamination, which could impact the Project alignment, is still likely. Contamination may be present in the construction zone at concentrations that require special management and disposal.

High Risk:Properties or clusters of properties with widespread contamination and/or previous or on-going remediation efforts. Contaminated soil and/or groundwater likely extend beyond property boundaries. In addition, these sites may be adjacent to, or in close vicinity to, the Project rights-of-way. Project excavation and dewatering efforts would probably encounter some degree of contamination. Adverse impacts to construction would depend on the type of contaminant, migration pathways, depth of excavation, and dewatering conditions.

Unexploded Ordinances

A preliminary assessment summarized the history of munitions use at the Former Experimental Battery (Malcolm Pirnie Inc., 2006). The battery was operational approximately 1847 to 1872 and its firing fan encompassed portions of the Project Area (e.g., Anacostia River, Anacostia Park and Poplar Point).

The preliminary assessment concluded that the presence of munitions and explosives of concern (MEC) at the site is unlikely, based on extensive grading and development activities that have occurred at the Washington Navy Yard. However, the report further noted that MEC and munitions constituents (MC) could exist in subsurface soil and groundwater of the site, and that an exposure pathway to these items is potentially complete depending on activities that would disturb the subsurface soils.

Based on these concerns, a site investigation was conducted for the Former Experimental Battery on behalf of the USN to augment the data collected in the Project Area and to determine if further investigation was necessary (CH2M Hill, 2011). The site investigation consisted of a technical review and interpretation of the 2006 preliminary assessment (Malcolm Pirnie Inc., 2006); reviews of additional files, documents, and photographs, site visits, interviews; and a spatial analysis of available information (i.e., presence and location of cannon balls and firing fans, Washington Navy Yard fill history, Anacostia River dredge and fill history). Environmental sampling was not conducted, and other field data were not collected, due to extensive grading, redevelopment, dredging, and land reclamation activities in the Project Area.

The 2011 site investigation (SI) concluded that the probability of encountering shells or solid shot in the Anacostia River near the Washington Navy Yard is “seldom to unlikely.” There has

been extensive dredging of the channel and filling of the mudflats where shot and shells would have fallen. In addition, the majority, if not all of the fired ordnance, was inert.

Some portions of Poplar Point and Anacostia Park are located within the historical firing fan for the Former Experimental Battery at Washington Navy Yard. As a result, it is possible that related shot and shells may remain at depths of 10 feet (i.e., the estimated minimum depth of the fill material) or greater in those areas of reclaimed land within the firing fan.

Other areas of Anacostia Park, while not falling within the firing fan, were created from dredge spoils from the Anacostia River after the operation of the Experimental Battery had ceased. It is possible, though somewhat remote, that the dredge spoils used to create Anacostia Park may have originated from within the firing fan and may contain undiscovered shots or shells.

3.10 Pedestrian and Bicycle Facilities

3.10.1 Pedestrian Access

The pedestrian access conditions presented in the FEIS remains largely the same. However, the following pedestrian facilities were added to the transportation network within the Project Area:

- On South Capitol Street, at the intersection of I Street, pedestrian crossing facilities were added on the south side of I Street with ADA accessible curb cuts and a median to facilitate pedestrian crossing, especially for those who are wheelchair dependent.
- On South Capitol Street under the Southeast-Southwest Freeway, a pedestrian path and sidewalk with streetlights were provided along the east side of the street.
- On Martin Luther King, Jr. Avenue SE between Howard Road SE and the Suitland Parkway Bridge, pedestrian obstructions on the center of the roadway were removed and ADA curb cuts were installed at the intersections.

In addition to the above facilities, sections of the Anacostia Riverwalk Trail were completed. On the west side of the Anacostia River, much of what was designated as the Interim Anacostia Riverwalk Trail in the FEIS has since been replaced by permanent facilities. The trail is now aligned along the Anacostia River through the Washington Navy Yard and the Yards development properties, and connected to Diamond Teague Park. The trail will ultimately extend to Buzzard Point upon completion of future development in the area. The path along 2nd Street SW is the only remaining section of the interim trail. The FEIS described the Interim Anacostia Riverwalk Trail, which remains on the east side of the river. However, the trail now contains additional routes through Anacostia Park and access to the Frederick Douglass Memorial Bridge.

3.10.2 Bicycle Access

The bicycle access conditions documented in the FEIS remain largely the same. However, some changes were made to bicycle network in and around the Project Area as noted below (see Figure 3-11):

- I Street SW, between 3rd and 6th Streets SW – installed bicycle lanes
- 4th Street SW, between I and M Streets SW – installed bicycle lanes
- O Street SW between 1st Street SW and South Capitol Street – eliminated signed bicycle route
- Anacostia Drive SE, the signed bicycle route – re-designated as part of the Anacostia Riverwalk Trail
- P Street SW, Half Street SW, L Street SE, and I Street -- designated as signed bicycle routes
- 4th Street SW between I Street SW and P Street SW – designated as a signed bicycle route
- Good Hope Road SE, 13th Street SE, and Pleasant Street SE – eliminated the signed bicycle routes

The Capital Bikeshare was launched in 2010 and has expanded to include over 1,800 bicycles located at more than 200 stations in the Washington, D.C. region. The FEIS did not include the locations of Capital Bikeshare stations in and around the Project Area. Currently, there are four Capital Bikeshare stations located in the Project Area:

- 1st and N Streets SE near the Nationals Park
- M Street SE and New Jersey Avenue SE in front of the U.S. DOT Headquarters
- 1st and K Streets SE
- Howard Road SE and Shannon Place SE, near the Anacostia Metrorail Station

Figure 3-11: Existing Bicycle Facilities

District Department of Transportation

3.11 Traffic and Transportation

This section summarizes existing traffic conditions in the Project Area. The *South Capitol Street Transportation Technical Report* (DDOT, 2014) contains an updated, detailed description of existing traffic conditions (see Appendix I). The technical report used traffic information collected in 2009 and 2010.

3.11.1 Travel Patterns

The classifications and characteristics of existing roadways throughout the Project Area are similar to those reported in the FEIS. However, as shown in Figure 3-12, South Capitol Street from Potomac Avenue to Firth Sterling Avenue SE was reclassified from a freeway to a principal arterial. In addition, Washington Avenue SW, which connects Independence Avenue SW and South Capitol Street, was designated an emergency evacuation route. Washington Avenue SW joins four other roadways in the Project Area with this designation (South Capitol Street, the Southeast-Southwest Freeway, I-295, and Suitland Parkway).

Travel patterns in the Project Area are essentially the same as described in the FEIS. Minor changes since the FEIS included new traffic calming measures on Sumner Road, comprising a series of speed bumps to increase safety. As described in the FEIS, the majority of traffic in the Project Area is commuter travel through the Project Area, to and from the District's Monumental Core. Traffic patterns are likely to change as planned developments, such as the Southeast Federal Center and the U.S. Department of Homeland Security (DHS) headquarters, at the St. Elizabeths Campus, occur in the Project Area.

3.11.2 Traffic Volumes

The FEIS reported traffic volumes from 2008. For the preparation of the Supplemental DEIS and Supplemental FEIS, average daily traffic (ADT) and intersection turning movements were updated based on information collected between November 2009 and February 2010. Traffic data collected in November 2010 indicates a typical weekday ADT volume of approximately 65,000 vehicles crossing the Frederick Douglass Memorial Bridge. Table 3-15 provides the updated ADT volumes at key locations in the Project Area.

The traffic analysis considered data collected during the morning and evening peak periods at several roadways within the Project Area. Morning peak periods are 6:00 to 9:00 a.m. and evening peak periods are 3:00 to 6:00 p.m. Table 3-16 presents the peak-hour traffic volumes along these roadways.

The updated evaluation of existing traffic conditions assumed that the percentage of trucks traveling through the Project Area remained the same as described in the FEIS. For purposes of assessing roadway and intersection operations, the evaluation assumed that trucks would comprise an average of five percent of total traffic in the Project Area. Overall, daily and peak hour traffic volumes in 2010 were slightly higher than reported in the FEIS, which used traffic information from 2008.

Figure 3-12: Roadway Network Functional Classification

District Department of Transportation

Table 3-15: Existing Daily Traffic Volumes in the Project Area (2010)

Roadways	2010 Existing Forecast
South Capitol Street Southbound	
I-395 southbound ramp to southbound South Capitol St	10,935
I-395 northbound (eastbound SE-SW Freeway) ramp to southbound South Capitol St	6,705
Southbound South Capitol St south of I St	22,300
Southbound South Capitol St south of N St	16,220
Suitland Pkwy south of Martin Luther King, Jr. Ave SE	25,020
Southbound South Capitol St south of Suitland Pkwy	10,615
Southbound South Capitol St ramp to southbound Suitland Pkwy	18,125
South Capitol Street Northbound	
Suitland Pkwy south of Martin Luther King, Jr. Ave SE	26,500
Northbound South Capitol St south of Suitland Pkwy	13,735
Howard Rd SE ramp to northbound South Capitol St	5,065
Northbound South Capitol St south of N St	22,260
Northbound South Capitol St south of I St	28,890
Northbound South Capitol St to northbound I-395	14,175
Northbound South Capitol St to southbound I-395 (westbound SE-SW Freeway)	8,135
Frederick Douglass Memorial Bridge (South Capitol Street)	
Northbound	34,730
Southbound	27,970
I-295 at Suitland Parkway	
Northbound	64,530
Southbound	67,070
Southeast-Southwest Freeway East of South Capitol Street	
Northbound	67,740
Southbound	69,680
11th Street Bridge (Local)	
Northbound	Under Construction
Southbound	Under Construction
11th Street Bridge (Freeway I-695)	
Northbound	47,030
Southbound	42,730

Source: O.R. George & Associates, MCV Associates, KCI Technologies, 2009/2010; Version 2.2 of MWCOG traffic model with Round 8.0 land use forecasts

Table 3-16: Existing Peak Hour Traffic Volumes in the Project Area (2010)

Roadways	Morning Peak Hour	Evening Peak Hour
South Capitol Street Southbound		
I-395 southbound ramp to southbound South Capitol St	610	450
I-395 northbound (eastbound SE-SW Freeway) ramp to southbound South Capitol St	900	510
Southbound South Capitol St South of I St	1,875	2,325
Southbound South Capitol St South of N St	1,650	2,640
Suitland Pkwy south of Martin Luther King, Jr. Ave	1,085	2,795
Southbound South Capitol St south of Suitland Pkwy	630	1,105
Southbound South Capitol St ramp to southbound Suitland Pkwy	1,090	2,825
South Capitol Street Northbound		
Suitland Parkway south of Martin Luther King, Jr. Ave	2,755	1,210
Northbound South Capitol St south of Suitland Pkwy	740	380
Howard Rd to northbound South Capitol St	1,080	540
Northbound South Capitol St south of N St	3,785	1,505
Northbound South Capitol St of I St	2,845	1,260
Northbound South Capitol St to northbound I-395	1,430	600
Northbound South Capitol St to southbound I-395 (westbound SE-SW Freeway)	840	695
Frederick Douglass Memorial Bridge (South Capitol Street)		
Northbound	4,345	1,330
Southbound	1,085	2,795
I-295 at Suitland Parkway		
Northbound	6,220	4,685
Southbound	4,550	5,910
Southeast-Southwest Freeway East of South Capitol Street		
Northbound	7,235	4,495
Southbound	4,005	5,180
11th Street Bridge (Local)		
Northbound	Under Construction	
Southbound	Under Construction	
11th Street Bridge (Freeway I-695)		
Northbound	5,230	2,650
Southbound	1,920	3,505

Source: O.R. George & Associates, MCV Associates, KCI Technologies, 2009/2010; Version 2.2 of MWCOG traffic model with Round 8.0 land use forecasts

Note: Volumes are for the highest one-hour peak within the peak periods: 6:00 to 9:00 a.m. and 4:00 to 6:00 p.m.

3.11.3 Intersection Level of Service Analysis

Both the previous and updated intersection analyses used a VISSIM traffic micro-simulation model to analyze existing traffic operations throughout the Project Area. The results are presented in level-of-service (LOS). LOS is a qualitative measure describing the operational conditions along a roadway or at an intersection. The LOS of a roadway or intersection falls into one of six categories identified as "A" through "F". LOS A represents free-flowing traffic operations and LOS F represents stop-and-go traffic conditions. In an urban area, such as the District of Columbia, a roadway or intersection operating at or better than LOS D is typically considered acceptable. Accordingly, a roadway or intersection operating at LOS E and F reflect unacceptable levels of congestion.

Figure 3-13 shows the locations of 27 intersections. However, two of the 27 intersections (intersections 15 and 24) are proposed for future implementation and, therefore, do not currently exist in the Project Area. The FEIS Preferred Alternative and the Revised Preferred Alternative include intersections 15 and 24 in their project definitions. Table 3-17 presents estimated average traffic delay (in seconds per vehicle) and the corresponding existing LOS for the remaining 25 intersections.

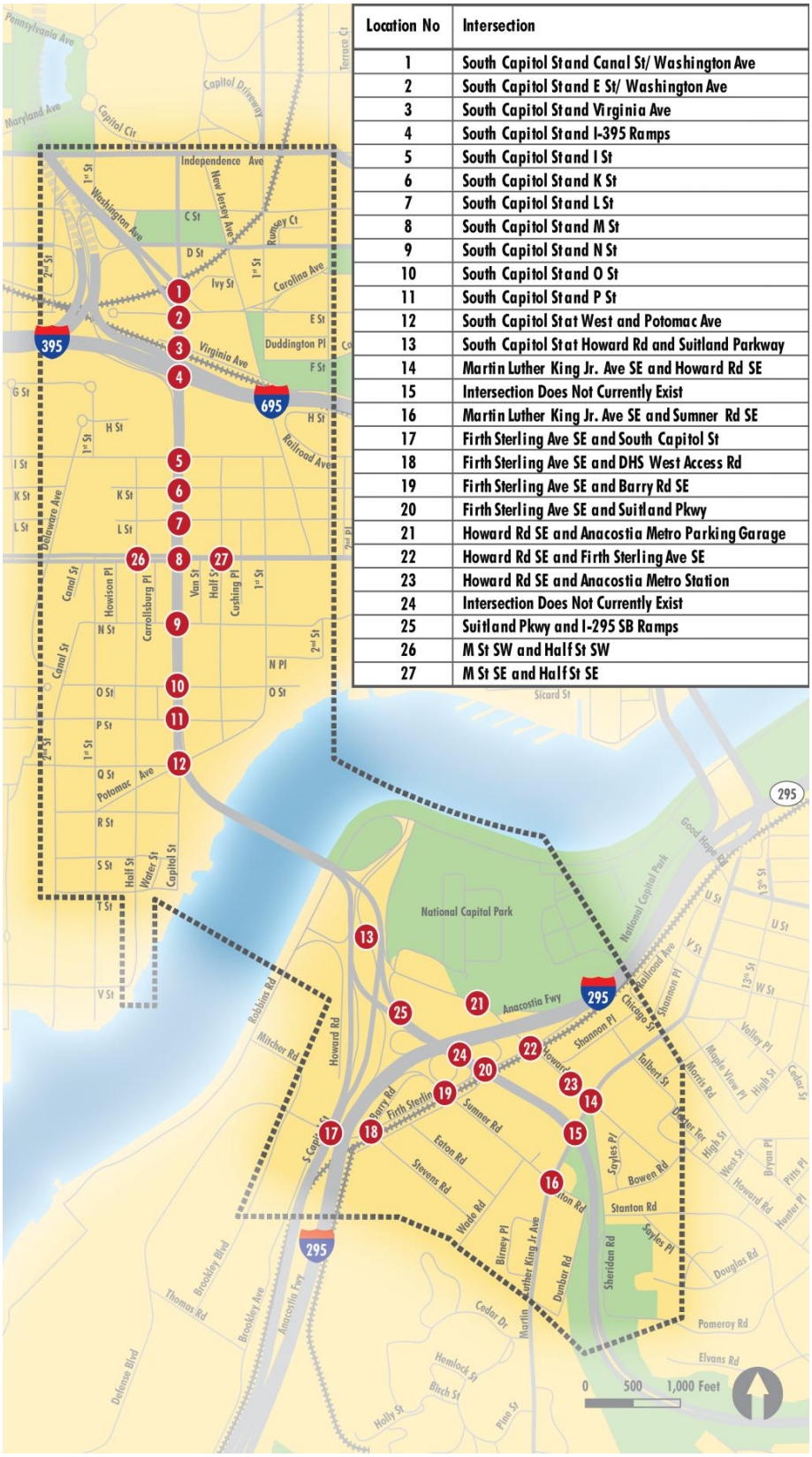
During the morning peak hour, the following five intersections currently operate at unacceptable levels of service:

- South Capitol Street at Potomac Avenue (LOS E)
- South Capitol Street at Suitland Parkway and Howard Road (LOS F)
- Firth Sterling Avenue SE at Barry Road SE (LOS F)
- Firth Sterling Avenue SE at Suitland Parkway (LOS E)
- Howard Road SE and I-295 southbound ramp (LOS F)

During the evening peak hour, the following nine intersections operate at unacceptable levels of service:

- South Capitol Street at E Street/Washington Avenue SW (LOS E)
- South Capitol Street at Virginia Avenue SE (LOS E)
- South Capitol Street at I-395 off-ramps (LOS F)
- South Capitol Street at K Street (LOS E)
- South Capitol Street at M Street (LOS F)
- South Capitol Street at N Street (LOS F)
- South Capitol Street at Potomac Avenue (LOS E)
- Martin Luther King, Jr. Avenue SE and Howard Road SE (LOS E)
- M Street at Half Street SW (LOS F)

Figure 3-13: Project Area Existing Intersections for Traffic Analysis



Location No	Intersection
1	South Capitol St and Canal St/ Washington Ave
2	South Capitol St and E St/ Washington Ave
3	South Capitol St and Virginia Ave
4	South Capitol St and I-395 Ramps
5	South Capitol St and I St
6	South Capitol St and K St
7	South Capitol St and L St
8	South Capitol St and M St
9	South Capitol St and N St
10	South Capitol St and O St
11	South Capitol St and P St
12	South Capitol St at West and Potomac Ave
13	South Capitol St at Howard Rd and Suitland Parkway
14	Martin Luther King Jr. Ave SE and Howard Rd SE
15	Intersection Does Not Currently Exist
16	Martin Luther King Jr. Ave SE and Sumner Rd SE
17	Firth Sterling Ave SE and South Capitol St
18	Firth Sterling Ave SE and DHS West Access Rd
19	Firth Sterling Ave SE and Barry Rd SE
20	Firth Sterling Ave SE and Suitland Pkwy
21	Howard Rd SE and Anacostia Metro Parking Garage
22	Howard Rd SE and Firth Sterling Ave SE
23	Howard Rd SE and Anacostia Metro Station
24	Intersection Does Not Currently Exist
25	Suitland Pkwy and I-295 SB Ramps
26	M St SW and Half St SW
27	M St SE and Half St SE

Table 3-17: Traffic Operations at Existing Intersections (2010)

Location No.*	Intersection	Morning Peak Hour		Evening Peak Hour	
		Delay**	LOS	Delay**	LOS
1	South Capitol St and Canal St/Washington Ave	10	B	25	C
2	South Capitol St and E St/Washington Ave	19	B	65	E
3	South Capitol St and Virginia Ave	7	A	62	E
4	South Capitol St and I-395 ramp	13	B	272	F
5	South Capitol St and I St	13	B	48	D
6	South Capitol St and K St	7	A	39	E
7	South Capitol St and L St	7	A	11	B
8	South Capitol St and M St	41	D	87	F
9	South Capitol St and N St	10	A	83	F
10	South Capitol St and O St	1	A	34	C
11	South Capitol St and P St	10	B	36	D
12	South Capitol St and Potomac Ave	76	E	58	E
13	South Capitol St and Howard Rd and Suitland Parkway	205	F	11	B
14	Martin Luther King, Jr. Ave SE and Howard Rd SE	36	D	62	E
15	*Intersection does not currently exist in the Project Area*	N/A	N/A	N/A	N/A
16	Martin Luther King, Jr. Ave SE and Sumner Rd SE	10	B	8	A
17	South Capitol St and Firth Sterling Ave SE	25	C	35	C
18	Firth Sterling Ave SE and West Access Rd	2	A	35	D
19	Firth Sterling Ave SE and Barry Rd SE	94	F	14	B
20	Suitland Pkwy	72	E	25	C
21	Howard Rd SE and Anacostia Metrorail Parking Garage	12	B	14	B
22	Howard Rd SE and Firth Sterling Ave SE	27	C	20	C
23	Howard Rd SE and Anacostia Metrorail Station	23	C	25	C
24	*Intersection does not currently exist in the Project Area*	N/A	N/A	N/A	N/A
25	Howard Rd SE and I-295 southbound ramp	86	F	42	D
26	M St SW and Half St SW	9	A	103	F
27	M St SE and Half St SE	13	B	11	B

* See Figure 3-13

** Seconds per vehicle

Notes: Highlighted cells represent those intersections with an unacceptable LOS
Intersections 12, 13 and 25 comprise a comparable intersection for a future design element in the Revised Preferred Alternative

Vehicle queues often form on certain intersection approaches because of delays at the intersections. The vehicle queues are a consequence of greater demand on the system than available capacity. The FEIS also reported this finding. Queues of longer than 300 feet (at least 12 vehicles) generally occur during the morning peak period in the northbound direction along Suitland Parkway and South Capitol Street at nearly every intersection from Firth Sterling Avenue (worst location in the morning) to I Street and the I-395 ramps. Other roads where major queues are observed during the morning peak period include Potomac Avenue SE, the I-395 ramps, and along Howard Road SE.

During the evening peak period, southbound queues typically occur along South Capitol Street from the I-395 ramps to Potomac Avenue; on Suitland Parkway at Firth Sterling Avenue SE; and

on Howard Road SE at Firth Sterling Avenue SE and at Martin Luther King, Jr. Avenue SE. This queuing is consistent with the heavy commuter flows along Suitland Parkway and South Capitol Street and the heavy traffic demand on Howard Road SE accessing the I-295 ramps.

3.11.4 Other Transportation Facilities and Services

Figure 3-14 shows the existing transit facilities (Metrorail, Metrobus, and DC Circulator) that are discussed in the following sections.

Metrorail

The FEIS documented Metrorail ridership in 2007 at the three Metrorail stations within the Project: Anacostia, Navy Yard-Ballpark, and Capitol South. Table 3-18 presents updated Metrorail data to year 2013.

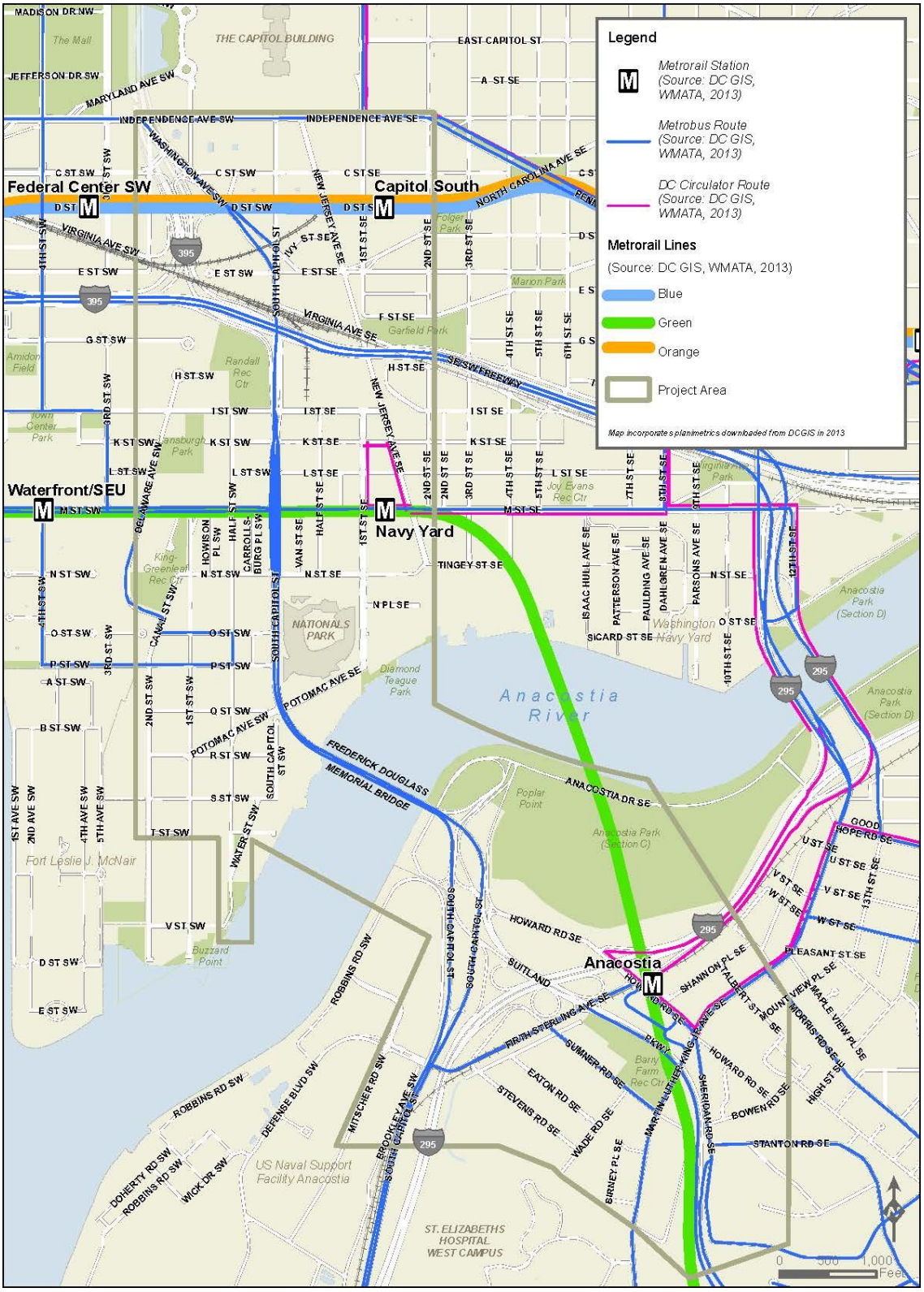
Table 3-18: Metrorail Ridership of Stations in the Project Area

Station	Entry/ Exit	Average Weekday Statistics									
		Morning Peak		Morning Off-Peak		Evening Peak		Evening Off-Peak		Average Daily	
		2007	2013	2007	2013	2007	2013	2007	2013	2007	2013
Anacostia	Entry	3,572	2,740	1,679	935	1,363	1,432	503	1,500	7,118	6,607
	Exit	1,061	1,172	1,314	593	3,513	2,653	1,434	2,333	7,323	6,751
Navy Yard	Entry	343	986	775	541	1,693	3,937	235	4,829	3,048	10,293
	Exit	1,830	3,640	487	715	387	4,283	235	2,320	2,942	10,958
Capitol South	Entry	711	902	2,045	673	4,459	5,078	1,086	2,794	8,303	9,447
	Exit	4,459	4,834	2,693	1,977	1,257	1,464	524	1,875	8,935	10,151

Source: DDOT, 2007 and WMATA, 2013

Ridership at the Anacostia Station has decreased since 2007, for all travel periods, except the evening off-peak period. Conversely, the ridership at Navy Yard-Ballpark Station has increased, for all travel periods since 2007. The growth in ridership, especially during the peak period, is most likely caused by the increase in residential, government office and business developments surrounding this station. In addition, the substantial growth in ridership during the evening off-peak period more than likely reflects proximity of the Nationals Park to the station. Nationals Park was not yet built in 2007.

Figure 3-14: Existing Transit Facilities (Metrorail, Metrobus, and DC Circulator Routes)



Metrobus

Figure 3-14 shows the existing Metrobus service routes. Numerous changes and updates were made to Metrobus routes serving the Project Area since the FEIS. These updates include:

- Route A9 (formerly South Capitol Street line) was converted into the MetroExtra (limited stop service) Martin Luther King Jr., Avenue line.
- Route A4 trips were shortened during the morning and evening peak periods to operate between Anacostia Station and Fort Drum more frequently.
- Route A5 was replaced by the new Route W5, which operates between Anacostia Station and D.C. Village via Firth Sterling Avenue and South Capitol Street.
- Route 70 (routes 70 and 71 in the FEIS) no longer serves the Project Area.
- Route 74 now serves the Project Area using some elements of routes 70 and 71.
- Routes P1, P2 and P6 were restructured with the discontinuation of the P1 and P2 lines and P6 was rerouted via M Street SE and SW instead of Virginia Avenue SE, and via Martin Luther King, Jr. Avenue SE instead of 13th Street SE in order to align with the new 11th Street Bridge.
- Route 90 (part of the 90, 92, 93 line) now serves the Anacostia Station.
- Routes B2, U2, 94, and W6-W8 were added and serves Anacostia Station.

Table 3-19 provides ridership information for the Metrobus routes serving the Project Area.

Other Transit

DDOT operates a bus circulator called DC Circulator. The FEIS documented a route running between Union Station and the Navy Yard Metrorail Station. Since the FEIS, DDOT has added a route running between the Potomac Avenue Metrorail Station and Skyland via Barracks Row route, with stops at Anacostia Station and along Martin Luther King, Jr. Avenue SE.

The FEIS documented that the Maryland Transit Administration (MTA) operated a bus service designed for Maryland commuters who work in the District with routes operating on South Capitol Street, the Frederick Douglass Memorial Bridge and Suitland Parkway. The routes serving the Project Area included the Route 903 linking the District and Charlotte Hall, Maryland.

Since the FEIS, the Omniride's Dale City-Washington Navy Yard-Bolling Air Force Base route discontinued service east of the Anacostia River to Bolling Air Force Base. The current Dale City-Washington Navy Yard route terminates at 12th and M Streets SE.

The "Nats Express" shuttle service mentioned in the FEIS was discontinued.

Table 3-19: Metrobus Service in the Project Area

Line	Route	Metrorail Stations in Project Area	Service	Service Type	FY 2012 Weekday Average Ridership
Anacostia-Congress Heights	A2, A6, A7, A8, A42, A46, A48	Anacostia, Navy Yard-Ballpark	Monday to Sunday	Full	11,440
Anacostia-Fort Drum**	A4, W5	Anacostia	Monday to Sunday	Full	2,987
Martin Luther King, Jr. Ave. Limited Line*	A9	Anacostia, Navy Yard-Ballpark Station	Monday to Friday	Morning and Evening Peak Periods only	-
Bladensburg Road-Anacostia	B2	Anacostia	Monday to Sunday	Full	7,071
Duke Ellington School of Arts	D51	—	Monday to Friday	6:53 a.m. to 7:45 a.m. only	N/A
Anacostia-Eckington***	P6	Anacostia, Navy Yard-Ballpark	Monday to Sunday	Full	2,672
Oxon Hill-Ft. Washington	P17, P18, P19	Anacostia	Monday to Friday	Morning and Evening Peak Periods only	1,330
Minnesota Avenue-Anacostia	U2	Anacostia	Monday to Saturday	6:00 a.m. to 10:00 p.m.	2,388
Fairfax Village - L'Enfant Plaza	V5	—	Monday to Friday	Morning and Evening Peak Periods only	587
Minnesota Avenue - M Street	V7, V8, V9	Navy Yard-Ballpark	Monday to Sunday	Full	4,130
United Medical Center-Anacostia	W2, W3	Anacostia	Monday to Sunday	Full	2,529
Garfield-Anacostia Loop	W6, W8	Anacostia	Monday to Sunday	Full	2,170
Bock Road	W13, W14	Anacostia	Monday to Friday	Daytime only	809
Pennsylvania Avenue	32, 36	Capitol South	Monday to Sunday	Full	13,283
Pennsylvania Avenue Limited	39	Capitol South	Monday to Friday	Morning and Evening Peak Periods only	676

Table 3-19: Metrobus Service in the Project Area (continued)

Line	Route	Metrorail Stations in Project Area	Service	Service Type	FY 2012 Weekday Average Ridership
Convention Center-Southwest Waterfront	74	—	Monday to Sunday	Full	1,393
U Street-Garfield	90, 92, 93	Anacostia	Monday to Sunday	Full	12,320
Stanton Road	94	Anacostia	Monday to Sunday	Full	1,558

Source: WMATA 2013

*Route A9 has been changed from the South Capitol Street line to MetroExtra Martin Luther King Jr., Avenue line (limited stop service) in March 2013

**Route A4 was modified and route A5 replaced by W5 in March 2013

***Routes P1, 2, and 6 were combined and renamed as Route P6 in fall of 2012

Water Transportation

The Anacostia River is a navigable waterway that is currently limited in its recreational use due to its non-fishable or swimmable designation. The river includes the Anacostia Channel (part of the Washington Harbor project), which provides 6 to 14 feet of channel depth to just upstream of the 11th Street Bridge. The USACE authorizes channel depth at approximately 24 feet. In addition, the Anacostia Basin Channel starts just north of the upstream limit of the Anacostia Channel, with a much shallower channel depth of approximately 4 to 6 feet (with an authorized depth of 8 feet). In both cases, it is assumed that the full depth of the channel is not available for river users as available records indicate that the channel has not been dredged to maintain the designated depths since 1985.

In general, the existing conditions of the water transportation activities and facilities in the Project Area and along the Anacostia River remains as described in the FEIS. In addition to the marinas and other river facilities documented in the FEIS, the Diamond Teague Park Piers provides a docking facility for water taxis and few additional boat clubs have been identified upstream including the Washington Yacht Club and the Eastern Power Boat Club.

Bridge Transits

The existing Frederick Douglass Memorial Bridge is still an operable swing bridge with a 40-foot vertical clearance in the closed position and a 149-foot horizontal clearance on either side of the center pier. As discussed below, since most of the marine traffic using the river consists of recreational vessels, the opening the Frederick Douglass Memorial Bridge is rarely required.

The *Anacostia River Navigation Evaluation Final Report* (DDOT, 2014) (Appendix A) determined the future demand for a movable bridge. The report was submitted to the USCG to support a USCG Section 9 Bridge Permit Application following FHWA's approval of a ROD.

The navigation evaluation was conducted in two phases. In Phase 1 of the evaluation, the existing marine traffic was derived from a combination of bridge opening logs provided by DDOT, and a survey of potential waterway users. Phase 2 of the evaluation consisted of a collection of video footage, which was used to monitor and document marine vessels traveling under the bridge and provided a more detailed account of the marine traffic.

Phase 1 summarized the existing marine traffic, clearances of other bridge structures on the Anacostia and Potomac Rivers, environmental and land use considerations affecting future vessel traffic, projected future vessel populations, impacts of the proposed replacement bridge on future vessel traffic and existing infrastructure, and recommended provisions to include in the design-build contract to limit impacts on marine vessels.

Phase 1 also derived the existing vessel population using a combination of bridge opening logs provided by DDOT, and a survey of potential waterway users. The survey on annual bridge transits and vessel dimensions was conducted in April 2013. Fifty-six participants including various local marinas, recreational teams, clubs, and associations, yacht clubs, and independent operators were selected to contribute. To supplement survey responses, an in-person meeting was arranged for key stakeholders, including the USN and USCG, to gather additional information.

Data from survey forms and bridge opening logs were assembled into a single database. Additional vessel characteristics required for the development of vessel impact protection requirements were calculated or estimated from the available data and similar vessels were grouped by vessel type and size. Each vessel group or class typically consists of multiple vessels with multiple owners and points of origin/destination.

Phase 2 of the evaluation consisted of the collection of video footage, which was used to monitor and document vessel transit under the Frederick Douglass Memorial Bridge. Archived, time-lapsed video recordings were captured from a live stream of the vessels travelling along the Anacostia River and under the Frederick Douglass Memorial Bridge for approximately three months from July 7, 2013 until October 6, 2013. The resulting marine traffic overwhelmingly consists of recreational vessels, comprising approximately 90 percent of the transits under the bridge documented during the Phase 2 data collection period.

Approximately 5,238 vessels were observed transiting the bridge during this data collection period. No openings of the bridge were observed during review of the three months of archived video footage. However, bridge opening logs for the past 12 years indicate some openings.

Table 3-20 shows the resulting vessel population by vessel group presented in the *Anacostia River Navigation Evaluation Final Report* (DDOT, 2014). The "Average Annual Trips" column represents the number of recorded transits divided by the time period of the source data set (one year for the survey, three months for the video monitoring, and 11 years for the bridge logs). The "Max Air Gap" column indicates the largest required air gap for vessels within the vessel group. Generally, there are vessels within each group requiring smaller clearances than the maximum vessel for the group. Therefore, not all vessels with a Max Air Gap greater than the existing closed bridge clearance necessarily required an opening.

Table 3-20: Existing Vessel Population Transiting the Frederick Douglass Memorial Bridge

ID	Vessel Type	Max Air Gap (in feet)	Average Annual Trips
1	U.S. Coast Guard Buoy Tender	70	2
2	U.S. Coast Guard Patrol Craft	60	1
3.a	Tug Boat	>40	0.8
3.b	Tug Boat	<40	734
4	Naval Vessel	140	0.2
5	Fire/Police Boats	26	548
6	Small Recreational (Power Boats)	22	10,692
7	Passenger Vessel (Non-Sail)	18	694
8.a	Recreational Sail	>40	0.2
8.b	Recreational Sail	28	201
9	Tall Ships/Large Sail	107	0.4
10	Barge	<40	167
11	Human-Powered Craft	<5	7,745

Source: *Anacostia River Navigation Evaluation Final Report*. DDOT, 2014

DS Barry

Three of the marine trips that required openings are attributable to USCG patrol craft and the buoy tender *James Rankin*, none of which have been recorded traveling under the bridge since 2005.

The USN moored the United States Ship (USS) Barry (Figure 3-15), a Forrest Sherman class destroyer commissioned in 1956, at the Washington Navy Yard since 1983 at a location approximately one-half mile upstream from the existing Frederick Douglass Memorial Bridge. When active militarily, the USS Barry participated in training missions, goodwill tours, and the Cuban Missile Crisis, and is considered to be potentially eligible for the NRHP. Officially decommissioned in 1982, the Barry is now a display ship (DS) and carries the designation of DS Barry. DS Barry served as a museum open for public visitation. However, the ship is currently closed to the public indefinitely. The condition of the vessel (described below) may not be the reason the vessel was closed for public visitation. The ship would require the assistance of tug boats if moved from its current location.

Figure 3-15: DS Barry Berthed at Washington Navy Yard

According to a report prepared for the USN, *Display Ship Barry Removal Options (Donjon Report)* (Donjon Marine Company Inc., 2014), the DS Barry currently does not have a programmatic plan or resources for its continued maintenance, overhaul or repair (Donjon Marine Company, Inc., January 31, 2014). Since 1983, or upon its arrival to the Washington Navy Yard, the USN has not assigned a responsible party for the disposition of the DS Barry. Although the Naval District Washington is the "custodian" of the ship, there is no clear understanding of who would be responsible for the ship's ultimate disposition. The *Donjon Report* was prepared to examine the impacts of the construction of a fixed bridge with 42-foot clearance on the disposition of the DS Barry. The study was primarily a risk assessment of various alternatives for the ultimate disposition of the vessel and did not consider the value or benefits of maintaining the DS Barry as a museum.

The *Donjon Report* noted that the exterior hull plate of the DS Barry has extensive corrosion, but the extent is not known because the last testing was done in 2002. However, a cursory inspection of the hull interior revealed that it is relatively sound. In 2000, fuel from the vessel leaked into the river through a corroded section of hull plate. Hull thickness of about 40 percent was found at some locations when testing done at that time. Since then, the USN has reduced the rate of hull corrosion through a cathode protection system, general cleaning and minor repairs.

In addition to the deteriorating condition of the hull, hazardous materials issues associated with the vessel were documented, including PCB (polychlorinated biphenyl) found in the river sediment below where the vessel is moored, and the vessel still contains PCB, asbestos and lead paint. The *Donjon Report* noted that an ongoing study of the Washington Navy Yard with regards to PCB and other heavy metal contamination may require that the DS Barry not remain at her current berth. The *Donjon Report* also noted if the DS Barry remains a display or museum ship, a concerted effort to remove the hazardous materials onboard, especially asbestos, would need to be undertaken.

The *Donjon Report* noted that the DS Barry, whether maintained as a display ship/museum or scrapped, would probably have to be moved from its current location. With no substantial maintenance budget or plan for repairs, the DS Barry would eventually flood as the shell plating fails and the ship becomes structurally unsound as corrosion advances. If the USN chooses to keep the vessel as a display ship for public visitation, the vessel would need extensive repairs, which would be done at a dry dock. However, the *Donjon Report* noted repairs could be conducted in place through the use of coffer dams to create a dry work area. If repaired off-site, the vessel does not necessarily have to return to the Navy Yard. If the USN chooses to scrap the vessel (and reuse its materials), or alternatively sink it to create an artificial reef, the vessel would have to be moved from its current location to a location where scrapping is allowed or to an offshore location for sinking.

chapter 4.0
environmental consequences

This chapter presents the environmental consequences of the Revised Preferred Alternative. A summary of the environmental impacts resulting from that alternative follows. Design changes to the Preferred Alternative identified in the FEIS led to the Revised Preferred Alternative, which resulted in the identification of new or additional environmental consequences. This chapter provides information on those impacts and mitigation measures required as a result of the design changes; however, all required mitigation measures, inclusive of those still relevant that are contained in the FEIS, are presented in Table 4-20.

4.1 Summary of Impacts

Table 4-1 summarizes the environmental impacts for the Revised Preferred Alternative. It also summarizes the environmental impacts of the FEIS Preferred Alternative to allow comparison.

For the Revised Preferred Alternative, the Project impact area includes, but is not limited to, the physical area that the selected designer/contractor will have the option to use to construct the Project, as well as other required activities such as parcel access or staging if it is not specifically prohibited (e.g., such as for non-permitted wetland impacts). In this document, this physical area (i.e., is referred to as the Limits of Disturbance (LOD) . However, some Project impacts extend beyond the LOD, such as visual and noise impacts.

Many impacts resulting from the Revised Preferred Alternative are identical or similar to impacts documented in the FEIS. As part of the Revised Preferred Alternative, a conceptual design was developed for the proposed new Frederick Douglass Memorial Bridge to aid in determining impact analysis for certain impact areas, such as the visual assessment.

Table 4-1: Environmental Impacts of the FEIS Preferred Alternative and Revised Preferred Alternative

Environmental Topic/Measure	Impact Summary	
	FEIS Preferred Alternative	Revised Preferred Alternative
Land Use		
Acres of Additional Right-of-Way Needed	12.4	3.1
Business Displacements	5	2
Residential Displacements	0	0
Community Cohesion and Facilities		
Social Conditions	Beneficial to overall social activities and connections	Beneficial to overall social activities and connections
Physical Conditions	Minor changes, except for the need to acquire land from the JBAB	Fewer changes because right-of-way not required from the JBAB
Visual Environment	Beneficial to visual environment	More beneficial visual effects because right-of-way from the JBAB is not needed
Economic Conditions	Supports ongoing economic development activities	Supports ongoing economic development activities
Public Services and Facilities	No adverse impact to emergency response services, and improves access to public facilities; District commercial drivers training lot reduced in size and may be used for construction staging	No adverse impact to emergency response services, and improves access to public facilities
Safety	Project components designed to improve traffic safety and the safety of pedestrians and cyclists	Project components designed to improve traffic safety and the safety of pedestrians and cyclists
Environmental Justice		
Disproportionately High and Adverse Impacts to Minority or Low-Income Populations	No	No
Public Involvement Conducted to Reach and Solicit Input from Minority or Low-Income Populations	Yes	Yes

Table 4-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

Environmental Topic/Measure	Impact Summary	
	FEIS Preferred Alternative	Revised Preferred Alternative
Economy and Employment		
Long-Term Economic Conditions	Positive economic influence to nearby residential, office and institutional developments	Positive economic influence to nearby residential, office and institutional developments
Air Quality		
Conformity with State Implementation Plan	Yes	Yes
Impact to Regional Pollutant Burdens	Slight increase, but immeasurable on a regional scale	Slight increase, but immeasurable on a regional scale
Greenhouse Gas Levels	No measurable change to greenhouse gas levels	No measurable change to greenhouse gas levels
Air Quality Concern for Particulate Matter	None; no requirement for hot-spot analysis	None; no requirement for hot-spot analysis
Number of Intersections Predicted to Exceed the National Ambient Air Quality Standards (NAAQS) for Carbon Monoxide	0	0
Noise		
Number of Noise Sensitive Receptors Predicted to Approach or Exceed FHWA Noise Abatement Criteria	12 of 14 sites analyzed	6 of 12 sites analyzed (not directly comparable to FEIS results See Section 4.4)
Number of Noise Barriers Recommended for Further Study	0	0
Water Quality		
Foundation Area in Contact with the Riverbed	11,884 sq ft	20,368 sq ft
Acres of Impervious Surfaces	Existing is 76.0 acres and proposed is 74.5 acres	Existing is 67.3 acres and proposed is 68.0 acres. (Existing differs from FEIS due to different project limits and area of calculation)
Quality of Surface and Groundwater Resources	Improved due to the provision of better stormwater management systems.	Improved due to the provision of better stormwater management systems.
Wetlands		
Total Acres of Permanent Wetland Impacts	0	0.04 (isolated wetlands)

Table 4-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

Environmental Topic/Measure	Impact Summary	
	FEIS Preferred Alternative	Revised Preferred Alternative
Wildlife and Habitats		
Acreage Impacts to Wooded Areas	0.1-acre (between Howard Road and Suitland Parkway)	2.1 acres (along the south and west side of Anacostia Park)
Number of Specimen Trees Displaced	3 trees (along South Capitol Street)	42 trees (potential displacements based on new limits of disturbance for this alternative)
Section 7 Determination	"Not likely to adversely affect" determination for the shortnose sturgeon	"Not likely to adversely affect" determination by FHWA for the Atlantic and the shortnose sturgeons. However, National Marine Fisheries Service (NMFS) has concluded that no federally listed or proposed threatened or endangered species under their jurisdiction exist In the vicinity of the proposed Project.
Floodplains		
Total Number of Bridge Piers	4	6
Number of Bridge Piers in the Water	3	4
Number of Bridge Piers in the Floodplain	1	2
Predicted Effect of New Bridge on Flood Levels on the Anacostia River Compared with Existing Bridge During Storm Event	Little to no variation (at most a 0.02-foot increase for selected storm events) in flood water levels	No increase in water surface elevation and a maximum decrease of 0.02 feet for the 100-year water surface elevations upstream of the proposed bridge crossing
Geology, Topography and Soils		
Notable Changes to Site Topography	Northern edge of east traffic circle would be 15 feet higher than existing ground level; southern edge of traffic oval at western approach to the new bridge would be 22 feet higher than existing ground level	East traffic oval has grades with slightly higher elevations to enhance gateway views from the perspective of motorists. Revised Suitland Parkway/Martin Luther King, Jr. Avenue SE interchange better maintains existing topography of the parkway
Erosion Potential	Minimal	Minimal

Table 4-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

Environmental Topic/Measure	Impact Summary	
	FEIS Preferred Alternative	Revised Preferred Alternative
Cultural Resources		
Number of Adverse Effect Determinations in Accordance with Section 106 of the National Historic Preservation Act (NHPA) (Historic Architectural Resources)	2 (the L'Enfant Plan and Suitland Parkway)	1 (the L'Enfant Plan)
Number of Adverse Effect determinations in accordance with NHPA Section 106 (Archaeological Resources)	0	0
Hazardous Materials		
Number of Hazardous Materials Sites of Potential Concern near the Construction Area	19	10
Visual Quality		
Landscape Unit #1, Subarea 1: South Capitol Street Bridge to M Street	A Visual Quality Difference (VQD) of 5 from existing conditions	A Visual Quality Difference (VQD) of 5 from existing conditions
Landscape Unit #1, Subarea 2: South Capitol Street, M Street	5 VQD from existing conditions	5 VQD from existing conditions
Landscape Unit #1, Subarea 3: South Capitol Street, North of M Street	4.3 VQD from existing conditions	4.7 VQD from existing conditions
Landscape Unit #2: Frederick Douglass Memorial Bridge	6.17 VQD from existing conditions	Same as FEIS Preferred Alternative
Landscape Unit #3, South Capitol Street SE	5.7 VQD from existing conditions	6.3 VQD from existing conditions
Landscape Unit #4, Suitland Parkway	3.3 VQD from existing conditions	4.0 VQD from existing conditions
Landscape Unit #5, Howard Road SE	No VQD from existing conditions	No VQD from existing conditions
Landscape Unit #6, Martin Luther King, Jr. Avenue SE	Minus 0.7 VQD from existing conditions	No VQD from existing conditions
Landscape Unit #7, Anacostia Park	3.7 VQD from existing conditions	3.7 VQD from existing conditions
Landscape Unit #8, New Jersey Avenue SE	0.3 VQD from existing conditions	0.3 VQD from existing conditions
Pedestrian and Bicycle Facilities		
Pedestrian and Bicycle Facilities	New bridge and streetscape features would improve pedestrian and bicycle facilities, enhancing connectivity for these transportation modes	New bridge and streetscape features would improve pedestrian and bicycle facilities, enhancing connectivity for these transportation modes. Improved connection to Suitland Parkway from Frederick Douglass Memorial Bridge

Table 4-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

Environmental Topic/Measure	Impact Summary	
	FEIS Preferred Alternative	Revised Preferred Alternative
Traffic and Transportation		
Predicted Percent Increase (or Decrease) in Traffic Volumes on South Capitol Street at the Anacostia River compared with the No Build Alternative	13 percent	13 percent
Number of Intersections Predicted to Operate at Level-of-Service (LOS) E or F During the Morning Peak Hour in 2040	5 (based on updated analysis)	3
Number of Intersections Predicted to Operate at Level-of-Service (LOS) E or F During the Evening Peak Hour in 2040	10 (based on updated analysis)	7
Other Transportation Facilities and Services		
Public Transit Service (Metrorail, Metrobus, DC Circulator, Commuter Bus)	None	None
Parking Conditions	None	None
Other Types of Transportation (Water, Helicopter, Freight and Passenger Rail)	None, except that helicopter flight operations would need to be altered at the heliport adjacent to South Capitol Street	Flight operations at the heliport would not be altered.
Energy		
Predicted Direct Energy Consumption Increase (or Decrease) in 2040 Compared with the No Build Alternative	0.5% decrease	0.5% decrease
Cumulative Impacts		
Land Use	Beneficial	Beneficial
Socioeconomic Conditions	Low level of adverse effects	Low level of adverse effects
Park and Recreational Resources	Beneficial	Beneficial
Air Quality	Beneficial	Beneficial
Noise Conditions	No Effect	No Effect
Water Resources	Beneficial	Beneficial
Wildlife and Habitats	No Effect	No Effect
Cultural Resources	No Effect	No Effect
Visual Characteristics	No Effect	No Effect
Transportation and Infrastructure	Beneficial	Beneficial
Indirect Impacts		
Development Inducing Potential of the Project	Supports development, but not the crucial factor	Supports development, but not the crucial factor

Table 4-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

	Impact Summary	
Environmental Topic/Measure	FEIS Preferred Alternative	Revised Preferred Alternative
Construction Impacts		
Community Cohesion and Facilities	Temporary change in access to certain community facilities; temporary utility disruptions may be required	Temporary change in access to certain community facilities; temporary utility disruptions may be required
Economy and Employment	New construction jobs created; purchase of equipment, supplies and materials from local and regional sources	New construction jobs created; purchase of equipment, supplies and materials from local and regional sources
Air Quality	Short-term fugitive dust and mobile source emissions	Short-term fugitive dust and mobile source emissions
Noise and Vibration Conditions	Construction activities, equipment and vehicles emitting noise ranging from high 70s to up to 100 decibels (dB) and causing vibration	Construction activities, equipment and vehicles emitting noise ranging from high 70s to up to 100 decibels (dB) and causing vibration
Water Quality	Construction of bridge has the potential to affect water quality	Construction of bridge has the potential to affect water quality
Wildlife and Habitats	Some vegetation cleared to support construction	Some vegetation cleared to support construction
Geography, Topography and Soils	Disturbance of soil could cause erosion and sedimentation	Disturbance of soil could cause erosion and sedimentation
Cultural Resources	Proximity of construction activities could temporarily diminish the integrity of certain historic properties	Proximity of construction activities could temporarily diminish the integrity of certain historic properties
Hazardous Materials	Health and safety of construction workers could be affected through exposure to hazardous materials sites	Health and safety of construction workers could be affected through exposure to hazardous materials sites
Pedestrian and Bicycle Facilities	Mobility for pedestrians and cyclists would be maintained though detours may be required	Mobility for pedestrians and cyclists would be maintained though detours may be required
Traffic and Transportation	Traffic circulation and mobility would be maintained although street closures and detours may be required; access to Metrorail stations maintained at all times, but rerouting of bus routes and moving of bus stops may be required; marine traffic on the river would be maintained except for short term closures from certain construction activities	Traffic circulation and mobility would be maintained although street closures and detours may be required; access to Metrorail stations maintained at all times, but rerouting of bus routes and moving of bus stops may be required; marine traffic on the river would be maintained except for short term closures from certain construction activities

Table 4-1: Environmental Impacts of the FEIS Preferred Alternative and the Revised Preferred Alternative (continued)

	Impact Summary	
Environmental Topic/Measure	FEIS Preferred Alternative	Revised Preferred Alternative
Section 4(f)		
Number of Section 4(f) Uses	2 (the L'Enfant Plan of the City of Washington, DC and Suitland Parkway)	3 (the L'Enfant Plan of the City of Washington, DC, Anacostia Park and Suitland Parkway, but the latter two would be *de minimis* impacts

4.1.1 *Minor Changes or No Substantive Changes in Impacts* from FEIS

The Revised Preferred Alternative does not require changing the impacts as documented in the FEIS for the following environmental resources; therefore, this chapter does not present a detailed analysis of impacts under these resources.

Land Use

Impact

- The Revised Preferred Alternative will require acquisition of property at the east base of the new Frederick Douglass Memorial Bridge (see Section 4.1 of the FEIS). The action to acquire this and other needed properties for the Project underwent NEPA review through a categorical exclusion for the protective buying of real estate, which was signed in February 2007. Obtaining the property at the west base of the new bridge is required before DDOT can obtain a U.S. Coast Guard permit to construct the bridge.
- The Revised Preferred Alternative would require 3.1 acres of additional right-of-way. The Revised Preferred Alternative would displace two businesses, one billboard sign, and relocate personal property that belongs to the District (i.e., salt dome). In comparison, the FEIS Preferred Alternative would require 12.4 acres of additional right-of-way, the displacement of two businesses, and relocation of two personal properties due to the west traffic oval for the new bridge. The reduction in the number of acres with the Revised Preferred Alternative is because 7.0 acres of right-of-way from JBAB and 2.2 acres from three other parcels will not be required.

Mitigation

- No new mitigation measures are required to address this impact. The mitigation for the Revised Proposed Alternative is the same as proposed in the FEIS, adherence to the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 United States Code (USC) 61)*, as amended. These measures can be reviewed in Table 4-20.

Community Cohesion and Facilities

Impact

- The FEIS Preferred Alternative would benefit social activities and connections and economic developments occurring in and around the Project Area (see Section 4.2 of the FEIS). The

physical changes proposed in the corridor would enhance the overall visual environment. In addition, once completed, the FEIS Preferred Alternative would have no impact on the level of emergency response by police, ambulance and fire services, and would improve overall traffic safety, in particular for pedestrians and cyclists.

- The Revised Preferred Alternative would have a larger positive influence on community cohesion since it requires less land from public property. Like the FEIS Preferred Alternative, the Revised Preferred Alternative would benefit social interactions and economic development by improving local connectivity, and would have no effect on emergency response services. The Commercial Driving Training Lot was identified as a potential staging area for construction of the FEIS Preferred Alternative. The lot may be used, if desired by the designer/contractors, as a construction staging area. However, individual staging locations will be determined as part of the design-build process consistent with permits and approvals.
- The Revised Preferred Alternative will require construction within the Poplar Point area of Anacostia Park, which is operated by the NPS, because construction of the east traffic oval will necessitate the closure of the existing park access. The new access will result in a net loss of road pavement because ramps from Anacostia Drive to South Capitol Street will no longer be needed and will be removed by the Project. Within the park, green space will increase by approximately 0.5 acres, and additional green space will be created within the adjacent DDOT right-of-way from the removal of the ramps. Additional information about construction of the new access driveway and its impacts to Anacostia Park is provided in Chapter 5, Section 4(f) Evaluation.
- Other studies that evaluated potential effects to NPS properties and interests include the following:
  - NPS claims jurisdiction of the riverbed of the Anacostia River, and requies that a Speical Use Permit be obtained prior to construction of the new bridge. The bridge's pile caps may affect approximately 20,400 square feet of riverbed, and based on the conceptual design solution using drilled shaft piles of about 8 to 9 feet in diameter, the pile tip elevations for the in-water piers are likely to be of the order of minus100 feet, which would translate to be approximately 80 feet below the riverbed level. See Section 4.5 for further information.
  - A 2005 wetland delineation within Anacostia Park identified six wetlands in the park. Updated wetlands delineations were conducted, including a reassessment of the wetlands along the west side of Anacostia Park. These wetlands did not require additional delineation because they were found to be the same as when originally delineated in 2005, and therefore, will not be affected by the Revised Preferred Alternative. See Section 3.5 for further information.
  - In accordance with Section 106, Anacostia Park was identified as an historic property. Both the Revised Preferred Alternative and FEIS Preferred Alternative were evaluated to have a "no adverse effect" on the park as an historic property. See Sections 3.8 and 4.8 for further information.

- Visual effects of the new Frederick Douglas Memorial Bridge from the perspective of Anacostia Park, as Landscape Unit #7, were re-evaluated. The visual quality difference (3.7) in comparison to existing conditions for this unit did not change with the development of the Revised Preferred Alternative. See Section 4.9 for further information.
- The shared-use paths constructed as part of the new driveway between the east traffic oval and Anacostia Drive and other Project pedestrian and bicycle elements will improve pedestrian and cycling access into Anacostia Park in comparison to existing conditions. For example, because the shared-use paths will be aligned along the new driveway connecting with Anacostia Drive, it will be constructed to integrate with the Anacostia Riverwalk Trail located along Anacostia Drive. See Section 4.10 and Chapter 5, Section 4(f) Evaluation, for further information.
- In accordance with Section 4(f), the Revised Preferred Alternative will require the "use" of Anacostia Park. However, this use will likely be a de minimis impact. See Chapter 5, Section 4(f) Evaluation, for further information.
- The Revised Preferred Alternative proposes to make modifications to Suitland Parkway, which includes converting the existing Martin Luther King, Jr. Avenue SE overpass to an interchange with the parkway and ramp modifications at the Suitland Parkway / I-295 interchange. The affected sections of Suitland Parkway are not under the jurisdiction of NPS.

Mitigation

- To restore the loss of access to Anacostia Park, the Revised Preferred Alternative will provide a new access driveway into the park between the northeast leg of the east oval and Anacostia Drive. In addition, shared-use paths on both sides of the driveway will be provided. The Revised Preferred Alternative will include other commitments to improve public access into Anacostia Park from the east oval, such as signage. See Section 4.14 and Chapter 5, Section 4(f) Evaluation, for further information.

Economy and Employment

Impact

- The FEIS Preferred Alternative would have a positive influence on the expected future growth in residential, office, and institutional developments (see Section 4.4 of the FEIS). This is due to improved regional and local connectivity. The Revised Preferred Alternative would maintain the same level of improved regional and local connectivity. Therefore, it would have a positive influence on the economic conditions in and around the Project Area.

Mitigation

- No mitigation measures are required.

Air Quality

Impact

- Transportation infrastructure will change over the next several years because of the improvements made to South Capitol Street, the Frederick Douglass Memorial Bridge, I-295, Suitland Parkway, and other roadways. However, the air quality analysis presented in the FEIS concluded that the FEIS Preferred Alternative was included in the TIP and CLRP and, as such, would conform to the *State Implementation Plan (SIP) to Improve Air Quality in the Washington, DC-MD-VA Region* (MWCOG, 2007) (see Section 4.5 of the FEIS). The Project is currently included in the FY 2013-2018 TIP which was approved by the TPB on July 18, 2012 and the USDOT on May 30, 2013. The project is also included in the 2013 CLRP, which was approved by the TPB on July 17, 2013 and the USDOT on January 22, 2014. As such, the Project comes from a conforming transportation plan and TIP that still conforms to the SIP's purpose.
- The Project would not noticeably contribute to regional pollutant levels. At the microscale (i.e., intersection) level, no analyzed intersection was predicted to have carbon monoxide (CO) levels exceeding the *National Ambient Air Quality Standards (NAAQS)* (42 USC 2000d et seq.) under the FEIS Preferred Alternative. The Project is still also not considered a project of air quality concern with regards to $PM_{2.5,}$ because it will not cause a notable increase in the number of diesel vehicles.
- The air quality analysis was prepared (Appendix C) using the U.S. Environmental Protection Agency's (USEPA) latest emission factor program, MOVES2010b for transportation projects. The results for both the regional and microscale analyses for the Revised Preferred Alternative are similar to the results documented in the FEIS. The Revised Preferred Alternative will conform to the SIP, and will not cause any intersection to exceed the NAAQS for CO.

Mitigation

- No mitigation measures are required.

Floodplains

Impact

- The FEIS Preferred Alternative bridge design included one pier support within the floodplain on the east side of the Anacostia River. The FEIS included the results of a hydrology study, entitled *South Capitol Street Project Hydrology/Hydraulics Technical Report* (DDOT, 2007) to determine the effect of a new Frederick Douglass Memorial Bridge on flood levels upstream from the bridge during various categories of storm events (10-, 50-, 100- and 500-year). The study concluded that a new bridge would cause very little variation (at most a 0.02 foot increase) at various cross sections upstream from the existing bridge. Tidal fluctuations and backwater influence predominately control the hydraulic capacity of the Anacostia River.
- The Revised Preferred Alternative bridge design would include two pier supports in the floodplain, one on either side of the Anacostia River. An updated hydrology study (DDOT, 2013) was conducted for the new bridge alignment of the Revised Preferred Alternative.

The same categories of storm events were analyzed. A comparison of the water surface elevations of the existing and Revised Preferred Alternative conditions revealed either no increase in upstream water surface elevation or a maximum increase in elevation of 0.02 feet for the 100-year storm event upstream. These results are similar to those predicted for the FEIS Preferred Alternative (see Section 4.10 of the FEIS). In addition, the piers are expected to be aligned with the flow of the Anacostia River to allow for maximum conveyance, minimizing the potential for scour. Based on the results of the updated hydrology study, the conclusions documented in the FEIS regarding upstream flood levels remain valid for the Revised Preferred Alternative. This conclusion takes into account the new Frederick Douglass Memorial Bridge and the addition of one pier support within the floodplain. The *Supplemental Natural Resources Technical Report* (DDOT, 2014) (Appendix E) contains more detailed discussion on floodplains in the Project Area.

While it is unlikely that the Revised Preferred Alternative will affect floodplain elevations along the Anacostia River, the Project will be subject to the requirements of floodplain regulations and provisions contained in 20 District Municipal Regulations (DCMR), Chapter 31 – Flood Hazard Rules and 12 DCMR – DC Construction Codes Supplement of 2008 or the latest amendment, respectively.

Mitigation

- No mitigation measures are required.

Hazardous Materials

Impact

- To support the preparation of the Supplemental DEIS/Supplemental FEIS, a Phase 1 environmental site assessment (ESA) (see Appendix H) was prepared for the purpose of updating the FEIS information regarding potential hazardous materials sites (see Section 4.13 of the FEIS). Even with the updated information for hazardous materials sites (see Section 3.9), the evaluation of potential impacts and the provision of mitigation measures to address these impacts, as documented in the FEIS, remain valid for the Revised Preferred Alternative. The FEIS identified 10 hazardous materials sites or properties of concern (POC) that may cause contamination of soils and groundwater, and may affect construction. A more comprehensive evaluation of the studies prepared for the FEIS and the updated ESAs resulted in the identification of 14 additional POCs than in the FEIS.

Mitigation

- Such media would require proper handling in accordance with District and federal regulations because they could pose health and safety risks to construction workers and even the general public.

Traffic and Transportation – Traffic Safety

Impact

- Although the Revised Preferred Alternative will provide an east traffic oval instead of a traffic circle, the Project will result in higher traffic volumes in potentially conflicting

movements than under the No Build Alternative. The Revised Preferred Alternative will provide lower speeds and regular spacing of traffic signals which, as noted in the FEIS, should improve overall traffic safety. Specifically, at the I-295/Suitland Parkway Interchange, the Revised Preferred Alternative will improve traffic safety when compared to the FEIS Preferred Alternative by having Ramp B (southbound I-295 to westbound Suitland Parkway) comply with current design standards for an interstate ramp, and lengthening the acceleration and deceleration lanes. Appendix I provides more detailed information about traffic safety impacts.

- As described in the FEIS, some elements of the FEIS Preferred Alternative would help decrease the number of vehicle crashes by reducing conflicting vehicle movements (see Section 4.16 of the FEIS). However, the FEIS Preferred Alternative would also increase the number of at-grade intersections, including the intersections at the west traffic oval and east traffic circle, which would result in higher traffic volumes in potentially conflicting movements than under the No Build Alternative. The FEIS noted that the effects to traffic safety may be offset, to some extent, by the lower speeds and more regular spacing of traffic signals through the corridor under the FEIS Preferred Alternative.

Mitigation

- No mitigation measures are required.

Energy

Impact

- According to the updated traffic analysis, the Revised Preferred Alternative will reduce regional daily VMT by 0.33 percent in 2040, which would result in a decrease in direct energy consumption compared with the No Build Alternative. The FEIS documented that the Project would result in a 0.5 percent decrease in direct energy consumption in 2030, compared with the No Build Alternative (see Section 4.18 of the FEIS). This assessment was primarily based on overall vehicle miles traveled (VMT) and fuel consumption. Although the Revised Preferred Alternative used a different design year, both sets of projections predicted a reduction in VMT over the No Build Alternative. Therefore, the anticipated energy savings documented in the FEIS remain valid for the Revised Preferred Alternative.

Mitigation

- No mitigation measures are required.

Cumulative Impacts

Impact

- The Revised Preferred Alternative would have either beneficial or no changes in the areas of land use, parks, air quality, noise, water resources, wildlife and habitats, cultural resources, visual characteristics, and transportation (see Section 4. 19 of the FEIS). This conclusion remains the same as for the FEIS Preferred Alternative.

Mitigation

- No mitigation measures are required.

Indirect Impacts

Impact

- The FEIS disclosed that that the FEIS Preferred Alternative would have no indirect impacts (see Section 4.20). Although the FEIS Preferred Alternative would improve access and support development, market forces were found to be the primary influences on private development. This conclusion remains valid for the Revised Preferred Alternative.

Mitigation

- No mitigation measures are required.

The Relationship between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

Impact

- The FEIS documented that the fulfillment of a transportation improvement identified through comprehensive planning is consistent with the short-term impacts and uses of resources needed by the Project (see Section 4.21 of the FEIS). This conclusion remains valid for the Revised Preferred Alternative.

Mitigation

- No mitigation measures are required.

Permits and Consultations

- The FEIS listed the permits and compliance requirements for the FEIS Preferred Alternative (see Section 4.22 of the FEIS). Some compliance requirements, such as the Section 106 consultation, were updated for the Revised Preferred Alternative. Other compliance requirements and permits will be relevant during final design and construction. The list of permits and compliance requirements remain valid for the Revised Preferred Alternative, with the exception of NPS authorizations. The NPS claims jurisdiction of the Anacostia riverbed, and requires that a Special Use Permit be obtained prior to the construction of the new bridge. An NPS Special Use Permit would also be obtained for the construction within Anacostia Park (see Community Cohesion and Facilities above). The NPS Special Use Permit for construction on the riverbed, as well approvals in accordance with Sections 401 and 404 of the Clean Water Act, will be obtained prior to the USCG Bridge Permit. The NPS permit will not be issued until after the NPS issues its own ROD pursuant to its NEPA obligations.

Construction Impacts

Impact

- The FEIS documented the following construction impacts for the FEIS Preferred Alternative:
  - Access impacts to selected community facilities

- Creation of new jobs that require the purchase of materials and supplies, which would benefit the local economy
- High noise levels associated with construction activities, equipment and vehicles
- Fugitive dust emissions
- Potential water quality effects associated with construction of the bridge
- Soil disturbances causing potential erosion and sedimentation
- Detours (although mobility would be maintained for pedestrians, cyclists and motorists around the construction area)

This list of construction impacts remain the same for the Revised Preferred Alternative. Section 4.13 discusses these potential construction impacts in more detail.

Mitigation

- No new mitigation measures are required to address this impact. The mitigation for the Revised Proposed Alternative is the same as proposed in the FEIS. These measures can be reviewed in Table 4-20.

Irreversible and Irretrievable Commitment of Resources

Impact

- The Revised Preferred Alternative would consume natural, physical, human and fiscal resources during construction but the benefits of the Project (enhanced safety, mobility, accessibility, and economic development) would outweigh the commitment of these resources. This conclusion remains the same as for the FEIS Preferred Alternative (see Section 4.25 of the FEIS).

Mitigation

- No new mitigation measures are required.

4.1.2 Substantive Changes in Impacts from the FEIS

Several notable features distinguish the Revised Preferred Alternative from the FEIS Preferred Alternative including:

- Different alignment for the new bridge
- Reduced size of west traffic oval
- Traffic oval instead of a traffic circle on the eastern approach to the new bridge
- Different access into the Poplar Point section of Anacostia Park
- Reconstructing a portion of I-295 over Firth Sterling Avenue SE and an inactive railroad line
- Urban diamond interchange at the Suitland Parkway/Martin Luther King, Jr. Avenue SE overpass
- Additional interchange modifications at South Capitol Street and I-695
- Revised Project Area

Compared with the FEIS Preferred Alternative, the Revised Preferred Alternative would have the following change in impacts to the following environmental resources. The new impacts are discussed later in this chapter.

Environmental Justice

- The Revised Preferred Alternative will not cause disproportionately high and adverse human health or environmental effects on EJ populations. This is because the limited number of potential impacts due to operation of the proposed design changes included in the Revised Preferred Alternative will not result in direct impacts for most of the technical discipline areas reviewed as part of the Supplemental FEIS. The effects are not disproportionately high when comparing the adverse impacts to EJ populations and non-EJ populations.
- The Project will result in potential adverse noise impacts at 59 noise receptor locations in EJ areas (Appendix L). Based on the DDOT Noise Policy, noise barriers are not reasonable and feasible at these receptors. The Project is not expected to result in substantial noise impacts overall and would not result in disproportionate impacts to minority or low-income communities.
- The FEIS concluded that the FEIS Preferred Alternative would not result in disproportionately high and adverse human health or environmental effects on minority or low-income populations (EJ populations) residing in and around the Project Area (see Section 4.3 of the FEIS). This analysis was in accordance with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (1994).
- The FEIS documented efforts to solicit input from the EJ communities in and around the Project Area. This outreach, presented in Section 4.2, was re-initiated upon development of the Revised Preferred Alternative.

Wetlands

- The FEIS Preferred Alternative did not require the filling or dredging of wetlands (see Section 4.8 of the FEIS)
- The wetlands within the Project Area are located within the Poplar Point portion of Anacostia Park. These wetlands were reassessed to determine if any element of the Revised Preferred Alternative would encroach into wetlands (Appendix E). Based on this re-delineation, which the USACE has confirmed through an official Jurisdictional Determination (JD), these wetlands will not be directly affected (filled or dredged) by the Revised Preferred Alternative.
- The Revised Preferred Alternative will affect a 0.04-acre palustrine forested (PFO) wetland due to the proposed replacement of the I-295 bridge over Firth Sterling Avenue and the adjacent CSX inactive railroad right-of-way. The USACE determined this wetland is isolated and would not be subject to USACE jurisdiction. The replacement could result in at least a partial filling of this wetland. Efforts to avoid and minimize impacts to the PFO wetland will be explored during the design of the new I-295 bridge over Firth Sterling Avenue and the

CSX right-of-way. If part of this wetland were to be filled, this work would be addressed under DDOE permitting. If so, a final wetland impact assessment will be conducted during final design, and a mitigation plan will be prepared in coordination with the DDOE.

- The two palustrine emergent (PEM) wetlands located between Suitland Parkway and Dunbar Road (see Section 3.5) would not be affected by the Project. The USACE also determined these wetlands are isolated wetlands. There is sufficient space within this area to construct the Project without affecting these wetlands. However, these wetlands may be protected by a fenced 25-foot buffer zone if required by DDOE.

Noise

- A noise analysis was conducted for the Revised Preferred Alternative to reflect revisions in the noise source locations (i.e., vehicles traveling on roadways). Also, the FHWA released the *Final Rule Amending the Federal Regulations on the Procedures for Abatement of Highway Traffic Noise and Construction Noise (2010 Final Rule)* (FHWA, 2010), which differs substantially from the previous rule in terms of land use types to be evaluated, noise analysis process, noise abatement measures, and public involvement requirements. Section 4.4 presents the results of the updated noise analysis for the Revised Preferred Alternative. The *Noise Technical Report* (DDOT, 2014) (Appendix D), provides a detailed noise analysis of the Project Area.
- The FEIS documented that most of the sensitive noise receptors identified along various locations within the Project Area would approach or exceed the FHWA Noise Abatement Criteria (NAC) with the FEIS Preferred Alternative (see Section 4.6 of the FEIS). Sensitive receptors include places where people sleep, certain types of land uses where people congregate and where high noise levels could interfere with activities. The most common sensitive receptors are residences, but can also include certain types of parks or even commercial uses, such as outdoor cafes. The FEIS noted that 12 of the 14 noise receptors analyzed would approach or exceed the NAC during the morning peak period and 11 of these 14 noise receptors would approach or exceed the NAC during the evening peak period. The noise analysis for the FEIS Preferred Alternative occurred before FHWA implemented the *2010 Final Rule*.

Water Quality

- The Revised Preferred Alternative will slightly increase the amount of impervious surfaces in the Project Area from 67.3 existing acres to 68.0 acres. Measures to treat post-construction stormwater will be similar to those suggested in the FEIS, including up-to-date BMPs (see Section 4.7 of the FEIS). These stormwater controls or BMPs will be designed to reduce non-point source pollutants into surface and ground water. Stormwater control systems for the Project are required to use Low Impact Development (LID) technologies as stipulated in the *Anacostia Waterfront Transportation Architecture Design Guidelines* (DDOT, 2008), or other measures approved by the DDOE and DDOT. Adherence to the Clean Water Act's (CWAs) Total Maximum Daily Load (TMDL) provisions will be fully coordinated through compliance with the National Pollutant Discharge Elimination System (NPDES) permit process for Project-related stormwater. Therefore, the Revised Preferred Alternative bridge design

should somewhat improve water quality of surface and groundwater resources. These impacts are similar to those estimated for the FEIS Preferred Alternative.

- The FEIS Preferred Alternative would slightly reduce the amount of impervious surfaces in the Project Area from 76.0 existing acres to 74.5 acres and the Project would include improved stormwater management systems. The updated existing impervious area differs from the FEIS due to changes in the project limits and area of calculation.
- Impacts of the Revised Preferred Alternative are similar to the FEIS Preferred Alternative regarding surface waters associated with the construction of the new Frederick Douglass Memorial Bridge and the demolition of the existing bridge (see Section 4.7 of the FEIS). Based on a preliminary bridge design for the Revised Preferred Alternative, surface water impacts to the Anacostia River would increase over those estimated for the FEIS Preferred Alternative bridge design. However, final impacts will not be fully known until the design-build phase for the Project as described in Section 2.4. The impacts based on the current conceptual design are described in Section 4.4. Additional information can be found in Appendix E, the *Supplemental Natural Resources Technical Report* (DDOT, 2014).

Wildlife and Habitats

- Due to the existing level of human disturbance and urbanized conditions of the Project Area, the FEIS Preferred Alternative had relatively minor impacts to flora and fauna (see Section 4.9 of the FEIS).
- Because of a larger area of potential impact was considered for the Revised Preferred Alternative, specimen/special tree and woodland habitat impacts would increase to 47 and 2.1 acres, respectively.
- The FEIS documented that impacts to migratory birds were expected to be negligible, with the exception of one species, the osprey (see Section 4.9 of the FEIS). Measures to avoid impacts to migratory birds, specifically ospreys during the nesting season when eggs and young are present would be taken prior to initiation of construction at the Frederick Douglass Memorial Bridge. Multiple osprey nests are now located within the Project Area and would need to be relocated prior to construction due to the Revised Preferred Alternative. Under the *Migratory Bird Treaty Act of 1918 (*16 USC 703-712), osprey nests may be removed as long as there are no eggs or young in the nest. The removal of osprey nests with eggs or young will require a permit from the U.S. Fish and Wildlife Service (USFWS). (USFWS online resource: http://www.fws.gov/chesapeakebay/FAQs.html).
- The FEIS documented consultation with the USFWS regarding potential impacts to federally-listed threatened or endangered species in accordance with *Endangered Species Act of 1973* (16 USC 1531 et seq.). FHWA rendered a “not likely to adversely affect” determination for the shortnose sturgeon. The NMFS concurred with the determination.
- The Revised Preferred Alternative required re-initiation of the Section 7 consultation. The NMFS identified the Atlantic sturgeon as an endangered species that may be affected by the Project (see Section 3.5). Section 4.6 presents the results of the updated Section 7 consultation and information about the USFWS permit to remove active osprey nests (Appendix F).

Geology, Topography and Soils

- The FEIS Preferred Alternative would pose minimal risk for erosion (see Section 4.11 of the FEIS). The FEIS documented that the FEIS Preferred Alternative generally followed the topography of the Project Area, except for the traffic oval and circle that would be located at the western and eastern approaches to the new bridge, respectively. The northern edge of the west traffic oval would be 15 feet higher than existing ground level, and the southern edge of the east traffic circle would be 22 feet higher than existing ground level.
- The Revised Preferred Alternative changed the east traffic circle to a traffic oval at a slightly different location due to the realignment of the new bridge. This change and the different interchange design at the Suitland Parkway/Martin Luther King, Jr. Avenue SE overpass resulted in different topographic impacts than what was disclosed in the FEIS. Section 4.7 describes these differences in impacts.

Cultural Resources

- The FEIS documented information regarding compliance with Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470 et seq. and 36 CFR 800) (see Section 4.12 of the FEIS). Among the fourteen historic architectural properties that are listed in or eligible for the NRHP identified within the APE, two properties (the L'Enfant Plan of the City of Washington, DC and Suitland Parkway) would be adversely affected by the FEIS Preferred Alternative. No archaeological resources on or eligible for the NRHP were identified in the LOD. FHWA rendered an "adverse effect" determination in accordance with NHPA Section 106 (16 USC 470 et seq. and 36 CFR 800), and a MOA was signed to resolve the adverse effect.

- Due to the consideration of the Revised Preferred Alternative, the Section 106 process was re-initiated because the Undertaking was revised (change from FEIS Preferred Alternative to Revised Preferred Alternative), and the APE was adjusted accordingly. The revised APE resulted in additional historic properties being considered as part of the Project's effects assessment (see Section 3.7). Twenty-three built historic properties and four archaeological sites are within the revised APE. The existing Section 106 "adverse effect" determination for the FEIS Preferred Alternative will remain in place as there will still be adverse effects to the L'Enfant Plan of the City of Washington, DC. However, there are no longer adverse effects to Suitland Parkway and no additional properties will be adversely affected. The MOA was amended and restated for the Revised Preferred Alternative (see Section 2.2). Section 4.8 discusses the effects to historic properties with additional information provided in Appendix G, the *Section 106 Effects Assessment Report* (DDOT, 2014).

Visual Quality

- The FEIS included a visual quality evaluation to determine how the physical changes to the South Capitol Street Corridor, including New Jersey Avenue SE, the bridge and Suitland Parkway, would affect the visual and aesthetic conditions of the Project Area (see Section 4.14 of the FEIS). Using eight landscape units, visual quality differences (VQD) were identified for the FEIS Preferred Alternative, compared with existing visual conditions.

- The FEIS documented that the replacement of the existing I-395 on-ramp; the new bridge; the west traffic oval and east traffic circle; new I-295 diamond interchange ramps, and the conversion of the Suitland Parkway/Martin Luther King, Jr. Avenue SE overpass into an interchange with center ramps would provide major VQD (both positive and negative), compared with existing conditions (see Section 4.14 of the FEIS). In addition, the bridge type may change as a result of the decision to construct a fixed bridge. Section 4.9 discusses measures to maintain visual quality of the bridge. The section also provides an updated visual quality evaluation based on the physical or visual differences between the Revised Preferred Alternative and the existing conditions.

Pedestrian and Bicycle Facilities

- The FEIS Preferred Alternative included a number of design elements for improving the safety of pedestrians and cyclists, as well as improving their overall mobility (see Section 4.15 of the FEIS). The Revised Preferred Alternative would maintain the level of pedestrian and bicycle safety and mobility offered by the FEIS Preferred Alternative, but includes design changes. Section 4.10 identifies these changes.

Traffic and Transportation

- For the FEIS Preferred Alternative, the traffic impact analysis provided in the FEIS forecasted a 13 percent increase in traffic volume through the South Capitol Street Corridor in the year 2030, compared with the No Build Alternative (see Section 4.16 of the FEIS). The FEIS predicted traffic conditions for horizon year 2030 because this was the year with the latest available forecast data from MWCOG's travel demand forecast model. Among the 40 intersections analyzed, five of them were predicted to operate at level-of-service (LOS) F during the morning peak hour. During the evening peak hour, four intersections were forecasted to operate at LOS F conditions.
- Following the FEIS, MWCOG updated the regional travel demand models to reflect more recent land use forecasts and future transportation projects. New traffic horizon years were established reflecting MWCOG Transportation Planning Board (TPB) updates: (1) year 2020, the projected year of opening after completion of construction; and (2) year 2040, the design year of the Project. As a result, a revised traffic impact analysis, reflecting these updates, was prepared for the FEIS Preferred Alternative and the Revised Preferred Alternative. The objective of the updated traffic analysis was to evaluate whether the Revised Preferred Alternative would deteriorate traffic operations, compared with the FEIS Preferred Alternative. Section 4.10 and Appendix I provide the results of the updated traffic impact analysis.

Other Transportation Facilities and Services

- The level of public transit service, which includes Metrorail, Metrobus, the DC Circulator and commuter bus, will not be affected by the Revised Preferred Alternative. The FEIS documented that the level of public transit service would also be independent from the elements of the FEIS Preferred Alternative (see Section 4.16 of the FEIS).

- The FEIS documented that the FEIS Preferred Alternative would not affect the overall supply of parking (see Section 4.16 of the FEIS). This conclusion remains the same for the Revised Preferred Alternative.
- The FEIS Preferred Alternative would not affect other forms of transportation occurring in and around the Project Area, including water transportation, and freight and passenger rail services that travel through the north end of the Project Area (see Section 4.16 of the FEIS). The new bridge of the FEIS Preferred Alternative would alter flight operations (approach and departure) from the heliport located adjacent to South Capitol Street near the river. The realignment of the new bridge under the Revised Preferred Alternative would alter the potential impacts to water transportation and helicopter service that were provided in the FEIS. Sections 4.11 and 4.12 discuss changes to the transportation network.

Environmental Commitments

- Many of the environmental commitments provided in the FEIS remain valid for the Revised Preferred Alternative (see Section 4.25 of the FEIS). However, the Revised Preferred Alternative contains several changes in environmental commitments (see Section 4.13). The information provided in Section 4.14 is a summary of all the environmental commitments of the Revised Preferred Alternative, including those commitments provided in the FEIS that are still applicable for the Revised Preferred Alternative.

Section 4(f)

- The FEIS included a Section 4(f) Evaluation of the L'Enfant Plan and Suitland Parkway (see Chapter 5 of the FEIS). A Net Benefit Programmatic Agreement was used to determine that there is no feasible and prudent avoidance alternative to the use of these two Section 4(f) resources, and that all possible planning was conducted to minimize impacts to these resources.
- The Section 4(f) Evaluation was updated to reflect the Revised Preferred Alternative. The updated Section 4(f) Evaluation is provided as Chapter 5.0 of this Supplemental FEIS.

4.2 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (1994), requires all Federal agencies to "develop an agency-wide environmental justice strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." USDOT Order 5610.2(a) incorporates the intent and spirit of EO 12898 (1994) and provides the framework for an EJ analysis as part of a NEPA effort.

Two additional Executive Orders that are applicable to EJ populations were also considered as appropriate for the identification of tools to reach EJ populations and to determine potential adverse effects. These include EO 13166 – *Improving Access to Services for Persons with Limited English Proficiency* (2000); and EO 13045 – *Protection of Children from Environmental Health*

Risks (1997). Executive Order 13166 (2000) assists with the identification of EJ populations and EO 13045 (1997) is important when conducting the evaluation of impacts to EJ populations.

This section documents project compliance with Executive Order 12898. It begins by identifying the key environmental issues that could have an effect on EJ populations. Next, the assessment is documented using standards identified by the U.S. Department of Transportation to determine if the Revised Preferred Alternative based on the key environmental issues would cause a disproportionately high and adverse effect on EJ populations. This section concludes by summarizing the outreach activities to reach EJ populations to gather their input about the Project and its potential impacts.

4.2.1 Environmental Consequences

The EJ analysis focused on key technical issues that required new assessments due to the design changes in the Revised Preferred Alternative. The EJ analysis included the review of the noise, hazardous materials, and traffic and transportation studies for the Project, and a determination of the potential for disproportionate and adverse effects on EJ populations.

Noise

Impacts on EJ Populations

The *South Capitol Street Noise Technical Report* (NTR) (DDOT, 2014) analyzed the Revised Preferred Alternative. This analysis identified highway traffic noise impacts and determined appropriate feasible and reasonable noise mitigation measures. Key findings are summarized in Section 4.4 Noise.

The updated noise analysis evaluated 415 noise receptors (see Appendix E of the NTR). A total of 314 noise receptors are located in EJ areas (see Appendix L). A total of 101 noise receptors are not located in EJ areas.

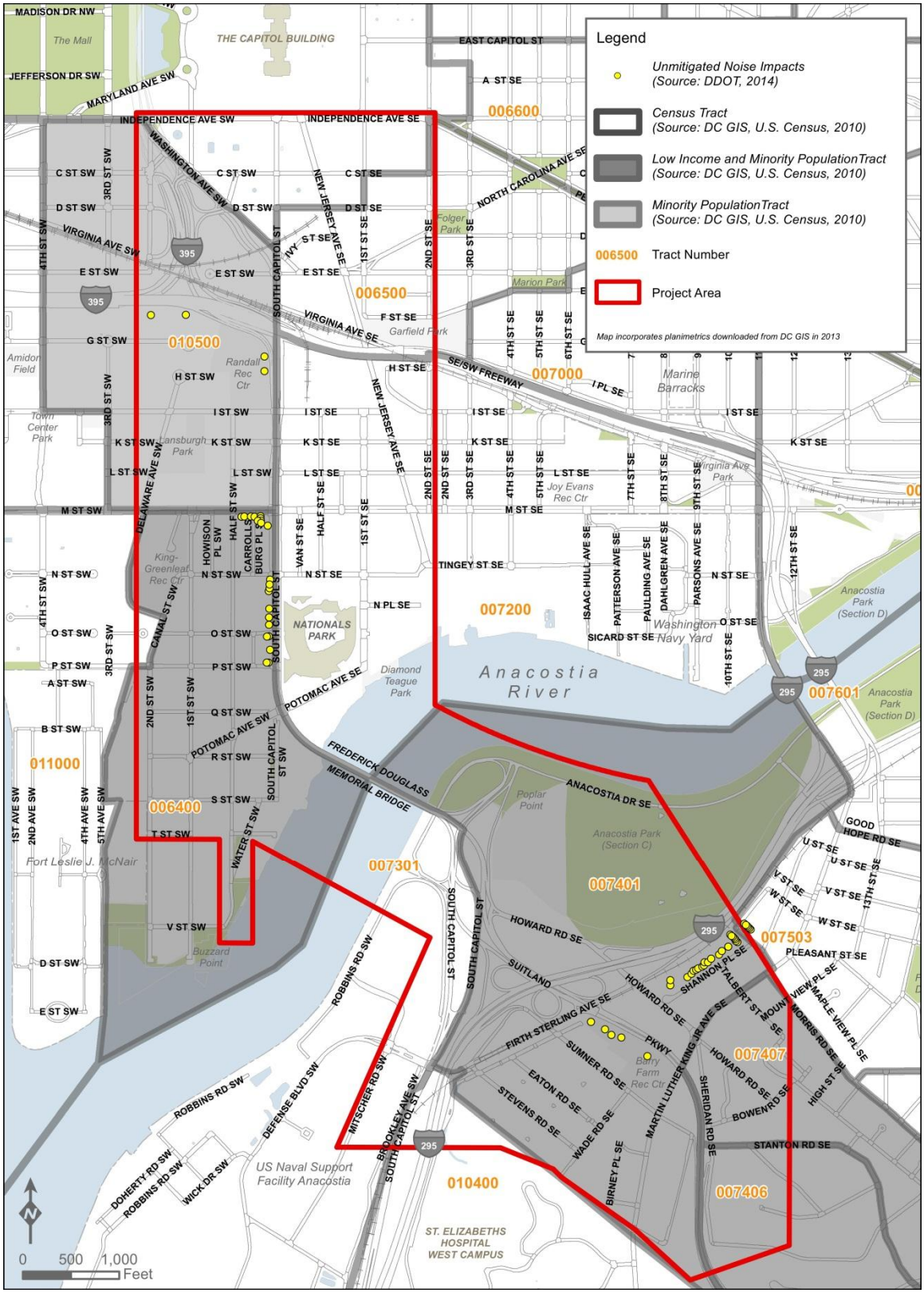
Figure 4-1 shows noise receptors within EJ areas and the 2013 Existing, 2040 No Build, and 2040 predicted noise level for the Revised Preferred Alternative. Of the 314 noise receptors in EJ areas, 59 are predicted to approach or exceed the Noise Abatement Criteria (NAC) for the 2040 Revised Preferred Alternative. This figure also shows the noise receptors that would exceed the NAC (with or without the Project), and the noise receptors that will not exceed the NAC (with or without the Project).

Mitigation

FHWA and DDOT require that noise abatement measures be considered at all locations where traffic-related noise impacts would exceed the NAC. As discussed in Section 4.4, noise barriers, including those that could benefit the 59 receptors representing EJ areas, were determined not to be feasible and reasonable and are will not be incorporated in the Project.

The Project is not expected to result in substantial noise impacts overall and would not result in disproportionate impacts to minority or low-income communities. As a result, no mitigation measures are proposed.

Figure 4-1: Noise Receptors in Relation to Environmental Justice Communities



Hazardous Materials

Impacts on EJ Populations

A Modified Phase I ESA was completed within the Project Area. Fifty-six properties of concern were identified in the Project Area including 15 properties not previously identified or included in the FEIS. Each of the identified properties are either known to be contaminated, or were likely to have used, stored, or handled hazardous substances or petroleum products as part of their operations. Therefore these properties were considered to be recognized environmental conditions (RECs). Detailed information on hazardous materials can be found in the *South Capitol Street Modified Phase I ESA Report* (DDOT, 2014) (Appendix D).

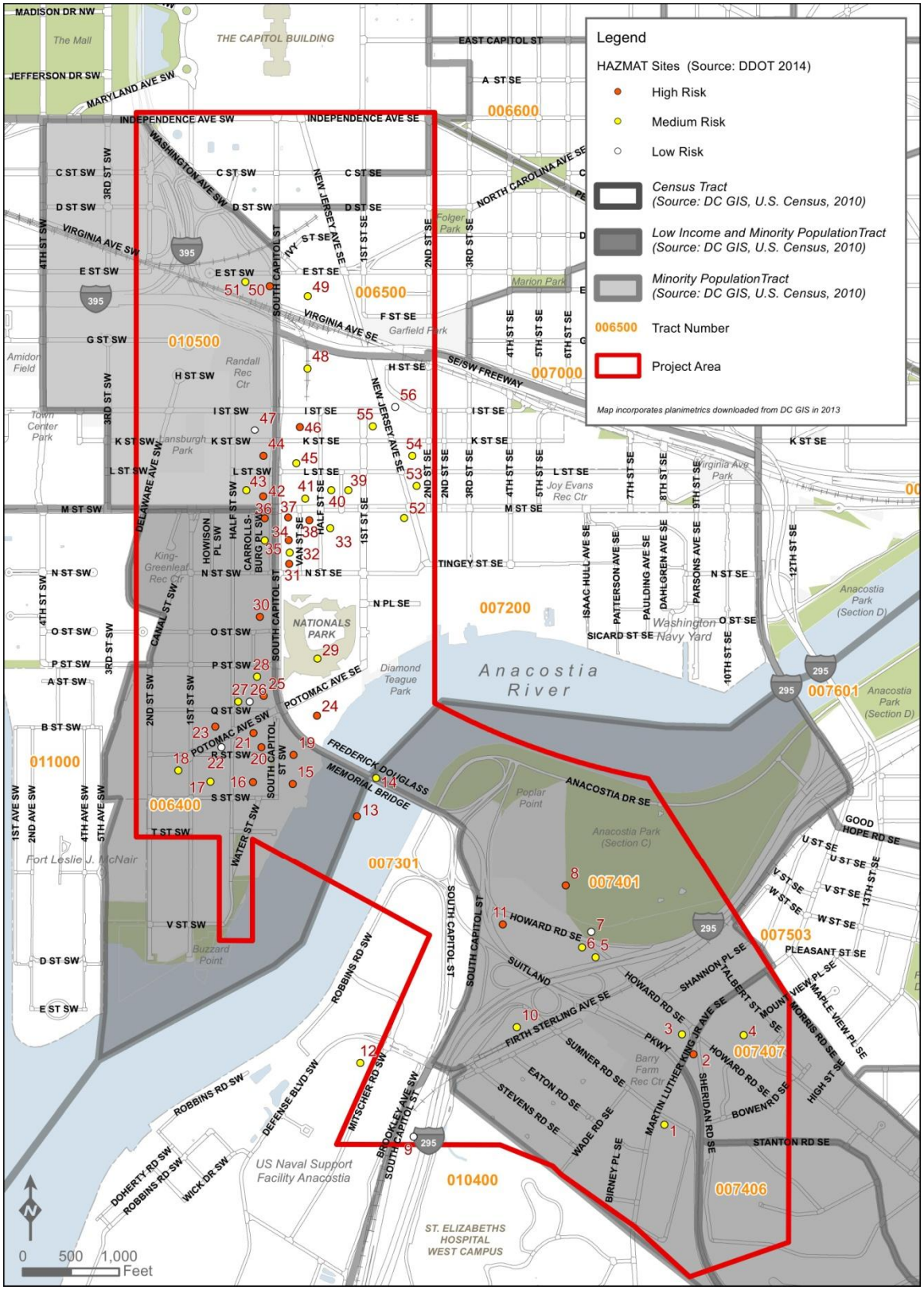
Of the 56 sites identified 36 RECs are located in EJ areas (Figure 4-2). Thirteen of the 36 identified RECs are located in Buzzard Point census tract 006400. Ten additional RECs were identified in census tracts 006400 and 010500. These REC locations are dispersed along the west side of South Capitol Street between South Capitol Street and Half Street, SW just north of Buzzard Point industrial area.

The Project would not result in impacts to the general population, including EJ populations.

Mitigation

While the REC locations could be a source for contamination as a result of excavation or disturbance in the construction area of the Revised Preferred Alternative, adherence to DDOE regulations and the implementation of construction and excavation protocols would limit exposure. Additional investigations, including Phase II assessments will be completed during the design and construction phases to further define the type and extent of contamination as remediation necessary to protect public health and worker safety.

Figure 4-2: HAZMAT Sites in Relation to Environmental Justice Populations



Traffic and Transportation

Impacts on EJ Populations

Information on the existing traffic conditions is contained in Section 3.11.3. Travel demand forecasts were developed for roadways in the Project Area. In general, traffic volumes on roadways under the Revised Preferred Alternative are projected to be similar to what was predicted for the FEIS Preferred Alternative (see Table 4-1). Also see Section 4.11.3 for a detailed analysis of the predicted traffic conditions. As noted in Section 4.13.2, the predicted traffic conditions provided in the FEIS remains valid for the Revised Preferred Alternative.

The Revised Preferred Alternative and the FEIS Preferred Alternative would have the same average daily traffic volumes in 2040 for the locations analyzed in the Project Area. Morning and evening peak hour traffic volume would be reduced by approximately 10 to 12 percent under the Revised Preferred Alternative compared with the FEIS Preferred Alternative along the entire roadway network in the Project Area (see Table 4-16).

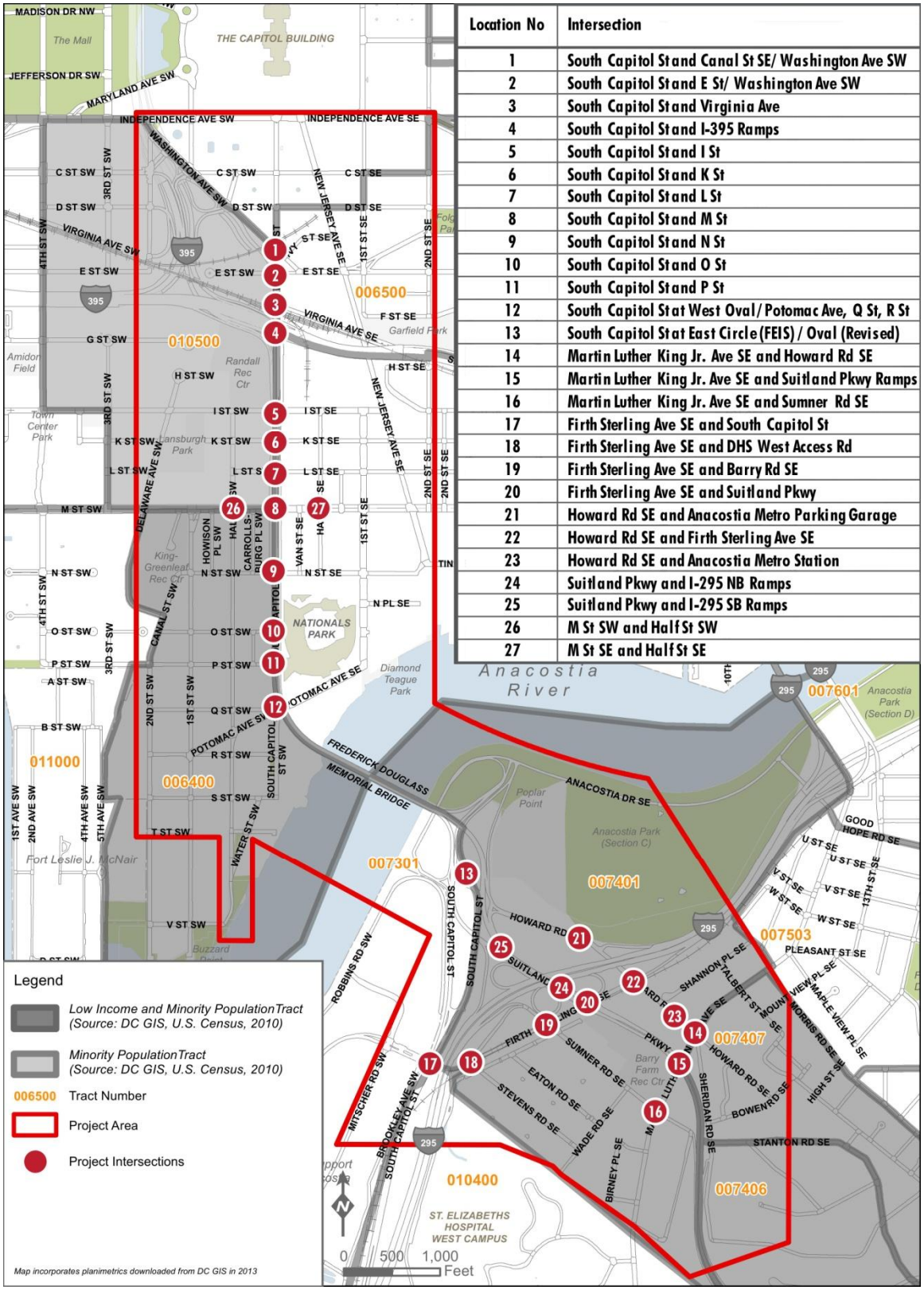
As shown in Figure 4-3, Level of Service was analyzed for 27 intersections in the Project Area (see Table 4-2). Thirteen of these locations are wholly in EJ areas. Nine additional intersections are partially located in EJ areas. Five intersections are in non-EJ areas. Under the Revised Preferred Alternative three intersections in low-income and minority population areas would operate at a LOS of E or F during the morning peak hour versus five intersections operating at LOS E or F under the FEIS Preferred Alternative. In the evening peak period, LOS under the Revised Preferred Alternative would be LOS E or F at six locations as compared to 10 intersections under the FEIS Preferred Alternative.

The Project would not result in adverse traffic or transport impacts to the general population, including low-income or minority populations.

Mitigation

No mitigation measures are required specifically for EJ populations. Mitigation measures regarding impacts to the general public are discussed in Section 4.11.4.

Figure 4-3: Intersections Analyzed in Relation to Environmental Justice Communities



Location No	Intersection
1	South Capitol St and Canal St SE/ Washington Ave SW
2	South Capitol St and E St/ Washington Ave SW
3	South Capitol St and Virginia Ave
4	South Capitol St and I-395 Ramps
5	South Capitol St and I St
6	South Capitol St and K St
7	South Capitol St and L St
8	South Capitol St and M St
9	South Capitol St and N St
10	South Capitol St and O St
11	South Capitol St and P St
12	South Capitol St at West Oval/ Potomac Ave, Q St, R St
13	South Capitol St at East Circle (FEIS) / Oval (Revised)
14	Martin Luther King Jr. Ave SE and Howard Rd SE
15	Martin Luther King Jr. Ave SE and Suitland Pkwy Ramps
16	Martin Luther King Jr. Ave SE and Sumner Rd SE
17	Firth Sterling Ave SE and South Capitol St
18	Firth Sterling Ave SE and DHS West Access Rd
19	Firth Sterling Ave SE and Barry Rd SE
20	Firth Sterling Ave SE and Suitland Pkwy
21	Howard Rd SE and Anacostia Metro Parking Garage
22	Howard Rd SE and Firth Sterling Ave SE
23	Howard Rd SE and Anacostia Metro Station
24	Suitland Pkwy and I-295 NB Ramps
25	Suitland Pkwy and I-295 SB Ramps
26	M St SW and Half St SW
27	M St SE and Half St SE

Table 4-2: Morning and Evening Level of Service (LOS) at Project Area Intersections in Low Income and Minority Population Areas

Intersection	Area Population		Morning LOS		Evening LOS	
	Low Income	Minority	FEIS Preferred Alternative	Revised Preferred Alternative	FEIS Preferred Alternative	Revised Preferred Alternative
South Capitol St and Canal St SE/Washington Ave SW	No	Part	C	D	B	C
South Capitol St and E St/Washington Ave SW	No	Part	C	C	F	E
South Capitol St and Virginia Ave	No	Part	A	B	E	C
South Capitol St and I-395 Ramps	No	Part	C	B	F	D
South Capitol St and I St	No	Part	D	B	D	D
South Capitol St and K St	No	Part	C	B	B	B
South Capitol St and L St	No	Part	C	B	C	C
South Capitol St and M St	Part	Part	D	D	D	D
South Capitol St and N St	Part	Part	D	C	B	C
South Capitol St and O St	Part	Part	B	B	A	B
South Capitol St and P St	Part	Part	B	B	A	B
South Capitol St at West Oval/ Potomac Ave, Q St, R St	Part	Part	F	C	E	D
South Capitol St at East Circle (FEIS)/Oval (Revised)	Part	Part	F	D	E	E
Martin Luther King Jr. Ave SE and Howard Rd SE	Yes	Yes	D	D	E	D
Martin Luther King Jr. Ave SE and Suitland Pkwy Ramps	Yes	Yes	D	D	C	D
Martin Luther King Jr. Ave SE and Sumner Rd SE	Yes	Yes	F	E	D	D
Firth Sterling Ave SE and South Capitol St	Part	Part	F	F	E	E
Firth Sterling Ave SE and DHS West Access Rd	Yes	Yes	D	E	E	E
Firth Sterling Ave SE and Barry Rd SE	Yes	Yes	A	C	D	D
Firth Sterling Ave SE and Suitland Pkwy	Yes	Yes	D	D	D	D

Table 4-2: Morning and Evening Level of Service (LOS) at Project Area Intersections in Low Income and Minority Population Areas (continued)

Intersection	Area Population		Morning LOS		Evening LOS	
	Low Income	Minority	FEIS Preferred Alternative	Revised Preferred Alternative	FEIS Preferred Alternative	Revised Preferred Alternative
Howard Rd SE and Anacostia Metrorail Parking Garage	Yes	Yes	A	A	C	B
Howard Rd SE and Firth Sterling Ave SE	Yes	Yes	D	C	E	F
Howard Rd SE and Anacostia Metro Station	Yes	Yes	B	B	F	D
Suitland Pkwy and I-295 NB Ramps	Yes	Yes	C	C	C	D
Suitland Pkwy and I-295 SB Ramps	Yes	Yes	E	B	C	E
M St SW and Half St SW	Part	Yes	B	C	B	F
M St SE and Half St SE	No	No	B	C	C	A

Source: VISSIM modeling by CH2M HILL, 2014

Note: Yellow shaded areas identify intersections predicted to have unacceptable (E) or failing (F) levels-of-service

4.2.2 Assessment of Potential for "Disproportionately High and Adverse Effects" on Minority and Low-Income Populations

Standards for Evaluating Effects

The U.S. Department of Transportation has defined a "disproportionately high and adverse effect" on minority and low-income populations as an adverse effect that:

- "Is predominantly borne by a minority population and/or a low-income population; or
- "Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority population and/or non low-income population."

The identification of a disproportionately high and adverse effect on EJ populations does not preclude a project from moving forward. USDOT Order 5610.2(a) Sub-section 8 (2012) states that a project with disproportionately high and adverse effects on EJ populations may be carried out under the following conditions:

- Programs, policies, and activities that will have a disproportionately high and adverse effect on minority populations or low-income populations will only be carried out if further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effects are not practicable. In determining whether a mitigation measure or an alternative is "practicable," the social, economic (including costs) and environmental effects of avoiding or mitigating the adverse effects would be taken into account.
- Programs, policies or activities that would have a disproportionately high and adverse effect on populations protected by *Title VI* (42 USC 2000d et seq.) "protected populations" would only be carried out if:

  (1) A substantial need for the program, policy or activity exists, based on the overall public interest

  (2) Alternatives that would have less adverse effects on protected populations (and still satisfy the need identified in subparagraph (1) above) have either

    (a) Adverse social, economic, environmental, or human health impacts that are more severe, or

    (b) Would involve increased costs of an extraordinary magnitude

Determinations of whether a project will have disproportionately high and adverse effects must take into consideration "mitigation and enhancements measures that will be implemented and all offsetting benefits to the affected minority and low-income populations…" (USDOT Order, Section 8.b).

Evaluation of Effects

Based on the preceding analysis, which included the evaluation of potential noise, hazardous material and traffic and transportation effects on EJ populations, it was concluded that the

Revised Preferred Alternative would not have disproportionately high and adverse effects on low-income or minority populations. Nonetheless, it is recognized that some of the impacts of the Revised Preferred Alternative may adversely affect individuals in these population categories.

Mitigation

Where required, mitigation measures have been proposed in this document. Section 4.14 includes all the environmental commitments of the Revised Preferred Alternative. However, none of them apply specifically to EJ population.

4.2.3 Environmental Justice and the Public Involvement Process

Public Involvement and engagement is a key tenet of EO 12898. As such, USDOT and FHWA adopted guideline to provide full and fair access to meaningful involvement by low-income and minority populations in project planning and development. A range of tools and techniques have been utilized to engage minority and low-income populations in the development of the Project, including:

- Door to Door and Grocery Store Outreach
- Small Group Meetings and Presentations

Other outreach activities, many of which have taken place in low income and minority neighborhoods include:

- Public Meetings – scoping meetings, open houses, and community workshops
- Community Working Group Meetings
- Project information distribution at public facilities
- Coordination with Elected Officials
- South Capitol Street EIS and Anacostia Waterfront Initiative Websites www.southcapitoleis.com and www.anacostiawaterfront.org
- Publications – Including print advertisements, newsletters, fact sheets, fliers, and door hangers/postcards

Public Outreach Activities Following the FEIS

After the release of the FEIS, two public meetings held, one on each side of the Anacostia River, on April 26 and 28, 2011. The open house meetings were held to present the findings of the FEIS and to provide the public with the opportunity to comment on the Preferred Alternative and findings of the FEIS. Many of the public comments expressed support of DDOT's revision of the design to reopen Sheridan Road. Other comments included thoughts on expanding bicycle and pedestrian connections. One comment regarding environmental justice urged the Project team to keep the community involved in the design process. However, most of the comments received pertained to the following topics:

- Concern about construction impacts such as noise, pollution, and traffic on residents of the area

- Concern about construction impacts on Anacostia River traffic
- Concern about future regional traffic conditions resulting from the South Capitol Street Project, 11th Street Bridge Project, and planned residential, commercial, and mixed use developments

On July 30, 2013 DDOT held an Informational Update Meeting for the South Capitol Street Corridor Project at the Capitol Skyline Hotel. DDOT held the meeting to share the latest design, phasing and schedule information for the Project. An overview of the design-build process was also provided to attendees.

In addition to public involvement activities that were part of the process leading to the FEIS, on May 15, 2014, DDOT hosted a public open house meeting at Matthews Memorial Baptist Church that is located in a predominately low-income and minority neighborhood close to the Project Area. The meeting was held to provide the community with an update of the Project in light of the preparation of the Supplemental DEIS for the Revised Preferred Alternative and to provide an update on the design-build process. More than 25 stakeholders attended the meeting. A range of comments were provided and included requests for continued updates for residents as public spaces are included in the final design, a request to expand the mailing boundary to include neighborhoods outside of the Project Area east of the river to include Morris Ave and a question about the operation of the traffic oval.

Tools and techniques used to promote the May 15, 2014 meeting included advertisements in *East of the River*, *Hill Rag*, the *Washington Post Express*, and the *Southwester*. Postcards, fliers and posters were also distributed throughout the Project Area via a variety of methods. More than 2,400 fliers were distributed at the 4th Street, SW Safeway, Navy Yard/National's Park, Anacostia and Congress Heights Metro Stations, Southwest Neighborhood Library, churches and apartment complexes within the study area. In addition, the 2014 newsletter was delivered via door-to-door outreach in EJ areas along South Capitol Street and east of the river in the Barry Farm complex.

4.3 Wetlands

4.3.1 Impacts

The newly identified forested (PFO) wetland adjacent to I-295 currently falls within the footprint of the Revised Preferred Alternative. The total size of this wetland within the footprint of the Project is 0.04 acre. The current design includes replacement of the I-295 Bridge over Firth Sterling Avenue SE and an adjacent inactive railroad right-of-way. Based on the current level of design, this wetland would be partially filled. Because this wetland was determined by the USACE to be an isolated wetland (see February 27, 2015 letter in Appendix K), it is not under the jurisdiction of the USACE (see Section 3.5). Therefore, if the impact were to occur, it would not require permitting pursuant to Section 404 of the Clean Water Act, but would require DDOE permitting. Impact avoidance and minimization efforts will be explored during

the further design of the Project, and a final wetland impact assessment will be conducted at that time in addition to a mitigation plan.

4.3.2 Mitigation

If the PFO wetland located along Firth Sterling Avenue SE cannot be avoided, mitigation may be required. A mitigation plan may be prepared if required by the DDOE after final design has provided a more refined assessment of the potential wetland impact. The elements of the Project along Suitland Parkway would not require use of the two newly delineated wetlands in that vicinity, which the USACE determined to be isolated wetlands that are not under the jurisdiction of the USACE (see February 27, 2015 letter in Appendix K). To ensure these wetlands are not disturbed during construction, they will be fenced off for protection using a 25-foot buffer if required by DDOE.

4.4 Noise

4.4.1 Impacts

The *South Capitol Street Noise Technical Report* (DDOT, 2014) Supplemental DEIS documented the results of the updated noise analysis for the Project, specifically for the Revised Preferred Alternative (Appendix D).

The updated noise analysis evaluated 415 noise receptors based on FHWA traffic noise regulations, as prescribed in 23 CFR 772 (July 2011) and *Highway Traffic Noise Analysis and Abatement Policy and Guidance* (January 2011), and in conformance with the DDOT *Noise Policy* (April 11, 2011). Table 4-3 provides the FEIS Preferred Alternative and the Revised Preferred Alternative noise analysis results.

Table 4-3: Updated Noise Analysis Results

Noise Analysis Area	Predicted Noise Levels for FEIS Preferred Alternative/ Receptor Number (dBA)*	Predicted Noise Levels for Revised Preferred Alternative/ Receptor Number (dBA)	Land Use	Noise Receptor Impacts? (Yes/No)	Proposed Noise Abatement Measure
Suitland Parkway between west of Stanton Road SE and Martin Luther King, Jr. Avenue SE	73 (R-10)	63 (1774)	Church	Yes for FEIS; No for SDEIS/SFEIS	None
Suitland Parkway between Martin Luther King, Jr. Avenue SE and I-295	No receptor	69 (1762)	Recreatio n	Yes for SDEIS/SFEIS	None
Suitland Parkway between I-295 and South Capitol Street	65 (R-7)	61 (1850)	School	No	None

Table 4-3: Updated Noise Analysis Results (continued)

Noise Analysis Area	Predicted Noise Levels for FEIS Preferred Alternative/ Receptor Number (dBA)*	Predicted Noise Levels for Revised Preferred Alternative/ Receptor Number (dBA)	Land Use	Noise Receptor Impacts? (Yes/No)	Proposed Noise Abatement Measure
I-295 between south of Defense Boulevard and 11th Street Bridge exit	63 (R-9) 65 (R-8)	62 (1705) 68 (1904)	Residential	No for FEIS; Yes for SDEIS/SFEIS	None
South Capitol Street between south of Defense Boulevard and Potomac Avenue	59 (R-11) 59 (R-13)	58 (1672) 57 (1669)	Child Develop. Center/park	No	None
South Capitol Street between Potomac Avenue and N Street	72 (R-5) 61 (R-6)	69 (1484) 56 (1663)	Residential	Yes	None
South Capitol Street between N Street and M Street	71 (R-3)	69 (1412)	Residential	Yes	None
South Capitol Street between M Street and I Street	72 (R-2) 71 (R-4)	70 (1185) 70 (1400)	School/ church	Yes	None
South Capitol Street between I Street and I-395	No receptor	68 (1171)	Recreation	Yes for SDEIS/SFEIS	None
South Capitol Street between I-395 and Independence Avenue	No receptor	62 (1111)	Residential	No for SDEIS/SFEIS	None
New Jersey Avenue between M Street and I-395	No receptor	60 (1195)	Residential	No for SDEIS/SFEIS	None
New Jersey Avenue between I-395 and Independence Avenue	66 (R-1) 72 (R-12)	63 (1141) 61 (1155)	Residential/ park	Yes for FEIS; No for SDEIS/SFEIS	None

Note: *Predicted exterior noise levels were obtained for receptors R-2 to R-12 from Table C of the *Noise Technical Report* (DDOT, 2007) for Alternative 2, which used morning peak traffic volumes in TNM® 2.5; and from Table D for receptor R-1, which used evening peak traffic volumes. These results represent the loudest noise.
FEIS: Final Environmental Impact Statement (March 2011)
SDEIS/SFEIS: Supplemental Draft Environmental Impact Statement (December 2014) and Supplemental Final Environmental Impact Statement (August 2015)

4.4.2 Mitigation

Noise receptors with design year noise levels that approach or exceed the NAC for Activity Category B and C (church and recreation areas) based on the Revised Preferred Alternative were evaluated for appropriate noise abatement measures and traffic noise mitigation feasibility and reasonableness. Noise abatement measures were considered at all location where traffic-related noise impacts are identified. The following list identifies possible noise abatement measures that were considered:

- Constructing noise barriers within the proposed right-of-way

- Modifying the proposed horizontal and/or vertical alignment of the roadway
- Acquiring property to serve as a buffer zone
- Modifying speed limits and/or restricting truck traffic

For a noise abatement measure to be incorporated into a project, the measure must be determined to be both feasible and reasonable. For this Project, noise barriers were determined to be the feasible, most practical and effective noise abatement measure, and are thus the only measure evaluated in detail to determine reasonableness. Also, since traffic noise impacts are not predicted to occur for interior noise-sensitive areas (NAC Activity Category D), interior noise insulation was not considered as a potential noise impact mitigation measure. The other three abatement measures were evaluated and considered not to be feasible and reasonable for the following reasons:

- Roadway alignment modification: The receptors affected by traffic noise are located along existing roadways that include South Capitol Street, I-295 and Suitland Parkway. Although the Revised Preferred Alternative would modify these roadways, it does not propose to change their horizontal alignments, which would be highly disruptive to the surrounding communities. In order to reduce noise impacts with adjustments to vertical roadway alignments, the noise line-of-sight between the noise source (roadway traffic) and noise receptor would need to be broken. This can be done by substantially lowering the roadways below existing grade to create cut sections, which would act similarly to earthen berms that absorb noise. However, changing the vertical roadway alignments of South Capitol Street, I-295 and Suitland Parkway would not be consistent with the purpose and need of the Project.
- Acquiring property as a buffer zones: This measure may only be feasible if there is unimproved property between the receptors and the noise source. None such property exist at the locations of the receptors.
- Traffic speed modifications: Traffic speed modifications are already proposed on South Capitol Street in the form of at-grade ovals at the approaches to the new bridge. The proposed speed limits in these areas would be much lower than the typical speed on South Capitol Street, and would result in generally lower traffic noise. This was assumed in the noise analysis. Also, it would not be practical to prohibit heavy trucks from using South Capitol Street or I-295.

To determine if constructing noise barriers within the proposed right-of-way is reasonable and feasible, three noise barriers were evaluated:

- A 1,223-foot-long noise barrier at heights of 12, 14, 18, and 20 feet on the west side of Suitland Parkway between Martin Luther King, Jr. Avenue SE and I-295.
- A 1,603-foot-long noise barrier at heights from 10 to 22 feet on the south side of I-295 between the south side of Defense Boulevard and 11th Street Bridge exit.
- A 947-foot-long noise barrier at heights of 10, 12, 14, and 22 feet on the west side of South Capitol Street between I Street and I-395.

The initial noise barrier evaluation of feasibility and reasonableness was performed in accordance with the 2011 DDOT Noise Policy, using an estimated cost of construction of $25 per square foot. The FHWA allows DDOT to consider the actual construction cost of noise abatement, which may include any other costs associated with the barrier. The analysis was subsequently performed using a noise barrier construction cost of $100 per square foot to realistically reflect typical local costs to construct noise barriers. At $100 per square foot, all 3 noise barriers, at all heights, exceeded the threshold cost of $40,000 per benefited receptor and therefore, are not cost reasonable.

4.5 Water Quality

4.5.1 Impacts

The current preliminary fixed bridge design includes four bridge piers within the Anacostia River impacting 20,368 square feet of riverbed. Based on the conceptual design solution using drilled shaft piles of about 8 to 9 feet in diameter, the pile tip elevations for the in-water piers are likely to be of the order of minus 100 feet, which would translate to be approximately 80 feet below the riverbed level.

4.5.2 Mitigation

Section 4.13.6 provides information regarding BMPs for mitigation. Additional information can be found in Appendix E, the *Supplemental Natural Resources Technical Report* (DDOT, 2014).

The riverbed impacts qualify for a USACE Nationwide Permit 15 for USCG approved bridge construction. As mentioned in Section 4.12.6, a Clean Water Act Section 401 Water Quality Certification would also be required for any construction related discharge to the Anacostia River. In addition, the NPS claims jurisdiction of the riverbed and therefore, the Project would need to obtain a Special Use Permit from the NPS in order to construct the piers necessary to support the new bridge.

4.6 Wildlife and Habitats

4.6.1 Impacts

Up to 42 specimen/special trees and larger forested areas would be impacted by the Revised Preferred Alternative.

In April of 2012, the Atlantic sturgeon became listed as an endangered species under the Endangered Species Act. A preliminary *Biological Assessment (BA) for the Atlantic Sturgeon* (DDOT, 2014) for the Atlantic sturgeon was prepared in 2014 to evaluate potential impacts to the species from the Revised Preferred Alternative. The biological assessment (Appendix F) determined that the likelihood of occurrence of Atlantic sturgeon within the Anacostia River is extremely low and that conservation measures agreed to during consultation for the shortnose sturgeon would also apply for the Atlantic sturgeon. The biological assessment resulted in an

FHWA determination that the Project is "not likely to adversely affect" the Atlantic sturgeon in accordance with Section 7 of the Endangered Species Act. In a letter dated September 16, 2014, the NMFS responded that no federally listed or proposed threatened or endangered species under their jurisdiction exist in the vicinity of the Project and that no direct or indirect effects are expected. No further consultation with NMFS is required.

Under the *Migratory Bird Treaty Act of 1918* (16 USC 703-712), removal of an active osprey or peregrine falcon nest from the Frederick Douglass Memorial Bridge before demolition would require a permit from the USFWS. However, removal of nests without eggs or young does not require a permit. Ospreys begin nesting in late March or early April and leave the area in late August or early September. Peregrine falcons begin laying eggs in late February and early March and young typically leave the nest by August.

4.6.2 Mitigation

Impacts on up to 42 specimen/special trees and larger forested areas may be reduced during the avoidance and minimization efforts undertaken during the design-build process. Any remaining specimen/special tree impacts will be offset through designed landscape tree plantings within the Project Area. The landscaping plan will consider the use of native trees and plants, which are consistent with the requirements of DDOT's Urban Forestry Administration. Many of these newly planted trees will have the opportunity to become specimen/special trees over time. Little opportunity exists to create forested habitat within the urbanized Project Area. However, some small, open woodland habitat will be created through the landscape design process of the Project.

The DDOE conducts annual submerged aquatic vegetation surveys of the Anacostia River. These surveys will be reviewed prior to, during and after construction of the new bridge and the demolition of the old bridge to determine if construction/demolition cause changes to the aquatic vegetation near the existing and future bridges.

The Project will remove all inactive osprey and peregrine falcon nests on structures to be demolished, and keep any new nests from being constructed by continuously removing any new nesting material that is added. For occupied nests needing to be relocated, coordination must occur with USFWS to secure a Migratory Bird Treaty Act permit. The permit will likely include the placement of an alternative nest platform for the osprey and installation of a nest box on the new bridge structure for the peregrine falcon. Relocation has been successfully demonstrated with ospreys in Maryland, where a new nest platform was constructed on the Chesapeake Bay Bridge to relocate a nest away from a traffic camera (Wheeler 2014). Peregrine falcon nest relocation is planned for the Tappan Zee Bridge over the Hudson River in New York, where a pair currently is using a nest box on the existing bridge (Tappan Zee Hudson River Crossing Project Environmental Impact Statement 2012).

4.7 Geology, Topography and Soils

4.7.1 Impacts

Construction of the Revised Preferred Alternative would require grading of existing land surfaces for placement of new roadway components, primarily near the new Frederick Douglass Memorial Bridge approaches. Both the west traffic oval and the east traffic oval would require some grading, predominantly using fill material. Topography is relatively flat in these areas and soil erosion during construction is expected to be minimal. In addition, the majority of the construction would occur in areas with an already high level of urban ground disturbance.

The geometry of the east traffic oval will replicate the west traffic oval. However, the open space outside of the formal streetscape will have an informal, park-like character that blends with the neighboring Anacostia Park and Suitland Parkway. The vertical profile and landscaping of the traffic oval will be designed to enhance gateway views and sense of arrival for vehicles transitioning from South Capitol Street and Suitland Parkway through the east traffic oval and onto the bridge. Therefore, the east traffic oval will have grades in which the east and north ends of the traffic oval will have slightly higher elevations to enhance gateway views from the perspective of motorists.

The Revised Preferred Alternative changed the proposed interchange at the Suitland Parkway/Martin Luther King, Jr. Avenue SE overpass. Under the FEIS Preferred Alternative, the new interchange would have introduced a center ramp that would have substantially altered the topographic conditions on the parkway at the Martin Luther King, Jr. Avenue SE overpass. The change to an urban diamond interchange would better maintain the existing topography of the parkway at the overpass.

4.7.2 Mitigation

No mitigation measures are required.

4.8 Cultural Resources

Effects assessments are based on the criteria of adverse effect as defined in 36 CFR 800.5 "Assessment of Adverse Effects." According to this portion of the regulations, the criteria of adverse effect are defined as follows:

> "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative."

Examples of adverse effects are identified in 36 CFR 800.5 and include, but are not limited to, the following:

- Physical destruction of or damage to all or part of the property
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR 68) and applicable guidelines
- Removal of the property from its historic location
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features
- Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American tribe or Native Hawaiian organization and
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance

4.8.1 Built Historic Properties

Twenty-three built historic properties are located within the revised Area of Potential Effects (APE) for the Revised Preferred Alternative. These properties are either listed in or eligible for listing in the NRHP; or designated as NHLs; or potentially eligible for listing in the NRHP. The Project has no effect on two historic properties; no adverse effect on twenty historic properties; and an adverse effect on one historic property, the L'Enfant Plan of the City of Washington, DC. The Revised Preferred Alternative will alter the historic L'Enfant Plan in the vicinity of South Capitol Street and Potomac Avenue SW, in the location of the proposed traffic oval, changing the street grid in the vicinity of Q and R Streets SW and the axial alignment of Potomac Avenue SW.

Figure 3-10 shows the historic properties on the revised APE map and Table 4-4 includes each property's effect assessment. The FEIS Preferred Alternative would have an adverse effect on the Suitland Parkway because of proposed changes to the parkway and Martin Luther King, Jr. Avenue overpass. The Revised Preferred Alternative avoids these impacts and there no longer will be an adverse effect to the Suitland Parkway. The *South Capitol Street Project Section 106 Assessment of Effects for Historic Properties* (DDOT, 2014) contains detailed assessments of effects. A draft version of this report was be submitted in early August 2014 to the DC SHPO and consulting parties for review and comment. A final version was submitted to the DC SHPO and consulting parties in November 2014 and is included as Appendix G to this document.

Table 4-4: Eligible/Listed/NHL Historic Properties in the Revised Area of Potential Effects with Effects Assessments

Historic Property Identifier	Photograph	Name/Location (District of Columbia)	Description	NRHP Status	Effect Assessment
1		*Capitol Hill Historic District* Roughly bounded by the United States Capitol and related buildings to west, F Street NE and Constitutional Avenue to the north, 14th, 13th, and 11th Streets SW to the east, and the Washington Navy Yard and Southeast-Southwest Freeway to the south	Primarily a residential area with 2- to 3-story row houses and small frame houses in a variety of architectural styles including Federal, Italianate, Greek Revival, Queen Anne, Romanesque Revival, and vernacular interpretations; began as boarding house community for members of Congress; one of the city's oldest and its largest residential community; includes contributing religious, commercial, institutional, and military buildings as well as several parks.	Listed	No Adverse Effect
2		*Randall Junior High School (Francis L. Cardozo Elementary School)* 61 I Street SW	1906 main block building is a 2-story 7-bay-wide building clad in red brick laid in Flemish bond with limestone trim and detailing accessed by a Colonial Revival entrance; a similar style freestanding building (1912) in red brick was later attached to the main building via the west wing (1927); 1-story red brick east wing (1927) houses the auditorium; later additions do not contribute to the property's significance.	Listed	No Effect

Table 4-4: Eligible/Listed/NHL Historic Properties in the Revised Area of Potential Effects with Effects Assessments (continued)

Historic Property Identifier	Photograph	Name/Location (District of Columbia)	Description	NRHP Status	Effect Assessment
3		*Capitol Police Horse Barn/Former D.C. Dog Pound* Intersection of I Street SW and South Capitol Street	1-story I-plan utilitarian building clad in brick with a wide entry (infilled) and five stall openings along the west elevation; 1943 map labels building as "DC Pound," but originally built as Capitol Police Horse Barn.	Eligible	No Adverse Effect
4		*St. Vincent de Paul Church* 14 M Street SE	1903 1½-story Romanesque Revival-style building with ashlar-cut granite block walls and limestone trim; a 1-story rectory (1921) is located east of building; the rectory was renovated and connected to the building ca. 1965 and does not contribute to the property's significance.	Eligible	No Adverse Effect
5		*Southwest Rowhouse Historic District/Carrollsburg Place* 1200 Block of Carrollsburg Place SW, 1200 Block of Half Street SW, east side, 4-10 N Street SW, 1301-1317 South Capitol Street	Residential historic district with a collection of modest 2-story brick rowhouses constructed for working-class residents; includes an early public housing prototype (Carrollsburg Place) constructed by the Sanitary Housing Commission; includes one non-contributing commercial building; survived mid-20th century urban renewal efforts that razed the majority of the southwest quadrant.	Eligible	No Adverse Effect

Table 4-4: Eligible/Listed/NHL Historic Properties in the Revised Area of Potential Effects with Effects Assessments (continued)

Historic Property Identifier	Photograph	Name/Location (District of Columbia)	Description	NRHP Status	Effect Assessment
6		*William Syphax School* 1360 Half Street SW	1902 2-story Colonial Revival-style public school building; 3-bay-wide building has red brick walls and terra-cotta, wood, and wrought iron trim; 2-story additions (1941; 1953) built to the north were also executed in the Colonial Revival style.	Listed	No Effect
7		*National War College (Army War College)* Fort Leslie J. McNair, P Street, between 3rd and 4th Streets SW; bounded by D Street SW to the north, the Anacostia River to the east, the Anacostia River to the south, and the Potomac River's Washington Channel to the west.	3-story Neoclassical style building constructed following a Beaux-Arts plan with red brick walls and limestone trim; features a domed central pavilion and two lateral 12-bay-wide wings; faces north onto a quarter-mile greensward.	National Historic Landmark	No Adverse Effect
8		*PEPCO Buzzard Point Power Plant/Pump House* The PEPCO Buzzard Point Power Plant is located at 1930 1st Street SW; the PEPCO Buzzard Point Power Plant's Pump Station is located at 2000 Half Street SW	3-story "stripped" Art Deco-style power plant with buff-colored brick walls and a 1-story cast stone office (facade); expanded twice to increase the number of generators (1940; 1943); associated 2-story brick pump station is a contributing resource and the pump station's setback second story is an addition.	Eligible	No Adverse Effect

Table 4-4: Eligible/Listed/NHL Historic Properties in the Revised Area of Potential Effects with Effects Assessments (continued)

Historic Property Identifier	Photograph	Name/Location (District of Columbia)	Description	NRHP Status	Effect Assessment
9		*WASA Poplar Point Pump Station* Located in a narrow strip of land in the middle of the Suitland Parkway's inbound and outbound lanes as it approaches the Frederick Douglass Memorial Bridge	2-story stripped Art Deco-style pump station with concrete and pebbled stucco walls; first-story windows are infilled with concrete blocks and the second-story windows have been replaced.	Eligible	No Adverse Effect
10		*St. Elizabeths Hospital* 2700 Martin Luther King, Jr. Avenue SE	The hospital's 182-acre campus is a historic district that includes 80 contributing buildings, one contributing site, one contributing structure, and 15 noncontributing buildings; the Gothic Revival-style Center Building (1853-1895) was the first building erected on the hospital's grounds and other contributing buildings were designed in period revival styles; one of the nation's earliest institutions for the treatment of mental illness.	National Historic Landmark	No Adverse Effect
11		*Suitland Parkway* Extends from the Anacostia River at South Capitol Street to the Marlboro Pike, Maryland	Parkway linking Andrews Air Force Base with the District of Columbia; 9.18 miles of roadway (2.8 in the District of Columbia and 6.38 in Maryland); authorized in 1937; a new type of road that combined parkway principles with freeway efficiency.	Listed	No Adverse Effect

Table 4-4: Eligible/Listed/NHL Historic Properties in the Revised Area of Potential Effects with Effects Assessments (continued)

Historic Property Identifier	Photograph	Name/Location (District of Columbia)	Description	NRHP Status	Effect Assessment
12		*Recommended Anacostia Historic District Boundary Expansion* Roughly bounded by Shannon Place SE, Chicago Street SE, Martin Luther King, Jr. Avenue SE, Howard Road, CSX Railroad tracks	The Anacostia Historic District (NRHP 1978) includes buildings constructed between 1870 and 1930, and includes residential, religious, and commercial buildings; the boundary expansion includes 99 contributing building and the majority of these resources date to the 1910s and '20s; resources include wood frame and brick residential, educational, religious, and commercial buildings and reflect Anacostia's continued development through the mid 20th century; contributing resources were built within the Anacostia District's period of significance (1854-1940). The proposed boundary expansion increases the district boundaries.	Eligible	No Adverse Effect
13		*Anacostia Park* Along the Anacostia River from the Douglass Bridge to the District of Columbia boundary	1,200-acre park that is one of the district's largest recreational areas; created from mud flats during the early 20th century as an integral part of the 1902 McMillan Plan the District of Columbia; became the Bonus Army's base of operation for petitioning the government (1932) and a shantytown was established; site of golf course constructed by the government (1930s) for African Americans to forestall desegregation of public facilities.	Eligible	No Adverse Effect

Table 4-4: Eligible/Listed/NHL Historic Properties in the Revised Area of Potential Effects with Effects Assessments (continued)

Historic Property Identifier	Photograph	Name/Location (District of Columbia)	Description	NRHP Status	Effect Assessment
14		*WASA Anacostia Shoreline Pump Station* Located on the Anacostia River's south bank at an elbow in the river known as Poplar Point	Small 1-story pavilion built in a split-level fashion with red brick walls and decorative stone trim; provides shelter for control wheels and valves; associated with the Main Sewerage Pumping Station and is the closest landfall for sewer pipes crossing beneath the Anacostia River from the main pumping station.	Eligible	No Adverse Effect
15		*Old National Capitol Pumphouse* Sits on piers adjacent the Anacostia River's west bank, south of the intersection of Potomac Avenue SE and 1st Street SE	1-story rectangular-plan pumphouse with red brick walls; Mediterranean-influenced design.	Eligible	No Adverse Effect
16		*Main Sewerage Pumping Station, District of Columbia* 125 O Street SE	Beaux Arts sewage pumping station reflecting late Renaissance Revival-style features; steel-frame building with red brick walls, featuring stone quoins, beltcourses, cornice brackets, pediment dormers, and capitals.	Listed	No Adverse Effect

Table 4-4: Eligible/Listed/NHL Historic Properties in the Revised Area of Potential Effects with Effects Assessments (continued)

Historic Property Identifier	Photograph	Name/Location (District of Columbia)	Description	NRHP Status	Effect Assessment
17		*Washington Navy Yard Annex Historic District* Bounded by M Street SE to the north, Isaac Hull Avenue to the east, the Anacostia River to the south, and 2nd Street SE to the west	Westward development of the Washington Navy Yard that includes one of the city's largest concentrations of industrial architecture; 60-acre complex; major site of U.S. naval gun manufacture since ca. 1850 and served as the center of naval weapons production during World Wars I and II; renamed the Naval Gun Factory in 1945 and production stopped in 1962.	Listed	No Adverse Effect
18		*Washington Navy Yard Historic District* 8th and M Streets SE (Main Entrance), bounded by the Anacostia River to the south	Late Victorian-era, 42-acre district includes approximately 45 major historic buildings and structures as well as numerous support buildings; design initiated by Benjamin Latrobe — selected by Thomas Jefferson. Served as a site for naval shipbuilding and later for naval gun manufacture.	National Historic Landmark	No Adverse Effect
19		*Washington Navy Yard East Extension* Bounded by M Street SE to the north, the Anacostia River to the south, and 2nd Street SE to the west	Eastward development of the existing Washington Navy Yard beginning in 1902 with the most comprehensive building campaign dating from circa 1918-1944. Work conducted in this portion of the Washington Navy Yard was critical to naval weapons development and testing during World Wars I and II.	Eligible	No Adverse Effect

Table 4-4: Eligible/Listed/NHL Historic Properties in the Revised Area of Potential Effects with Effects Assessments (continued)

Historic Property Identifier	Photograph	Name/Location (District of Columbia)	Description	NRHP Status	Effect Assessment
20		*The L'Enfant Plan of the City Washington, DC* Roughly bounded by Florida Avenue from Rock Circle NW to 15 Street NE, south to C Street, and east to the Anacostia River	Baroque city plan with Beaux Arts modifications; designed by Pierre L'Enfant; regular orthogonal grid with numerically and alphabetically designated streets, intersected by diagonal avenues; historic and contemporary system of parks and medians; 1901-02 McMillan Commission recommendations resulted in physical changes for urban development; contributing features include but are not limited to avenues, parks, and reservations.	Listed	Adverse Effect
21		*United States Capitol* Capitol Hill	English Neoclassical/Federal design that represents the work of architects William Thornton, Benjamin Henry Latrobe, Charles Bulfinch, and Thomas U. Walter. Characterized by horizontal massing topped by a dome and adorned with attenuated elements and lavish Corinthian motifs.	NHL	No Adverse Effect

Table 4-4: Eligible/Listed/NHL Historic Properties in the Revised Area of Potential Effects with Effects Assessments (continued)

Historic Property Identifier	Photograph	Name/Location (District of Columbia)	Description	NRHP Status	Effect Assessment
22		USS *Barry* (DS *Barry*; note that the historic name is being used for the Section 106 assessment) Anacostia River, Washington Navy Yard	Commissioned in 1956 by the USN and constructed in Bath, Maine, the USS *Barry* (DD-933) is a 2,780-ton Forrest Sherman class destroyer named in honor of Commodore John Barry (1745-1803). After that second tour, the USS *Barry* was decommissioned in November 1982. The ship has been moored at the Washington Navy Yard since 1983.	Potentially Eligible (The Navy and the DC SHPO are currently resolving eligibility; ship is being treated as eligible for Project purposes only.)	No Adverse Effect
23		*Skyline Inn* 10 I Street SW	Seven-story hotel building completed in 1963. Designed by architect Morris Lapidus, while he led the firm Lapidus, Harle & Liebman. Although restrained and originally designed with a Colonial Revival interior in response to Washington's more conservative architectural milieu, the building responds to architectural tenets of the modern era. The Skyline Inn was the Southwest's first hotel, constructed as a result of the urban renewal project carried out in Southwest Washington between 1945 and 1973.	Eligible per comments from the DC SHPO on September 18, 2014	No Adverse Effect

Note: NRHP = National Register of Historic Places

4.8.2 Archaeological Resources

There are four previously identified archaeological sites within the South Capitol Street Project's Revised APE: Sites 51SE012, 51SE024, 51SE034 (Howard Road Historic District) and 51SE071. However, none are located in areas where construction-related soil disturbance are anticipated. These sites are either located outside the LOD; are deeply buried in historic fill and will not be affected by the Project-related construction activities; or the portion of the site within the LOD has been disturbed by construction from other projects. The Proposed Preferred Alternative will have no effect on previously identified archaeological resources.

Although design changes under the Revised Preferred Alternative will result in modifications to the LOD identified for the FEIS Preferred Alternative, no additional archaeological sites were identified. As a result, there are no effects to previously recorded archaeological sites. The archaeological resources within the LOD were evaluated and the potential to affect previously unidentified archaeological resources is minimal. Therefore, additional archaeological investigation of the LOD is not recommended. The results, contained in the *Draft South Capitol Street Project Section 106 Assessment of Effects for Historic Properties* (DDOT, 2014), was submitted to the DC SHPO for review and comment in August 2014. In correspondence dated September 18, 2014, the DC SHPO concurred with the Project's archaeological assessments

4.8.3 Effects Summary

The Project will have an adverse effect to historic properties due to an adverse effect to the L'Enfant Plan of the City of Washington, DC. The plan's axial grid will be interrupted by the introduction of the west oval. However, the Revised Preferred Alternative will no longer directly impact the Martin Luther King, Jr. Bridge over the Suitland Parkway as was proposed in the FEIS; therefore, the Project will have no adverse effect to the Suitland Parkway.

For other historic properties, construction activities will have minor effects, but will not constitute adverse effects to character-defining features. These effects potentially include the short-term presence of construction equipment and vehicles, and associated noise, rerouted traffic, odors from construction materials, dust, and mud in areas near some historic properties. A detailed assessment of effects to historic properties is presented in the *Draft South Capitol Street Project Section 106 Assessment of Effects for Historic Properties* (DDOT, 2014) that was submitted in early August 2014 to the DC SHPO and consulting parties for review and comment. The revised *South Capitol Street Project Section 106 Assessment of Effects for Historic Properties* (DDOT, 2014) was submitted to the DC SHPO and other consulting parties in November 2014 and is included as Appendix G of this document. In a letter dated December 4, 2014, the DC SHPO concurred with the determination that the L'Enfant Plan of the City of Washington, DC will be the only historic property adversely affected by the Project.

Because the Project's adverse effect determination was maintained, the existing Memorandum of Agreement (MOA) was amended and restated to address the adverse effect to the L'Enfant Plan of the City of Washington, DC, and any other measures developed during consultation with

the DC SHPO, consulting parties, and other signatories. The amended and restated MOA is provided in Appendix G of this document.

There are no archaeological sites within the LOD that are listed in or eligible for listing in the NRHP. Therefore, the Revised Preferred Alternative would have no adverse effects on previously identified archaeological sites. The potential for archaeological impacts within the LOD are minimal and no additional investigations are recommended.

4.8.4 Mitigation

The Memorandum of Agreement Among the Federal Highway Administration, the District of Columbia State Historic Preservation Office, the National Capital Planning Commission, the Advisory Council on Historic Preservation, and the District Department of Transportation, Regarding the South Capitol Street Project within the District of Columbia (MOA) (ACHP et al., 2011) completed during the FEIS phase and executed in 2011 was revised to consider changes introduced by the Revised Preferred Alternative. The DC SHPO and consulting parties were consulted to resolve effects and revise the MOA. Among the changes made, the design review milestones were revised in the Amended and Restated MOA to incorporate a design-build process.

The Amended and Restated Section 106 MOA also contains provisions to address the continued evaluation of potential impacts on archaeological sites during the design phases of the Project. The Amended and Restated MOA addresses potential treatment of unanticipated archaeological sites discovered during construction.

4.9 Visual Quality

4.9.1 Methodology

The FEIS Preferred Alternative and the Revised Preferred Alternative used the same methodology to evaluate visual impacts, based on the FHWA publication V*isual Impact Assessment for Highway Projects* (FHWA, 1981). The methodology calculated a Visual Quality Rating (VQR) based on an average of scoring for the following criteria:

- Vividness – The visual power (or memorability) of the landscape components as they combine in a striking and distinctive visual pattern. Vividness focuses on the features of the landscape.
- Intactness – The visual integrity of the landscape (natural and man-made) and its freedom from encroaching elements. If all the various elements of a landscape seem to “fit” together, there would be a high level of intactness.
- Unity – The visual harmony of the landscape considered as a whole. Unity represents the degree to which the visual elements maintain a coherent visual pattern.

A rating from 1 (very low visual quality) to 7 (very high visual quality) points was assigned to each criterion when evaluating the quality of the visual environment under existing conditions

and the build alternatives. A high rating for a single criterion would not, by itself necessarily lead to high visual quality if the other two criteria had low ratings because an average is calculated of all three criteria.

Visual Quality Differences (VQDs) are determined by comparing the VQRs between the existing conditions, and both the FEIS Preferred Alternative and the Revised Preferred Alternative. If the Revised Preferred Alternative has a higher positive VQD than the FEIS Preferred Alternative, this indicates that the design changes made to the Project will improve or enhance the visual quality of the identified landscape unit above what was documented in the FEIS. If the Revised Preferred Alternative has a lower VQD than the FEIS Preferred Alternative, this indicates that the Revised Preferred Alternative will not improve or enhance the visual quality of the identified landscape unit to the degree documented in the FEIS for the FEIS Preferred Alternative.

4.9.2 Potential Impacts

The visual impacts of the Revised Preferred Alternative are described within the context of the applicable landscape units identified in the FEIS, which include:

- Landscape Unit #1: South Capitol Street
  - Subarea #1: Western end of Frederick Douglass Memorial Bridge to M Street
  - Subarea #2: At M Street
  - Subarea #3: North of M Street
- Landscape Unit #2: Frederick Douglass Memorial Bridge
- Landscape Unit #3: South Capitol Street Southeast
- Landscape Unit #4: Suitland Parkway
- Landscape Unit #5: Howard Road SE
- Landscape Unit #6: Martin Luther King, Jr. Avenue SE
- Landscape Unit #7: Anacostia Park
- Landscape Unit #8: New Jersey Avenue SE

The first phase of the Project (Segments 1 and 2) will be located partially within Landscape Unit #1, Subarea #1 and Landscape Unit #4, and fully within Landscape Units #2, #3 and #7. The second phase of the Project (Segments 3 through 5) will be located fully within Subareas #2 and #3 of Landscape Unit #1, and Landscape Units #6 and #8, and partially located within Landscape Unit #4. No elements of the Revised Preferred Alternative are within Landscape Unit #5.

Table 4-5 summarizes the VQDs comparing existing conditions with the FEIS Preferred Alternative and the Revised Preferred Alternative. The VQRs under existing conditions are the same as that documented in the FEIS. As noted in Section 3.1.1, the overall visual environment of the Project Area, as described by using the landscaped units identified above, were essentially the same since publication of the FEIS. However, some changes in the visual environment did occur since the FEIS, particularly within Landscape Unit #4 due to ongoing development.

Table 4-5: Summary of Visual Quality Evaluation

Landscape Unit/ Subarea	Visual Quality Rating			Visual Quality Difference	
	Existing Conditions	FEIS Preferred Alternative	Revised Preferred Alternative	FEIS Preferred Alternative	Revised Preferred Alternative
#1, Sub 1: South Capitol Street, Bridge to M Street	1	6	6	5	5
#1, Sub 2: South Capitol Street, M Street	1.7	6.7	6.7	5	5
#1, Sub 3: South Capitol Street, North of M Street	2	6.3	6.7	4.3	4.7
#2: Frederick Douglass Bridge	0.83	7	7	6.17	6.17
#3: South Capitol Street SE	0.67	6.3	7	5.7	6.3
#4: Suitland Parkway	2.7	6	6.7	3.3	4
#5: Howard Road SE	4	4	4	0	0
#6: Martin Luther King, Jr. Avenue SE	4.7	4	4.7	-0.7	0
#7: Anacostia Park	3.3	6	6	3.7	3.7
#8: New Jersey Avenue SE	6	6.3	6.3	0.3	0.3

The development of the Revised Preferred Alternative did not change the VQR and VQD scores of the FEIS Preferred Alternative for Landscape Units #1 (Subareas #1 and #2), #2, #5, #7 and #8. The table shows that the Revised Preferred Alternative did not change the conclusions documented in the FEIS that the Project would result in substantially improved visual quality. The specific visual evaluations by landscape unit are provided below.

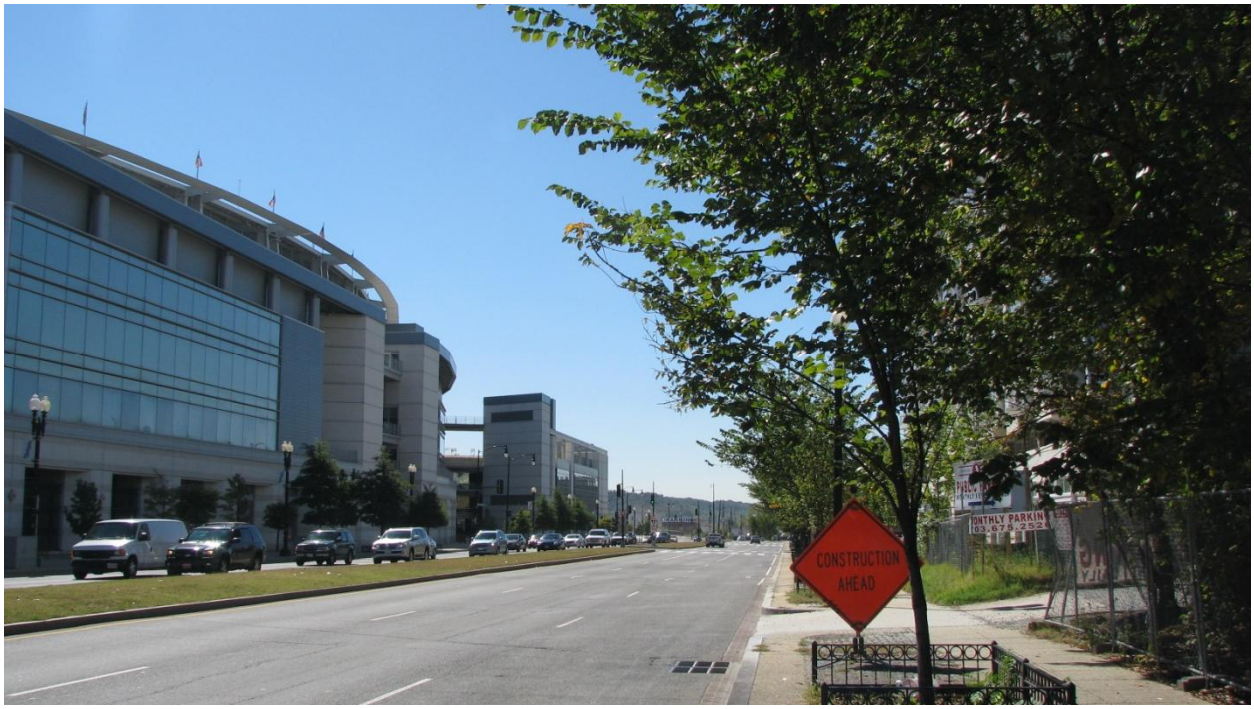
Landscape Unit #1, Subarea #1: South Capitol Street from the Western End of Frederick Douglass Memorial Bridge to M Street

The existing conditions of Landscape Unit #1, Subarea #1 lacks vividness, intactness, and unity and, therefore, was given a very low VQR (see Table 4-6). The visual environment is dominated by the new Nationals Park on the east side of the street, some commercial and residential developments on the west side of the street, and industrial activities beyond the west side of the corridor (see Figure 4-4). Redevelopment activities create disjointed visual scenes between new and old buildings, which should persist for a number of years.

Table 4-6: Visual Quality Evaluation, Landscape Unit #1, Subarea #1

Alternative	Criteria			VQR	VQD
	Vividness	Intactness	Unity		
Existing Conditions	1	1	1	1	NA
FEIS Preferred Alternative	6	6	6	6	5
Revised Preferred Alternative	6	6	6	6	5

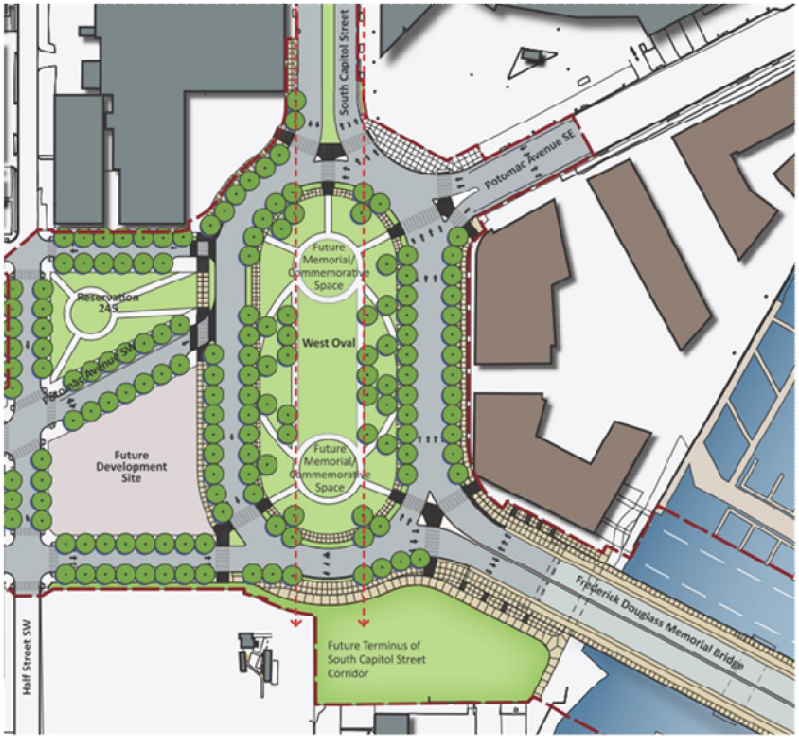
Figure 4-4: View From South Capitol Street on the West End of the Existing Bridge



The FEIS Preferred Alternative included construction of a west traffic oval that would connect South Capitol Street, Potomac Avenue and Q Street. The west traffic oval was the major difference in visual quality between the FEIS Preferred Alternative and the existing conditions within this subarea of Landscape Unit #1. The west traffic oval would create a substantial change to the existing character of the area from industrial land uses to large sections of green space, which resulted in a high VQR. Hard (traffic signals/street lamps) and soft (landscaping) elements were planned for the traffic oval. When coupled with the riverfront park and Nationals Park, the west traffic oval would create spatial relationships between the built and natural environments conducive to non-motorized transportation.

The Revised Preferred Alternative maintained the proposal to create the west traffic oval, but within a slightly smaller area. The form of the west traffic oval will be consistent with L'Enfant's overarching geometric strategy where diagonal intersecting avenues are superimposed on standard urban street grids to create grand viewsheds. The viewsheds will be physically defined as the space between the outermost curbs of streets. As one of the most prominent viewsheds in the District, the preservation of views along the South Capitol Street and Potomac Avenue axes will be paramount in the design of the west traffic oval (see Figure 4-5). Therefore, no trees, signs, or other visual obstructions will be placed within these viewsheds. Keeping the west traffic oval within Landscape Unit #1, Subarea #1 and the incorporation of the visual elements that were developed for this Project kept the high VQR for the Revised Preferred Alternative.

Figure 4-5: Conceptual Plan for the West Traffic Oval



Landscape Unit #1, Subarea #2: South Capitol Street, M Street

Under existing conditions, the VQR of Landscape Unit #1, Subarea #2 is very low (see Table 4-7). The intactness was found to be lacking, and the vividness and unity were only helped by having a view of the U.S. Capitol on the north side of the intersection. In general, the visual character is dominated by the M Street overpass, with the depressed portion of South Capitol Street leading to a disconnect with the surrounding street grid and land uses (see Figure 4-6). The grade-separation of the intersection serves as a visual and psychological barrier for pedestrians and motorists, which discourages interaction and connectivity along South Capitol Street.

Table 4-7: Visual Quality Evaluation, Landscape Unit #1, Subarea #2

Alternative	Criteria			VQR	VQD
	Vividness	Intactness	Unity		
Existing Conditions	2	1	2	1.7	NA
FEIS Preferred Alternative	7	6	7	6.7	5
Revised Preferred Alternative	7	6	7	6.7	5

Figure 4-6: View from South Capitol Street Directly South of the M Street Intersection

The physical changes to the South Capitol Street and M Street intersection under the FEIS Preferred Alternative were evaluated as providing a substantial improvement to the VQR. With an at-grade intersection, along with textures, colors and shapes associated with new street lamps, crosswalks and raised medians, the spatial relationship between South Capitol Street and M Street would be improved, and the street would be substantially more pedestrian friendly. In addition, removal of the bridge and retaining walls would provide clear uninterrupted views of the U.S. Capitol Dome, the Frederick Douglass Memorial Bridge (existing and new), and brief glimpses of the Anacostia River for motorist and pedestrians. These viewshed improvements would provide a high degree of contrast from existing views within this landscape unit, substantially increasing the visual characteristics of vividness, intactness, and unity.

Although the precise lane configuration of the rebuilt South Capitol Street/M Street intersection was changed in the Revised Preferred Alternative, the conversion to an at-grade intersection with accompanying street lamps, crosswalk and raised median will be maintained. It will maintain the visual benefits of providing clear uninterrupted views of important viewsheds. Therefore, the VQR did not change with the development of the Revised Preferred Alternative.

Landscape Unit #1, Subarea #3: South Capitol Street, North of M Street

Under existing conditions, landscape Unit #1, Subarea #3 was evaluated as having a low VQR because of its limited vividness, intactness, and unity along the section of South Capitol Street north of M Street (see Table 4-8). Although the visual environment is dominated by views of the U.S. Capitol Dome, the quality of this view is adversely affected by the presence of the I-695 interchange and the railroad bridge that crosses South Capitol Street. Other visual aspects of the Project Area are its high level of automobile-oriented with large expanses of asphalt, commercial land uses, and limited vegetation (see Figure 4-7). A continuous concrete barrier separates the northbound and southbound travel lanes from M Street north to I Street.

Table 4-8: Visual Quality Evaluation, Landscape Unit #1, Subarea #3

Alternative	Criteria			VQR	VQD
	Vividness	Intactness	Unity		
Existing Conditions	2	2	2	2	NA
FEIS Preferred Alternative	7	6	6	6.3	4.3
Revised Preferred Alternative	7	7	6	6.7	4.7

Figure 4-7: View from South Capitol Street North of M Street Intersection

The FEIS Preferred Alternative was evaluated as having a positive visual influence in Landscape Unit #1, Subarea #3 mainly for removing and replacing the existing ramp to I-695 and for making streetscape modifications to make South Capitol Street into an urban boulevard, including the addition of a landscaped median. These changes would create more efficient sightlines that allow motorists and pedestrians a less encumbered view of the U.S. Capitol

Dome. In addition, the streetscape modifications would improve spatial relationship among the road, various businesses, and the Randal Recreation Center, which are now affected by the I-695 ramps.

The Revised Preferred Alternative would maintain the elements of the FEIS Preferred Alternative on South Capitol Street north of M Street. In keeping with the objective of making South Capitol Street into an urban boulevard, the Revised Preferred Alternative would modify the eastbound I-695 off-ramp into an urban interchange ramp with South Capitol Street, and would add streetscape improvements extending from the I-695 interchange to D Street. It would incorporate the same type of ramp proposed under the FEIS Preferred Alternative for northbound South Capitol Street to westbound Southeast-Southwest Freeway movements. The urban interchange ramp would present a less intrusive element in Landscape Unit #1, Subarea #3 and would improve the positive visual influence, in particular the intactness of the environment by being more conducive to an urban boulevard. Therefore, Revised Preferred Alternative was evaluated has having a VQR slightly higher than the FEIS Preferred Alternative for Landscape Unit #1, Subarea #3.

Landscape Unit #2: Frederick Douglass Memorial Bridge

The visual elements of the existing Frederick Douglass Memorial Bridge landscape unit was found to be sporadic and disjointed, which resulted in very low VQR (see Table 4-9). Pedestrians and cyclists traveling on the bridge have a higher visual experience than motorists based on their slower speed of travel and visual access from the edges of the bridge (see Table 4-9:Visual Quality Evaluation, Landscape Unit #2

Alternative	Criteria			VQR	VQD
	Vividness	Intactness	Unity		
Existing Conditions	1.5	1	0	0.83	NA
FEIS Preferred Alternative	7	7	7	7	6.17
Revised Preferred Alternative	7	7	7	7	6.17

Figure 4-8
). For pedestrians and cyclists, Anacostia River and Park, the Washington Navy Yard, the U.S. Capitol Dome, and the Washington Monument can be seen from the bridge structure. However, these resources are geographically separate and do not combine for one visual experience.

Table 4-9: Visual Quality Evaluation, Landscape Unit #2

Alternative	Criteria			VQR	VQD
	Vividness	Intactness	Unity		
Existing Conditions	1.5	1	0	0.83	NA
FEIS Preferred Alternative	7	7	7	7	6.17
Revised Preferred Alternative	7	7	7	7	6.17

Figure 4-8: View From Frederick Douglas Memorial Bridge

The new bridge of the FEIS Preferred Alternative was envisioned to be a distinctive and architecturally notable structure that enhances the visual setting of the Anacostia River waterfront and the South Capitol Street Corridor. The FEIS Preferred Alternative included an arched bascule design for the bridge, a classical architectural form inherent in other notable bridges in the District, such as the Arlington Memorial Bridge. The bridge would have consisted of a series of long-span, variable-depth box girders.

From an elevated view, these girders would have provided the appearance of a series of graceful, long span arch structures springing from the water surface. The long spans would minimize the number of pier elements in the viewshed of the Anacostia River. To lessen the perception of mass, the eastbound and westbound roadways would be designed as an independent structure, separated by a gap that would provide an avenue of natural light. The double-leaf bascule span would provide an aesthetic continuity, and the curved architectural cladding would be fastened to the bascule to maintain elevation continuity. For these reasons, the new bridge under the FEIS Preferred Alternative was evaluated as greatly improving the visual quality along the Anacostia River (see Table 4-9).

Through the visual quality management process described in Section 2.4, the intention for the new Frederick Douglass Memorial Bridge will be to have a new benchmark for civic design along the entire Anacostia River. To meet this goal, the design requirements for the new bridge may include:

- Create an elegant and iconic new bridge that respects the classical repose of the District's monumental bridges and grounded in the traditions of great civic design in the District

- Create an urban gateway to the city's Monumental Core that celebrates the passage across the river and into the historic street pattern of the District
- Enhance the view and urban vistas throughout the Project Area with emphasis on historic views, views of the new bridge from various locations, views along and across the Anacostia River to enhance broad urban vistas, and new views of the District and public places
- Harmonize the proposed scale and height of the new bridge with planned growth in the surrounding neighborhoods
- Showcase the Anacostia River as a valuable natural resource, including providing enhanced bicycle and pedestrian access on both shorelines
- Create a network of great urban open spaces to introduce high-quality, people-oriented urban parks
- Utilize materials that are timeless in the appearance, exceptionally durable and inspired by the great civic architecture of the District
- Pursue state-of-the-art landscape design that attracts and supports intensive pedestrian activity, as well as integrating best management practices to support sustainable river restoration strategies
- Interpret the cultural legacy of Frederick Douglass into the design of the bridge

For purposes of evaluating the environmental impacts of the Revised Preferred Alternative, a conceptual design plan for the new bridge was developed to illustrate the above design requirements, including having a horizontal alignment parallel to the existing bridge (see Figure 4-9), and reflecting the District of Columbia's tradition of carefully proportioning arched forms in a contemporary structure. As shown on Figure 4-10, the conceptual design illustrates a haunched form with a minimum of 42 feet vertical clearance for navigation. With a bridge that meets these design criteria, the evaulation in the FEIS that the Project will greatly improve the VQR in Landscape Unit #2 will remain valid for the Revised Preferred Alternative.

The process that DDOT is planning to use to solicit proposals for the construction of the new bridge, as described in Section 2.4, would lead to the selection of a design that addresses the requirments noted above. As noted in Section 2.4, the visual quality review process will involve staff from the NCPC, DC SHPO,and the U.S. Commission of Fine Arts to confirm that the selected design proposal meets the visual design requirements of the Project. Therefore, for Landscape Unit #2, the VQR for the Revised Preferred Alternative will remain the same as the VQR for the FEIS Preferred Alternative.

Figure 4-9: Conceptual Design Plan of the New Frederick Douglass Memorial Bridge

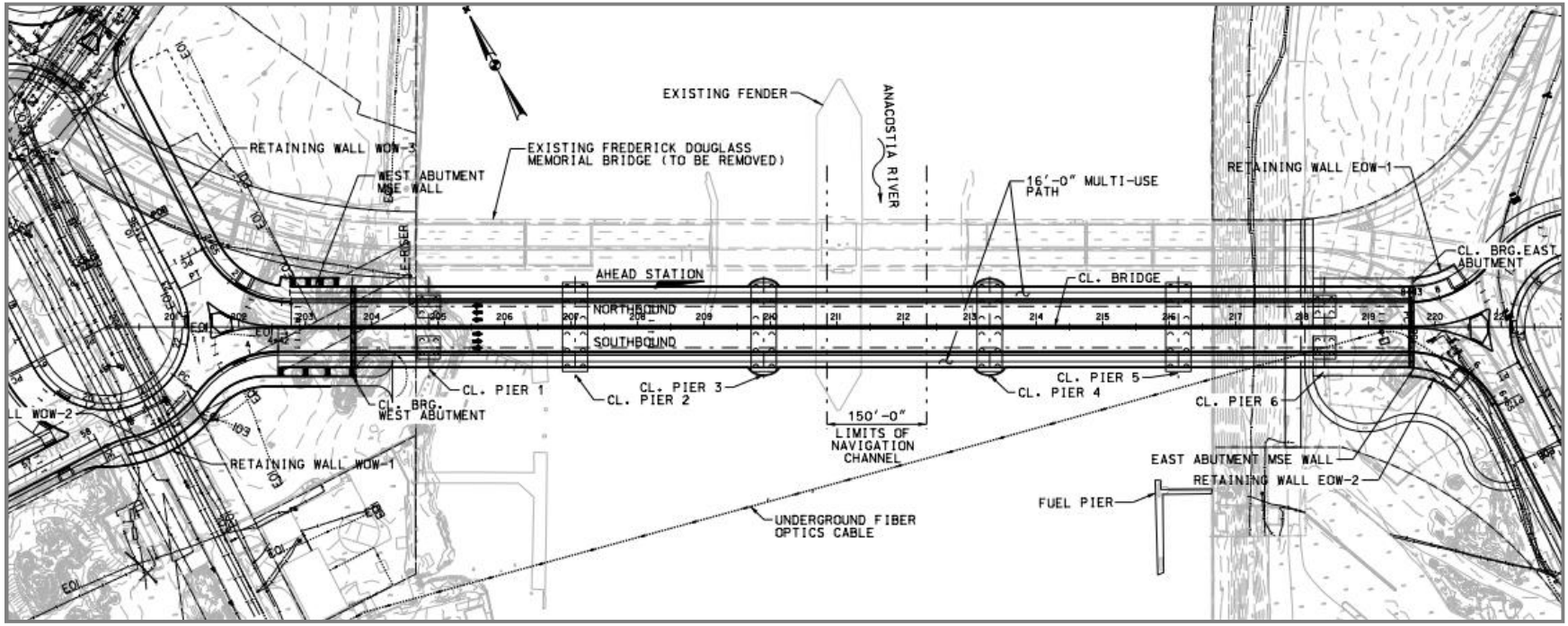


Figure 4-10: Visualization of Haunched Conceptual Design of the the New Frederick Douglass Memorial Bridge

Landscape Unit #3: South Capitol Street Southeast

Landscape Unit #3 encompasses the area of South Capitol Street between east of the Frederick Douglass Memorial Bridge to the new South Capitol Street SE/Suitland Parkway intersection. In general, Landscape Unit #3 lacks visual quality, with the exception of brief sweeping views of the Anacostia River, and fleeting views of the U.S. Capitol and Washington Monument (see Figure 4-11). Visual quality is disrupted by a confusing array of ramps associated with connecting South Capitol Street, Suitland Parkway, and Howard Road SE with the Frederick Douglass Memorial Bridge. Essentially, the visual quality of Landscape Unit #3 is diminished in favor of transportation efficiency (see Table 4-10).

Figure 4-11: View from Poplar Point Pump Station Property Located Between South Capitol Street and Suitland Parkway

Table 4-10: Visual Quality Evaluation, Landscape Unit #3

Alternative	Criteria			VQR	VQD
	Vividness	Intactness	Unity		
Existing Conditions	2	0	0	0.67	NA
FEIS Preferred Alternative	6	7	6	6.3	5.7
Revised Preferred Alternative	7	7	7	7	6.3

Within Landscape Unit #3, the FEIS Preferred Alternative would have provided a high VQD over current conditions. The FEIS Preferred Alternative would have introduced a traffic circle that would connect South Capitol Street, Suitland Parkway, and Howard Road SE. The existing historic DC Water Poplar Point Pumping Station would have been located near the center of the circle. The proposed traffic circle would have included distinct landscape features and serve as an anchor for the new bridge on the east bank of the Anacostia River. The traffic circle would have also eliminated the existing visual encroachments caused by numerous roadways and would have created an intact, ordered visual environment allowing motorists and non-motorists opportunities for unhurried views of natural and manmade features. Therefore, the FEIS Preferred Alternative was evaluated as greatly improving the VQR of Landscape Unit #3 (see Table 4-10).

The Revised Preferred Alternative includes an east traffic oval similar in size, scale and orientation to the traffic oval proposed on the west side of the river (see Figure 4-12). The geometric relationship between both traffic ovals will convey a grand formal streetscape character that blends seamlessly into the urban fabric (see Figure 4-13). The Revised Preferred Alternative will establish consistent aesthetic qualities at the traffic ovals, and provide ample viewing opportunities for motorists.

Figure 4-12: Conceptual Plan of the East Traffic Oval

Figure 4-13: Visualization of East Traffic Oval and Approaches from South Capitol Street and Suitland Parkway

Unlike the west traffic oval, the east traffic oval will have open space outside the formal streetscape. This open space will provide an informal, park-like character that blends with the neighboring Anacostia Park and Suitland Parkway. In addition, the east traffic oval will reduce visual impacts to the historic Poplar Point Pump Station and avoid right-of-way impacts to the JBAB. The east traffic oval's vertical profile and landscaping will be designed to enhance gateway views and sense of arrival for vehicles transitioning from South Capitol Street and Suitland Parkway through the east traffic oval and onto the bridge, and vice versa towards Anacostia. Due to the visual improvements provided by the east traffic oval, compared with the traffic circle under the FEIS Preferred Alternative, the VQD will increase more in Landscape Unit #3 under the Revised Preferred Alternative.

Landscape Unit #4: Suitland Parkway

Landscape Unit #4 extends along Suitland Parkway south from South Capitol Street SE to Stanton Road SE. The visual quality of the Suitland Parkway landscape unit within the segment north of Firth Sterling Avenue SE is severely affected by the presence of the I-295 interchange and numerous ramps for South Capitol Street. This creates a confusing array of choices for motorists, with no real visual integration with the built and natural environments. In contrast, the landscape segment of Suitland Parkway south of Firth Sterling Avenue SE provides a combination of natural forms and man-made elements, such as recent developments that included substantial excavation visible from the parkway (see Figure 4-14). The excavation is a major intrusion that disrupts the visual coherence and compositional harmony of views from Suitland Parkway. This visual disruption was not identified in the FEIS, and therefore, the VQR identified in Table 4-11 for existing conditions is not reflective of this condition. However, the

excavation is temporary and the expectation is that the VQR would return to the FEIS level without the Project. Despite interesting visual patterns, the confusing visual environment in the north segment led to a moderately low VRQ as shown on Table 4-11.

Figure 4-14: View from Suitland Parkway

Table 4-11: Visual Quality Evaluation, Landscape Unit #4

Alternative	Criteria			VQR	VQD
	Vividness	Intactness	Unity		
Existing Conditions	3	3	2	2.7	NA
FEIS Preferred Alternative	6	6	6	6	3.3
Revised Preferred Alternative	6	7	7	6.7	4

The FEIS Preferred Alternative introduced a traffic circle with a recognizable terminus for Suitland Parkway and an effective transition from the parkway to the L'Enfant-inspired city street plan. Other elements of the FEIS Preferred Alternative augmented this transition, and included a new ramp from southbound I-295 to northbound Suitland Parkway and the replacement of the south end cloverleaf ramps with urban diamond ramps. The existing Martin Luther King, Jr. SE overpass would have been reconstructed with a center ramp interchange that would have provided vehicular access to Martin Luther King, Jr. Avenue from the median lanes of Suitland Parkway.

With these design changes, the scale, shape, lines, and texture of views would change with the wider pavement surface and the loss of tree cover. Features introduced in this landscape unit, such as a wider pavement surface and vegetation clearing, would change the scale of existing views. New visual lines would be created by the wider roadway and the addition of an at-grade traffic circle. Clearing existing vegetation, exposing subsurface material, and clearing mature vegetation with younger trees would create new texture. Because of these design elements, the FEIS Preferred Alternative was evaluated as moderately improving the VQR in Landscape Unit #4 as compared to existing conditions.

The primary change to the northern segment of Landscape Unit #4 under the Revised Preferred Alternative, compared with the FEIS Preferred Alternative, is the provision of the east traffic oval. Visually, the Revised Preferred Alternative intends to mark the I-295 interchange with Suitland Parkway as the beginning of the Washington Greenway System that includes as Suitland Parkway. To create the character of a greenway, open spaces within the interchange will be landscaped with trees and native meadow plants.

In the southern segment of Landscape Unit #4, the Martin Luther King, Jr. Avenue SE overpass will be converted to an urban diamond interchange instead of an interchange with median ramps (i.e., single-point urban interchange). The elimination of the center ramp avoids altering the Martin Luther King, Jr. Avenue SE Bridge over Suitland Parkway, and the intactness and unity of the views along the parkway will remain unchanged. In addition, the provision and upgrade of a pedestrian/bicycle path along the north side of the reconstructed Suitland Parkway will provide new viewing opportunities for pedestrians and cyclists. These design changes led to a slight improvement in the VQR in landscape Unit #4 for the Revised Preferred Alternative, compared with the FEIS Preferred Alternative.

The provision of a sidewalk/bicycle path along the north side of the reconstructed Suitland Parkway will provide new viewing opportunities for pedestrians and cyclists. These design changes led to a slight improvement in the VQR in landscape Unit #4 for the Revised Preferred Alternative compared with the FEIS Preferred Alternative.

Landscape Unit #5: Howard Road SE

Although the Howard Road SE landscape unit was included in the FEIS, the FEIS Preferred Alternative did not propose any changes to the street. The Revised Preferred Alternative also does not propose changes. This landscape unit extends northwest from Bowen Road SE to just northwest of Martin Luther King, Jr. Avenue. There is a connection among the existing mature vegetation, residential development, and the narrow roads and older hillside multi-family residences that permeate the southeast section of Howard Road SE. The homes are sited to take full advantage of surrounding views, including a view of the Washington Monument.

Landscape Unit #6: Martin Luther King, Jr. Avenue SE

Landscape Unit #6 extends between Howard Road SE and Suitland Parkway on Martin Luther King, Jr. Avenue. This landscape unit has a good VQR of 4.7 (see Table 4-12). Currently, natural and built elements are designed and addressed in an integrated manner (see Figure 4-15). The

relationship of the landscape is a combination of natural forms, subdued man-made elements, and a lack of intrusive elements that do not contribute to the overall composition.

Table 4-12: Visual Quality Evaluation, Landscape Unit #6

Alternative	Criteria			VQR	VQD
	Vividness	Intactness	Unity		
Existing Conditions	4	5	5	4.7	NA
FEIS Preferred Alternative	4	4	4	4	-0.7
Revised Preferred Alternative	4	5	5	4.7	0

Figure 4-15: View from Howard Road SE Between Howard Road SE and Suitland Parkway

The FEIS Preferred Alternative would have added a center-ramp interchange at Suitland Parkway and Martin Luther King, Jr. Avenue SE. The interchange would have introduced a new structure leading to a slight decrease in visual intactness and unity in the Project Area. The primary viewers of these changes would include pedestrians, cyclists, and motorists on Martin Luther King, Jr. Avenue and Suitland Parkway; parishioners and visitors at Campbell AME Church and Matthews Memorial Baptist Church; staff, students, and visitors to Birney Elementary School; and residents of the area, especially those residing on the bluff along Bowen Road SE and adjacent streets.

As noted above, the Revised Preferred Alternative will convert the Martin Luther King, Jr. Avenue SE overpass to an urban diamond interchange instead of an interchange with median ramps. The Martin Luther King Jr. overpass will not have to be altered, and the intactness and unity of the views along the parkway will remain unchanged. Therefore, the VQR for the Revised Preferred Alternative remained the same when compared to existing conditions.

Landscape Unit #7: Anacostia Park

As a landscape unit, Anacostia Park can be viewed from Landscape Units #1 and #2. The characteristics of vividness, intactness, and unity are evident in the park. The views of both Anacostia Drive and the landscape surrounding Anacostia Park are memorable. However, construction activities associated with redevelopment across the river are intruding upon unique views. Currently, numerous cranes are visible on the horizon above the shoreline vegetation, which negatively affects the sweeping views of the Anacostia River. Nevertheless, these features are temporary and would be less frequent from the views when the redevelopment is completed. Additionally, the existing Frederick Douglass Memorial Bridge creates a disruptive visual influence, substantially decreasing the intactness and unity of the views (see Figure 4-16). The hard vertical lines of the substructure and the fading green paint of the superstructure detract from views of the shoreline. A moderate VQR value of 3.3 was assigned to Landscape Unit #7 (see Table 4-13).

Figure 4-16: View of Frederick Douglass Memorial Bridge from Anacostia Park

Table 4-13: Visual Quality Evaluation, Landscape Unit #7

Alternative	Criteria			VQR	VQD
	Vividness	Intactness	Unity		
Existing Conditions	4	1	2	3.3	NA
FEIS Preferred Alternative	6	6	6	6	3.7
Revised Preferred Alternative	6	6	6	6	3.7

Under the FEIS Preferred Alternative, views from Landscape Unit #7 would consist of uninterrupted and coordinated views of Nationals Park, Anacostia Park, and the new Frederick Douglass Memorial Bridge (see Landscape Unit #2 description), and brief glimpses of the Washington Monument, the U.S. Capitol Dome, and the Anacostia waterfront. The primary viewers of these changes would include park visitors and riverfront trail users.

Construction of the new Frederick Douglass Memorial Bridge, elimination of an encroachment, and removal of the pavement surface of the numerous ramps and access points associated with South Capitol Street SE and Suitland Parkway (see Landscape Unit #3 description) would increase open space along the river and provide a positive visual impact for this landscape unit. Therefore, the VQR was raised under the FEIS Preferred Alternative (see Table 4-13). Views of the redesigned Frederick Douglass Memorial Bridge and the Anacostia River and waterfront would introduce new lines and textures, which would integrate the natural and built environments.

With the Revised Preferred Alternative, the new Frederick Douglass Memorial Bridge (see Landscape Unit #2 discussion), along with the other visual improvements noted in the description of Landscape Unit #3, a positive visual impact for Landscape Unit #7 is expected. The VQR did not change with development of the Revised Preferred Atlernative from what was evaluated under FEIS Preferred Alternative (see Table 4-13).

Landscape Unit #8: New Jersey Avenue SE

Along New Jersey Avenue SE, Landscape Unit #8 extends from Independence Avenue SE to M Street SE. Landscape Unit #8 was evaluated as having a high VQR due to a neighborhood feel, intimate dimensions, and an overarching canopy of mature oaks (see Figure 4-17 and Table 4-14). Views northwest on New Jersey Avenue provides a striking view of the U.S. Capitol Dome framed by the natural tree canopy and built forms north of the I-695 Freeway. However, the I-695 and adjacent railroad bridges disrupt the visual continuity along the south side of the freeway, reducing the overall quality of the view. The relationship of the characteristics of vividness, intactness, and unity is high, as the landscape is a combination of striking natural forms, subdued man-made elements, and a lack of intrusive elements that do not contribute to the overall composition.

Figure 4-17: View From New Jersey Avenue SE

Table 4-14: Visual Quality Evaluation, Landscape Unit #8

Alternative	Criteria			VQR	VQD
	Vividness	Intactness	Unity		
Existing Conditions	6	6	6	6	NA
FEIS Preferred Alternative	7	6	6	6.3	0.3
Revised Preferred Alternative	7	6	6	6.3	0.3

The FEIS Preferred Alternative would provide additional street trees, sidewalk pavement, and hard and soft landscape features. Improvements associated with increasing pedestrian safety would provide new textures and colors promoting the continued integration of the built and natural environments, which were evaluated to slightly increase the VQR (see Table 4-14). No changes were made to the Project, for New Jersey Avenue SE, as a result of the development of the Revised Preferred Alternative. Therefore, the VQR will remain the same as what was evaluated for the FEIS Preferred Alternative.

Findings

The Revised Preferred Alternative, and the framework for approaching the urban design and visual quality and aesthetic design of the Project, did not substantially alter the visual assessment provided in the FEIS. Therefore, the conclusion documented in the FEIS, that the Project will result in substantially improved visual quality of the Project Area, remains valid for the Revised Preferred Alternative.

4.9.3 Mitigation

As described in Section 2.4, DDOT is planning to use a visual quality management process to evaluate design proposals for the various segments of the Project. To support this process, DDOT plans to prepare a visual quality manual for the Project. Visual quality designs submitted by prospective designer/contractors will undergo review and comment by DDOT, assisted by staff from the NCPC, CFA, and DC SHPO. This visual quality management process, as described in Section 2.4, will confirm that the technical proposals by the prospective designer/contractors meet the visual design goals for the Project.

NCPC is the federal government's central planning agency for federal land and buildings in the National Capitol Region. NCPC's jurisdiction covers 2,500 square miles, including the District and surrounding counties in Maryland and Virginia. NCPC develops planning policies and makes decisions that protect and enhance the extraordinary historical, cultural, and natural resources of the nation's capital. Through four principal activities (urban design and plan review, comprehensive planning, signature planning, and federal project planning review and prioritization of federal development projects), NCPC helps preserve the visual integrity of the District. Federal and District agencies are required to obtain NCPC urban design and plan review approval and/or comments prior to proceeding with development projects in the National Capital Region. Coordination with NCPC has been undertaken throughout the Project, such as in the development of the visual quality management process, and would continue through the visual quality management process. Plans would be submitted to NCPC for staff and commission review at various percent completion stages.

CFA is charged with providing expert advice to the President, Congress, and the heads of departments of agencies of the Federal and District of Columbia governments on matters of design and aesthetics as they affect the Federal interest and preserve the dignity of the nation's capital. In addition to CFA's participation in visual review committee, plans for the other elements of the Project would be presented to CFA in accordance with its requirements.

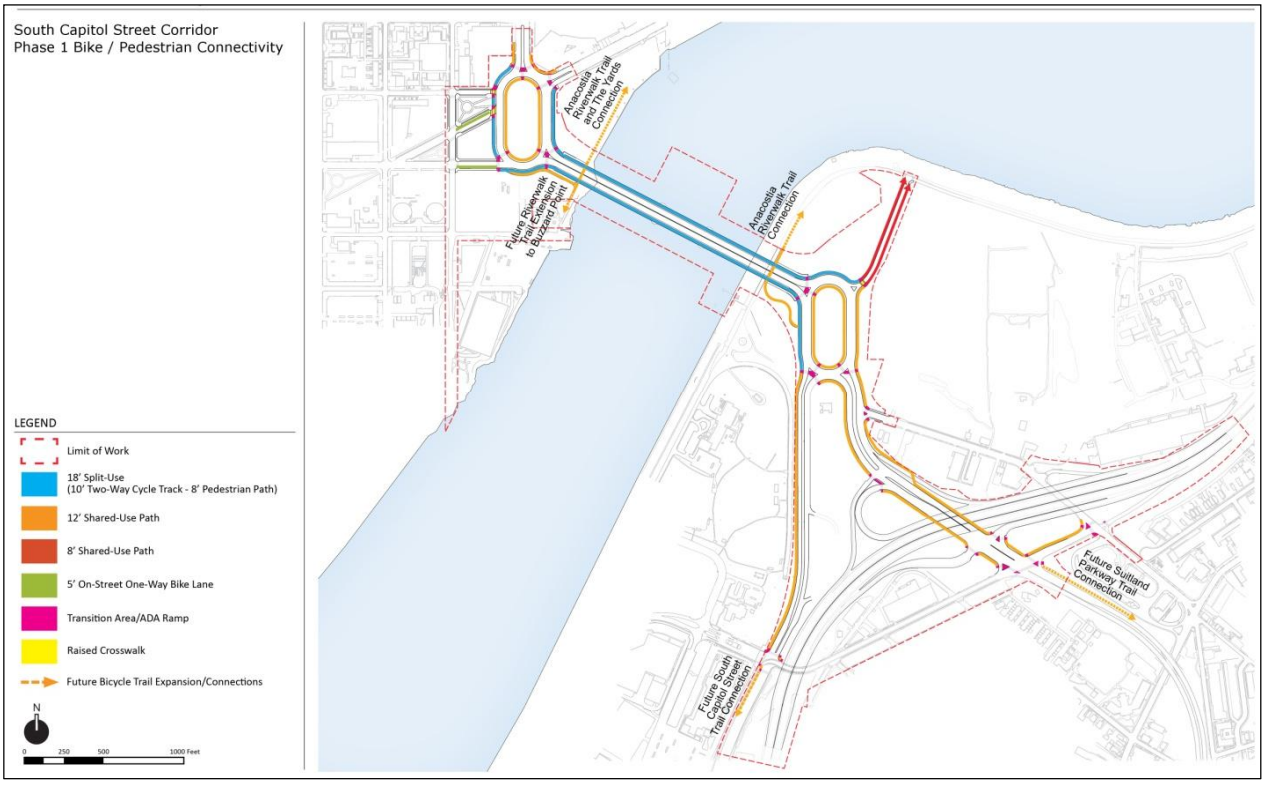
Under the proposed terms of the Amended and Restated Section 106 MOA (see Appendix G), design plans would be subject to review by the MOA signatories and consulting parties. The visual impacts on important visual resources, and minimization/mitigation measures would be addressed through these reviews.

4.10 Pedestrian and Bicycle Facilities

4.10.1 Impacts

Table 4-15 lists the effects of the Revised Preferred Alternative and the FEIS Preferred Alternative on pedestrian and bicycle facilities. Figure 4-18 shows the proposed bike and pedestrian facilities that will be located at both traffic ovals and the Suitland Parkway/I-695 interchange.

Figure 4-18: Bike and Pedestrian Facilities at Proposed Traffic Ovals and Suitland Parkway/ I-695 Interchange



4.10.2 Mitigation

No mitigation measures are required.

Table 4-15: Pedestrian and Bicycle Facilities Design Differences between the FEIS Preferred Alternative and the Revised Preferred Alternative

Roadway	Limits	FEIS Preferred Alternative	Revised Preferred Alternative
South Capitol Street	Frederick Douglass Memorial Bridge	Accommodates 20-foot-wide bicycle/pedestrian paths on both sides of the vehicular travels lanes on the bridge.	Accommodates 18-foot-wide bicycle/pedestrian paths on both sides of the vehicular travels lanes on the bridge.
South Capitol Street	I-695	The ramp carrying northbound South Capitol Street traffic to westbound I-695 would be removed and replaced with an urban interchange ramp from South Capitol Street, while the ramp configuration from eastbound I-695 to southbound South Capitol Street will remain.	Both existing ramp configurations between I-695 and South Capitol Street will be replaced with an urban interchange, creating a safer interchange configuration for cyclists and pedestrians.
Suitland Parkway	I-295	An urban diamond interchange would be implemented that would allow all movements between Suitland Parkway and I-295.	On the southern side of Suitland Parkway, the configuration would accommodate a sidewalk and bicycle path. A grade separated pedestrian/bicycle path would be provided at Ramp B.
South Capitol Street	Suitland Parkway	The existing ramps would be replaced with a traffic circle, allowing pedestrian and bicycle travel between South Capitol Street and Howard Road. A sidewalk would be installed along the outside of the circle where none exists today. The pedestrian travel distance around the circle would be greater than traveling through the traditional at-grade intersection.	The proposed traffic circle would be replaced by a traffic oval, providing a sidewalk around the oval, and a connection with a section of the Anacostia Riverwalk Trail. The pedestrian travel distance around the oval would still be greater than traveling through the traditional at-grade intersection.
Suitland Parkway	Martin Luther King, Jr. Avenue	The proposed interchange at Suitland Parkway would require pedestrians and cyclists to cross the ramps between the two roadways. These crossings would be controlled by a traffic signal.	The elimination of the center ramp interchange will provide two urban diamond interchanges that will be controlled by traffic signal. In addition, a sidewalk/bicycle path would be provided or upgraded along the north side of the reconstructed Suitland Parkway.
South Capitol Street Trail	Anacostia Metrorail Station	The Firth Sterling Trail was not included as part of the FEIS.	The proposed multi-use Firth Sterling Trail will use primarily existing CSX right-of-way and connect the South Capitol Street Trail (at Firth Sterling and South Capitol Street intersection) with the Anacostia Metrorail Station.

4.11 Traffic and Transportation

This section summarizes the updated assessment of future travel patterns, traffic volumes, and operational performance for the Revised Preferred Alternative and the FEIS Preferred Alternative. The traffic analysis used 2010 as the base year for assessing the alternatives. The traffic analysis assumed 2020 as the projected year of opening after full Project completion, and 2040 as the design year, for both the Revised Preferred Alternative and the FEIS Preferred Alternative. The objective of the updated traffic analysis was to evaluate whether the Revised Preferred Alternative would deteriorate traffic operations along the roadway network within the Project Area, compared with existing conditions. The *South Capitol Street Transportation Technical Report* (DDOT, 2014) provides detailed information regarding traffic and transportation assessments (see Appendix H).

4.11.1 Traffic Forecast Methodology

MWCOG updated the regional travel demand models to establish new traffic horizon years. The FEIS presented traffic impact predictions for the year 2030, consistent with MWCOG regional travel demand models available at that time. The current MWCOG travel demand model contains a 2040 horizon year. A revised traffic analysis was prepared for both the Revised Preferred Alternative and the FEIS Preferred Alternative using MWCOG's updated travel demand models. The *South Capitol Street Transportation Technical Report* (DDOT, 2014) contains detailed descriptions of the methodologies used to evaluate the impacts on traffic operations for the Revised Preferred Alternative and the FEIS Preferred Alternative. The following section summarizes the methodology used for travel demand forecasts.

The analysis used Version 2.2 of the MWCOG regional travel demand model to update the travel demand forecasts. The model generated traffic volumes for existing conditions and the analysis compared them with recently observed traffic counts. The result highlighted the need for adjustments in the methodology. The MWCOG regional land use forecasts were used to project traffic conditions in 2020 and 2040 for both the FEIS Preferred Alternative and the Revised Preferred Alternative. The model's roadway network included the transportation improvements in MWCOG's updated *Constrained Long Range Plan* (2013), which included the DC Streetcar system in the Anacostia area, the Martin Luther King, Jr. Avenue Great Streets Improvements, and the 11th Street Bridges.

The future year forecasts considered the amount of traffic associated with projects planned in the general vicinity of the Project Area. These projects included:

- The Barry Farm/Park Chester/Wade Road redevelopment
- The consolidation of military operations in JBAB
- The Poplar Point redevelopment
- The Sheridan Station residential development
- The establishment of DHS headquarters at the St. Elizabeths Campus

The travel demand forecasting for both the Revised Preferred Alternative and the FEIS Preferred Alternative used data from traffic modeling conducted for the St. Elizabeths Campus FEIS. A number of localized project-level refinements were made to the base MWCOG network model to improve model performance and to accurately reflect the network configuration.

Synchro and VISSIM traffic operational models supported the analysis of traffic impacts for the FEIS Preferred Alternative and the Revised Preferred Alternative. Synchro is a macroscopic analysis and optimization software application that supports the *2010 Highway Capacity Manual* methodology for signalized intersections and roundabouts. The Synchro model included all of the roadways and intersections analyzed for the FEIS. The analysis used the Synchro model to optimize the arterial traffic signals in the Project Area. After completing signal-timing optimization, the analysis exported the resulting traffic signal data and network configurations to the VISSIM traffic simulation model.

A VISSIM traffic micro-simulation model evaluated the impacts of the Revised Preferred Alternative and the FEIS Preferred Alternative on arterial and intersection operations, along with freeway mainline, weaving, and merging operations along I-295, I-395, and I-695. VISSIM allows for detailed network coding and routing decisions, which are critical when calibrating a transportation network to congested conditions such as those that exist within the Project Area. The FEIS used two overlapping VISSIM models: one focused on roadways east of the Anacostia River and the other focused on roadways west of the Anacostia River. The updated traffic analysis is summarized in this section, which combined these two models into one large micro-simulation model of the Project Area.

4.11.2 Impacts on Travel Patterns and Volumes

The updated traffic analysis for the 2020 and 2040 horizon years for both the Revised Preferred Alternative and the FEIS Preferred Alternative forecasts substantial changes in travel patterns. The changes reflect new roadway connections associated with other projects, land use redevelopments, and modal shifts away from personal vehicles. The roadway configurations for the Revised Preferred Alternative and the FEIS Preferred Alternative are similar to the extent that the configurations will not affect overall traffic volumes. Both will have the same 2020 and 2040 average daily traffic (ADT) volumes.

The new Frederick Douglass Memorial Bridge under both the Revised Preferred Alternative and the FEIS Preferred Alternative will cause greater ADT volumes, compared with the No Build. Under the No Build, the southbound ADT volumes on the existing bridge are predicted to increase by approximately 16 percent between 2010 and the 2040. The additional capacity provided by the new southbound lane (three total lanes) on the bridge with the Revised Preferred Alternative and the FEIS Preferred Alternative will increase southbound ADT volumes by 44 percent between 2010 and 2040. This is 24 percent greater than the 2040 No Build.

Because the Revised Preferred Alternative and the FEIS Preferred Alternative will not increase northbound capacity, the predicted northbound ADT volumes in 2040 will be about 4.5 percent greater than the 2040 No Build. Both alternatives will increase ADT volumes between 2010 and

2040 along roadways in the Project Area where higher density development will occur. These areas include South Capitol Street between the Southeast-Southwest Freeway and N Street, and the roads serving the St. Elizabeths Campus and JBAB.

The analysis estimated the network-wide average for truck volumes to be approximately 6 percent of ADT in 2030 in 2040 for both the Revised Preferred Alternative and the FEIS Preferred Alternative.

Some locations within the roadway network will have higher morning and evening peak hour volumes. The lower morning and evening peak hour volumes under the Revised Preferred Alternative, compared with the FEIS Preferred Alternative, reflect the different turning lane configurations for the largest intersection in the network, South Capitol Street at M Street. This affected the amount of traffic that will pass through the intersection within an hour. As a result, some traffic will divert to parallel routes or disperse more evenly throughout the morning and evening peak periods.

4.11.3 Intersection Level of Service

Predicted morning and evening peak hour volumes in 2020 and 2040 for both the Revised Preferred Alternative and the FEIS Preferred Alternative highlighted LOS and queuing at individual intersections. LOS is a qualitative measure describing the operational conditions along a roadway or at an intersection. The LOS of a roadway or intersection falls into one of six categories identified as “A” through “F”. LOS A represents free-flowing traffic operations and LOS F represents stop-and-go traffic conditions. In an urban area, such as the District of Columbia, a roadway or intersection operating at or better than LOS D typically is considered acceptable. Accordingly, a roadway or intersection operating at LOS E and F reflect unacceptable levels of congestion.

To characterize the local street system and highlight potential differences between the Revised Preferred Alternative and the FEIS Preferred Alternative, key locations throughout the Project Area were selected for evaluation (see Figure 4-19).

Revised Preferred Alternative

Table 4-17 and Table 4-18 summarize predicted average delay (in seconds per vehicle) and the corresponding LOS in 2020 and 2040 at these key locations for both the Revised Preferred Alternative. The following intersections will operate at LOS E or F during the morning peak hour in 2020 under the Revised Preferred Alternative:

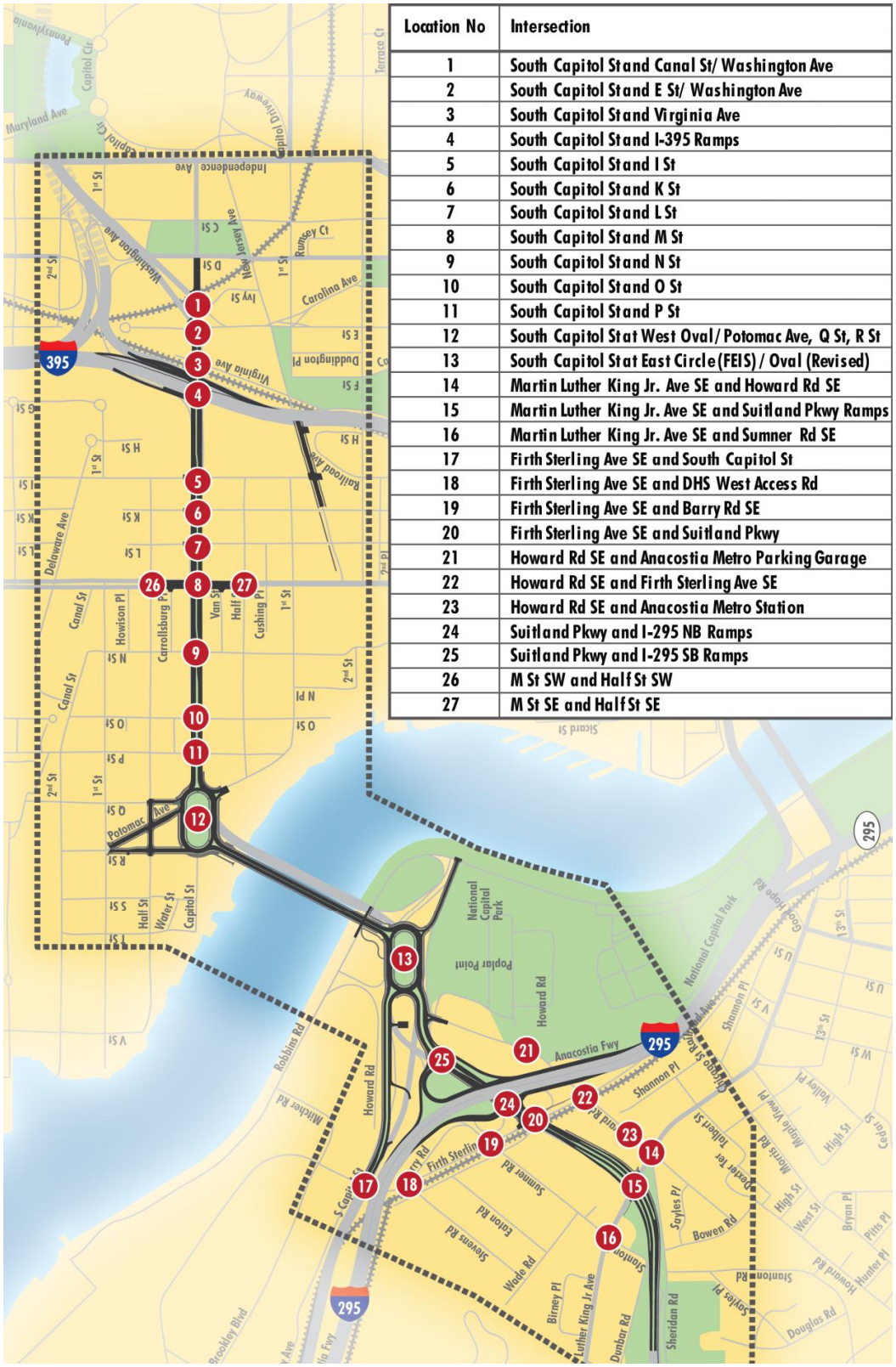
- Firth Sterling Avenue SE at South Capitol Street (LOS E)
- Firth Sterling Avenue SE at DHS West Access Road (LOS E)
- M Street SE at Half Street SE (LOS F)

Table 4-16: Comparison of 2040 Average Peak Hour Traffic Volumes

Segments in the Project Area	Existing (2010)		FEIS Preferred Alternative		Revised Preferred Alternative	
	Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour
South Capitol Street Southbound						
I-395 SB ramp to SB South Capitol Street	610	450	705	605	700	600
I-395 EB (NB) ramp to SB South Capitol Street	900	510	1,155	510	975	520
SB South Capitol Street South of I Street	1,875	2,325	2,290	3,040	2,065	2,475
SB South Capitol Street South of N Street	1,650	2,640	2,205	2,835	2,205	2,675
SB Frederick Douglass Memorial Bridge	1,720	3,930	2,345	4,820	2,320	4,300
Suitland Parkway South of Martin Luther King, Jr. Avenue	1,085	2,795	850	3,155	800	2,970
SB South Capitol Street South of Suitland Parkway	630	1,105	940	1,765	895	1,595
SB South Capitol Street ramp to SB Suitland Parkway	1,090	2,825	1,315	2,960	1,385	2,715
South Capitol Street Northbound						
Suitland Parkway south of Martin Luther King, Jr. Avenue	2,755	1,210	3,120	1,065	3,000	1,110
NB South Capitol Street South of Suitland Parkway	740	380	1,650	810	1,500	815
Howard Road Ramp to NB South Capitol Street	1,080	540	510	480	465	390
NB Frederick Douglass Bridge	4,345	1,330	4,755	2,375	4,200	2,425
NB South Capitol Street South of N Street	3,785	1,505	3,730	1,925	3,125	1,900
NB South Capitol Street South of I Street	2,845	1,260	2,880	1,550	2,950	1,775
NB South Capitol Street to NB I-395	1,430	600	1,490	565	1,140	600
NB South Capitol Street to WB Southeast-Southwest Freeway	840	695	720	720	1,180	715
I-295 at Suitland Parkway						
Northbound	6,220	4,685	6,515	5,915	6,145	4,255
Southbound	4,550	5,910	4,030	6,305	3,275	6,440
Southeast-Southwest Freeway East of South Capitol Street						
Northbound (Westbound)	7,235	4,495	7,655	6,885	7,050	5,605
Southbound (Eastbound)	4,005	5,180	5,790	8,590	4,475	7,640
11th Street Bridge (Local)						
Northbound	-	-	1,950	685	2,200	1,190
Southbound	-	-	245	2,855	320	2,320
11th Street Bridge I-695						
Northbound	5,230	2,650	7,950	5,835	4,700	4,280
Southbound	1,920	3,505	4,100	7,395	3,520	5,550

Notes: NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

Figure 4-19: Project Area Intersections for Traffic Analysis



Location No	Intersection
1	South Capitol Stand Canal St/ Washington Ave
2	South Capitol Stand E St/ Washington Ave
3	South Capitol Stand Virginia Ave
4	South Capitol Stand I-395 Ramps
5	South Capitol Stand I St
6	South Capitol Stand K St
7	South Capitol Stand L St
8	South Capitol Stand M St
9	South Capitol Stand N St
10	South Capitol Stand O St
11	South Capitol Stand P St
12	South Capitol Stat West Oval/ Potomac Ave, Q St, R St
13	South Capitol Stat East Circle (FEIS) / Oval (Revised)
14	Martin Luther King Jr. Ave SE and Howard Rd SE
15	Martin Luther King Jr. Ave SE and Suitland Pkwy Ramps
16	Martin Luther King Jr. Ave SE and Sumner Rd SE
17	Firth Sterling Ave SE and South Capitol St
18	Firth Sterling Ave SE and DHS West Access Rd
19	Firth Sterling Ave SE and Barry Rd SE
20	Firth Sterling Ave SE and Suitland Pkwy
21	Howard Rd SE and Anacostia Metro Parking Garage
22	Howard Rd SE and Firth Sterling Ave SE
23	Howard Rd SE and Anacostia Metro Station
24	Suitland Pkwy and I-295 NB Ramps
25	Suitland Pkwy and I-295 SB Ramps
26	M St SW and Half St SW
27	M St SE and Half St SE

Table 4-17: 2020 Average Delay per Vehicle and Level of Service (LOS) at Project Area Intersections

Intersection	Location No.[1]	FEIS Preferred Alternative				Revised Preferred Alternative			
		2020 Morning Peak Hour		2020 Evening Peak Hour		2020 Morning Peak Hour		2020 Evening Peak Hour	
		Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
South Capitol St and Canal St/Washington Ave	1	23	C	19	B	23	C	28	C
South Capitol St and E St/Washington Ave	2	21	C	153	F	26	C	46	D
South Capitol St and Virginia Ave	3	8	A	84	F	11	B	20	C
South Capitol St and I-395 ramps	4	23	C	87	F	21	C	26	C
South Capitol St and I St	5	33	C	37	D	26	C	24	C
South Capitol St and K St	6	17	B	17	B	20	C	12	B
South Capitol St and L St	7	18	B	32	C	26	C	16	B
South Capitol St and M St	8	43	D	41	D	53	D	45	D
South Capitol St and N St	9	33	C	8	A	31	C	41	D
South Capitol St and O St	10	12	B	6	A	9	A	30	C
South Capitol St and P St	11	9	A	7	A	10	B	27	C
South Capitol St at West Traffic Oval/Potomac Ave, Q St, R St	12	104	F	56	E	32	C	60	E
South Capitol St at East Circle (FEIS)/Oval (Revised)	13	118	F	64	E	35	D	68	E
Martin Luther King, Jr. Ave SE and Howard Rd SE	14	24	C	58	E	35	D	36	D
Martin Luther King, Jr. Ave SE and Suitland Pkwy ramps	15	59	E	23	C	47	D	38	D
Martin Luther King, Jr. Ave SE and Sumner Rd SE	16	114	F	28	C	34	C	27	C
Firth Sterling Ave SE and South Capitol St	17	223	F	62	E	65	E	58	E
Firth Sterling Ave SE and DHS West Access Rd	18	44	D	51	D	62	E	44	D
Firth Sterling Ave SE and Barry Rd SE	19	3	A	36	D	18	B	92	F
Firth Sterling Ave SE and Suitland Pkwy	20	50	D	30	C	53	D	30	C
Howard Rd SE and Anacostia Metrorail Parking Garage	21	6	A	9	A	6	A	12	B
Howard Rd SE and Firth Sterling Ave SE	22	34	C	30	C	29	C	57	E
Howard Rd SE and Anacostia Metrorail Station	23	8	A	14	B	13	B	42	D
Suitland Pkwy and I-295 northbound ramps	24	51	D	28	C	21	C	38	D
Suitland Pkwy and I-295 southbound ramps	25	78	E	23	C	14	B	56	E
M St SW and Half St SW	26	13	B	12	B	32	C	37	D
M St SE and Half St SE	27	18	B	11	B	122	F	5	A

Source: VISSIM modeling by CH2M HILL, 2014
Notes: [1] See Figure 4-6
[2] Seconds per vehicle
Yellow shaded areas identify intersections predicted to have unacceptable (E) or failing (F) levels-of-service

Table 4-18: 2040 Average Delay per Vehicle and Level of Service (LOS) at Project Area Intersections

Intersection	Location No.[1]	FEIS Preferred Alternative				Revised Preferred Alternative			
		2040 Morning Peak Hour		2040 Evening Peak Hour		2040 Morning Peak Hour		2040 Evening Peak Hour	
		Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
South Capitol St and Canal St/Washington Ave	1	25	C	20	B	50	D	29	C
South Capitol St and E St/Washington Ave	2	20	C	143	F	24	C	73	E
South Capitol St and Virginia Ave	3	9	A	78	E	14	B	24	C
South Capitol St and I-395 ramps	4	34	C	84	F	14	B	38	D
South Capitol St and I St	5	36	D	36	D	19	B	48	D
South Capitol St and K St	6	20	C	19	B	12	B	17	B
South Capitol St and L St	7	20	C	29	C	16	B	24	C
South Capitol St and M St	8	46	D	48	D	38	D	49	D
South Capitol St and N St	9	37	D	10	B	23	C	22	C
South Capitol St and O St	10	14	B	9	A	10	B	18	B
South Capitol St and P St	11	18	B	9	A	13	B	18	B
South Capitol St at West Traffic Oval/Potomac Ave, Q St, R St	12	106	F	70	E	33	C	35	D
South Capitol St at East Circle (FEIS)/Oval (Revised)	13	142	F	71	E	40	D	65	E
Martin Luther King, Jr. Ave SE and Howard Rd SE	14	36	D	64	E	40	D	39	D
Martin Luther King, Jr. Ave SE and Suitland Pkwy Ramps	15	52	D	27	C	49	D	38	D
Martin Luther King, Jr. Ave SE and Sumner Rd SE	16	129	F	41	D	58	E	37	D
Firth Sterling Ave SE and South Capitol St	17	248	F	61	E	101	F	62	E
Firth Sterling Ave SE and DHS West Access Rd	18	46	D	65	E	64	E	58	E
Firth Sterling Ave SE and Barry Rd SE	19	6	A	41	D	26	C	38	D
Firth Sterling Ave SE and Suitland Pkwy	20	42	D	40	D	52	D	36	D
Howard Rd SE and Anacostia Metrorail Parking Garage	21	6	A	25	C	6	A	19	B
Howard Rd SE and Firth Sterling Ave SE	22	38	D	77	E	30	C	83	F
Howard Rd SE and Anacostia Metrorail Station	23	13	B	90	F	14	B	46	D
Suitland Pkwy and I-295 northbound ramps	24	30	C	28	C	24	C	44	D
Suitland Pkwy and I-295 southbound ramps	25	60	E	22	C	18	B	69	E
M St SW and Half St SW	26	15	B	12	B	29	C	91	F
M St SE and Half St SE	27	18	B	28	C	33	C	6	A

Source: VISSIM modeling by CH2M HILL, 2014
Notes: [1] See Figure 4-6
[2] Seconds per vehicle
Yellow shaded areas identify intersections predicted to have unacceptable (E) or failing (F) levels-of-service

Compared to the FEIS Preferred Alternative, four fewer intersections will operate at LOS E or F during the morning peak hour in 2020 within the Project Area. Although the Firth Sterling Avenue SE/South Capitol Street intersection is still predicted to operate poorly (LOS E), average delay is predicted to be substantially less under the Revised Preferred Alternative than under the FEIS Preferred Alternative.

The highest average delay among the three intersections will occur at the intersection of M Street SE and Half Street SE. At 122 seconds per vehicle during the morning peak hour, this predicted delay is nearly seven times the predicted delay under the FEIS Preferred Alternative. The poor operating condition at this intersection under the Revised Preferred Alternative, compared with the FEIS Preferred Alternative, reflects adjustments to lane configurations at the intersection of South Capitol Street and M Street. The Revised Preferred Alternative eliminated one of the left turn lanes in each direction of South Capitol Street and a through lane on M Street SE east of the intersection.

Compared with the FEIS Preferred Alternative, the adjustments proposed at the intersection of South Capitol Street and M Street under the Revised Preferred Alternative are not expected to change the overall LOS of the intersection. Like the FEIS Preferred Alternative, vehicles approaching this intersection will regularly queue beyond the nearest intersections due to their relatively close spacing. Intersections, such as M Street SE and Half Street SE, will experience the spillback effects from the South Capitol Street/M Street intersection.

By 2040, traffic conditions in the morning peak hour under the Revised Preferred Alternative will be similar to those in 2020. Due to changing local travel patterns and land use projections in future years, the analysis predicted the intersection at M Street SE and Half Street SE would improve to LOS C. In 2040, the intersection of Firth Sterling Avenue SE and South Capitol Street will have the highest average delay in the Project Area during the morning peak hour, similar to the FEIS Preferred Alternative, but with a much lower average delay.

In addition to the two poorly performing intersections in 2020, which will continue to operate poorly in 2040 during the morning peak hour, the analysis predicted only one more intersection will operate at LOS E or F during the morning peak hour. The additional traffic generated by major developments surrounding the Anacostia Metrorail Station, including DHS headquarters at the St. Elizabeths Campus, will adversely affect the operation of the intersection of Martin Luther King, Jr. Avenue SE and Sumner Road SE. The average delay per vehicle is predicted to increase by 24 seconds above the average delay predicted in 2020, which will lower LOS C in 2020 to LOS E in 2040.

The analysis predicted that the following intersections would operate at LOS E or F during the evening peak hour in 2020 under the Revised Preferred Alternative:

- South Capitol Street at west traffic oval/Potomac Avenue/Q Street/R Street (LOS E)
- Suitland Parkway/South Capitol Street at east traffic oval (LOS E)
- Firth Sterling Avenue SE at South Capitol Street (LOS E)
- Firth Sterling Avenue SE at Barry Road SE (LOS F)
- Howard Road SE at Firth Sterling Avenue SE (LOS E)
- Suitland Parkway, I-295 southbound ramps (LOS E)

The predicted operations of the intersections in the Project Area under the Revised Preferred Alternative are consistent with results for the FEIS Preferred Alternative except at the intersections at Howard Road SE and Firth Sterling SE and at I-295 southbound ramps on Suitland Parkway. Both intersections will operate at LOS C under the FEIS Preferred Alternative, but LOS E under the Revised Preferred Alternative. One of the reasons for the decrease in intersection performance is due to adjustments in the signal timings to allow maximum walk times for pedestrians using the crosswalks. This adjustment will increase the delay time for vehicles.

As noted above, the three South Capitol Street intersections at the very north end of the Project Area will operate poorly under the FEIS Preferred Alternative in 2020. Under the Revised Preferred Alternative, these intersections will operate at LOS C or D. Modifications to the I-395 ramp terminus and on-ramp configuration provided under the Revised Preferred Alternative led to this improved traffic condition at these intersections.

The highest average delay in 2020 among these six intersections will occur at the intersection of Firth Sterling Avenue SE and Barry Road SE (92 seconds per vehicle). Delays at this intersection are a result of expected queuing from the intersection of Firth Sterling Avenue SE and Suitland Parkway. This is an increase from the 38-second average vehicle delay predicted under the FEIS Preferred Alternative.

Evening peak hour traffic operations under the Revised Preferred Alternative would be similar in 2020 and 2040. Compared with the FEIS Preferred Alternative, the Revised Preferred Alternative will have better LOS at the following intersections:

- South Capitol Street at Virginia Avenue (LOS C)
- South Capitol Street at I-395 ramps (LOS C)
- South Capitol Street at the west traffic oval/Potomac Avenue/Q Street/R Street (LOS D)
- Howard Road SE at Anacostia Metrorail Station (LOS D)
- Martin Luther King, Jr. Avenue SE at Howard Road SE (LOS D)

These five intersections will operate at LOS E or F under the FEIS Preferred Alternative. Under the Revised Preferred Alternative, these intersections will operate at LOS D or higher. The reasons for the higher LOS include modifications to the use of the travel lane and revisions to signal operations.

Four intersections will operate at LOS E or F in 2020 and 2040 during the evening peak hour (east traffic oval, Firth Sterling Avenue SE/South Capitol Street, Howard Road SE/Firth Sterling Avenue SE, and Suitland Parkway/southbound ramps). The following intersections are would operate at LOS E or F during the evening peak hour in 2040 under the Revised Preferred Alternative. However, the analysis predicted that these intersections would operate at LOS D or higher in 2020:

- South Capitol Street at E Street/Washington Avenue SW (LOS E)
- Firth Sterling Avenue SE at DHS West Access Road (LOS E)
- M Street SW at Half Street SW (LOS F)

The Firth Sterling Avenue SE and Barry Road SE intersection is predicted to improve from LOS F in 2020 to LOS D in 2040.

The highest average delay among the seven intersections is predicted to occur at the intersection of M Street SW and Half Street SW. At 91 seconds per vehicle during the evening peak hour, this predicted delay is 7.5 times greater than the average delay predicted under FEIS Preferred Alternative. This predicted condition reflects adjustments to the lane configuration at the intersection of South Capitol Street and M Street under the Revised Preferred Alternative. During the evening peak period, a high percentage of eastbound vehicles turn right to travel south towards the bridge. Therefore, the Revised Preferred Alternative modified the lane configuration provided under the FEIS Preferred Alternative.

Eastbound traffic will have one left turn lane, two through lanes, and one exclusive right turn lane. The FEIS Preferred Alternative will have provided one left turn lane and three through lanes, with a curbside through lane operating as a shared lane for right turns. Although beneficial to vehicles traveling east on M Street SW and then south on South Capitol Street, this modification would cause queuing that will spillback to the intersection of M Street SW and Half Street SW. This will lead to higher delays at this intersection than predicted under the FEIS Preferred Alternative.

In summary, the Revised Preferred Alternative will have similar traffic operations in 2020 and 2040 as the FEIS Preferred Alternative, except at a few locations. The modification of the alternative at the South Capitol Street and I-395 ramps will result in better traffic operations at the north end of the Project Area along South Capitol Street. Changes to the lane configurations at the intersection of South Capitol Street and M Street will not change the predicted overall LOS at this intersection, but it will affect the traffic operation of nearby intersections, in particular on M Street at the Half Street SW and Half Street SE intersections.

FEIS Preferred Alternative

Tables 4-17 and 4-18 identify locations of intersection delays that changed in the Revised Preferred Alternative, compared with the FEIS Preferred Alternative. This is due to different forecast years, and updated traffic modeling and land use assumptions. For example, the updated analysis grouped the intersections within the west traffic oval and the east traffic circle into one coordinated intersection at each location. In contrast, the FEIS analyzed multiple intersections at each location. The following intersections will operate at LOS E or F during the morning peak hour in 2020 under the FEIS Preferred Alternative:

- South Capitol Street at west traffic oval/Potomac Avenue/Q Street/R Street (LOS F)
- South Capitol Street at east traffic circle/Suitland Parkway (LOS F)
- Firth Sterling Avenue SE at South Capitol Street (LOS F)
- Martin Luther King, Jr. Avenue SE at Sumner Road SE (LOS F)
- Martin Luther King, Jr. Avenue SE at Suitland Parkway ramps (LOS E)
- Suitland Parkway at I-295 southbound ramps (LOS E)

Among these six intersections, Firth Sterling Avenue SE at South Capitol Street will have the highest average delay (223 seconds per vehicle). Compared with existing conditions, the capacity of this intersection will not change under the FEIS Preferred Alternative, although travel demand is projected to increase substantially due to additional employment at the St. Elizabeths Campus and JBAB. Corresponding queues from this intersection are projected to extend over one mile from the intersection on South Capitol Street in the northbound direction and one-third of a mile in the southbound direction.

The updated analysis of 2020 morning peak hours for the FEIS Preferred Alternative is consistent with the results of the analysis performed for the FEIS Preferred Alternative, except at the intersection of South Capitol Street and M Street. The updated analysis resulted in an overall LOS D for this intersection during the morning peak hour. This change was the result of updated travel patterns and land uses, and revisions to signal timing assumptions. Nevertheless, vehicles approaching this intersection will regularly queue beyond the nearest intersections due to their relatively close spacing.

By 2040, traffic conditions in the morning peak hour under the FEIS Preferred Alternative will slightly worsen compared with the 2020 predictions. Five of the six intersections predicted to operate at LOS E or F in 2020 are predicted to operate at these levels in 2040. The exception will be the proposed Suitland Parkway ramps at Martin Luther King, Jr. Avenue, which will operate at LOS D. The highest average delay during the morning peak hour will continue to be at the intersection of Firth Sterling Avenue SE and South Capitol Street. The average delay, predicted to be 25 seconds longer than in 2020, will maintain the extremely long queue lengths. Average delays at the other four intersections will increase as well, but by lesser amounts.

The following intersections will operate at LOS E or F during the evening peak hour in 2020 under the FEIS Preferred Alternative:

- South Capitol Street at E Street/Washington Avenue (LOS F)
- South Capitol Street at Virginia Avenue (LOS F)
- South Capitol Street at I-395 ramps (LOS F)
- South Capitol Street at west traffic oval/Potomac Avenue/Q Street/R Street (LOS E)
- South Capitol Street at east traffic circle/Suitland Parkway/Howard Road (LOS E)
- Martin Luther King, Jr. Avenue SE at Howard Road SE (LOS E)
- Firth Sterling Avenue SE at South Capitol Street (LOS E)

The highest average delay among these seven intersections will occur at the intersection of South Capitol Street and E Street/Washington Avenue (153 seconds per vehicle). This intersection has five legs with four in-bound approaches. Traffic from E Street competes with southeast-bound traffic on Washington Avenue resulting in longer delays for both approaches than at other intersections. The FEIS did not report this intersection as operating poorly. However, recent changes in traffic patterns due to updated roadway network connections along Washington Avenue and revisions in land use from the previous analysis resulted in heavier southbound volumes along South Capitol Street. These higher volumes will adversely affect the operations of downstream intersections at Virginia Avenue and the I-395 ramps.

These intersections will operate at LOS F in 2020. The FEIS reported that these intersections would operate at LOS C in 2030.

Similar to the morning peak hour results, the evening peak hour results of the updated analysis for 2020 under the FEIS Preferred Alternative are consistent with the results of the analysis performed for the FEIS with the exception of the intersection of South Capitol Street and M Street. Because of updated travel patterns and land uses, and revisions to signal timing assumptions, this intersection is predicted to operate at LOS D under the FEIS Preferred Alternative. The FEIS reported LOS F at this intersection. Similar to the morning peak hour, the analysis predicted queuing of vehicles beyond the nearest intersections because of the close spacing.

By 2040, the following three intersections, in addition to the six intersections noted above, will operate at LOS E or F during the evening peak hour under the FEIS Preferred Alternative:

- Firth Sterling Avenue SE at DHS West Access Road (LOS E)
- Howard Road SE at Firth Sterling Avenue SE (LOS E)
- Howard Road SE at Anacostia Metrorail Station (LOS F)

The analysis predicted that these three intersections would operate worse during the evening peak hour in 2040 than in 2020 because of higher traffic volumes along major arterials and the effects of changes in land use both in the Project Area and along commuter routes in the vicinity.

The highest average delay during the evening peak hour will continue to be at the intersection of South Capitol Street and E Street/Washington Avenue, with the same effects to downstream intersections. Other intersections, such as those along the west traffic oval, at the I-395 ramps, and at the intersection of Firth Sterling Avenue SE and South Capitol Street, are predicted to operate similarly in 2020 and 2040.

The evening peak hour LOS at the intersection of South Capitol Street and M Street is predicted to be the same as 2020, with total average delay increasing from 41 to 48 seconds per vehicle. While the operation of this intersection will be better than reported in the FEIS for 2030, evening peak hour queuing beyond adjacent intersections at all approaches is still predicted.

4.11.4 Mitigation Measures

South Capitol Street at M Street

The intersection of M Street and South Capitol Street will undergo the most substantial difference in configuration within the Project Area under the Revised Preferred Alternative. This intersection is of notable importance for the southern half of the District because M Street is the only continuous east-west arterial south of the Southeast-Southwest Freeway that connects the Anacostia and Southwest Waterfronts, and South Capitol Street is the longest north-south arterial south of the National Mall. In addition, DDOT is considering placing a DC Streetcar line on M Street SE/SW, which may affect the operation of the intersection (see Section 2.5).

It is recognized that the proposed configuration of the M Street and South Capitol Street intersection under the Revised Preferred Alternative represents a compromise that balances the following competing needs and limitations in addition to just traffic operations:

- Purpose and need for the Project, including creation of a grand urban boulevard that serves as a gateway of national significance to the District of Columbia Monumental Core
- Right-of-way constraints
- Impacts to historic structures (Saint Vincent De Paul Catholic Church)
- Potential utility conflicts
- Uniformity of cross-section width and landscape elements (including a green center median)
- Visual/aesthetic quality
- Accessibility for east-west cross streets, including left turns to and from South Capitol Street and east-west through movements
- Pedestrian cross-walk lengths and walk times

The conversion of the current urban diamond interchange to an at-grade intersection (see Figure 4-20) will introduce a new signal along the main through lanes of South Capitol Street. While this change will provide better connectivity between the existing discontinuous segments of L Street SE and SW, and K Street SE and SW, the proposed conversion will reduce the operational performance along the both South Capitol Street corridor and M Street.

Figure 4-20: Revised Preferred Alternative South Capitol Street / M Street Intersection

By 2040, longer delays and queues along the South Capitol Street corridor are predicted to occur compared to the No Build condition. Depending on future traffic patterns and volumes, queues in each direction may spill back past adjacent signalized intersections. North-south and east-west travel times are projected to be longer under the Revised Preferred Alternative as a result of slower overall speeds associated with the intersection delays. In particular, operations on the northbound approach may degrade due to high volumes of left turn movements.

Because of this potential, DDOT will monitor and evaluate traffic conditions at and surrounding this intersection once every two years up to the year 2040 following complete construction of the Project. If DDOT finds the following traffic conditions, it will consider additional capital improvements:

- Substantial degradation in operational performance of the intersection, specifically in the northbound direction during morning and afternoon peak periods, such as spill-back queuing from the northbound left turn lane at M Street through the intersection of N Street/ South Capitol Street.
- Substantially higher rates, severity, and / or frequency of crashes at the intersection, benchmarked against crash patterns under existing conditions.

Capital improvement options were identified that could address the operational and safety concerns noted above. However, these options would not comprehensively address all the operational issues inherent in the proposed South Capitol Street/M Street intersection, nor would they better balance the competing needs and limitations noted above. The following capital improvement options are not mutually exclusive. The options may be combined if desired. Additional options may be developed and considered if DDOT decides to make additional capital improvements.

Option 1 (South Capitol Street / M Street Intersection)

Option 1 is intended to improve operations and safety by creating a northbound left turn lane without increasing the proposed footprint of the intersection. A portion of the median on the south leg of the intersection between M and N Streets would be eliminated, and replaced by a 250-foot left-turn bay (see Figure 4-21).

Figure 4-21: South Capitol Street / M Street Intersection Option 1

Option 2 (South Capitol Street / M Street Intersection)

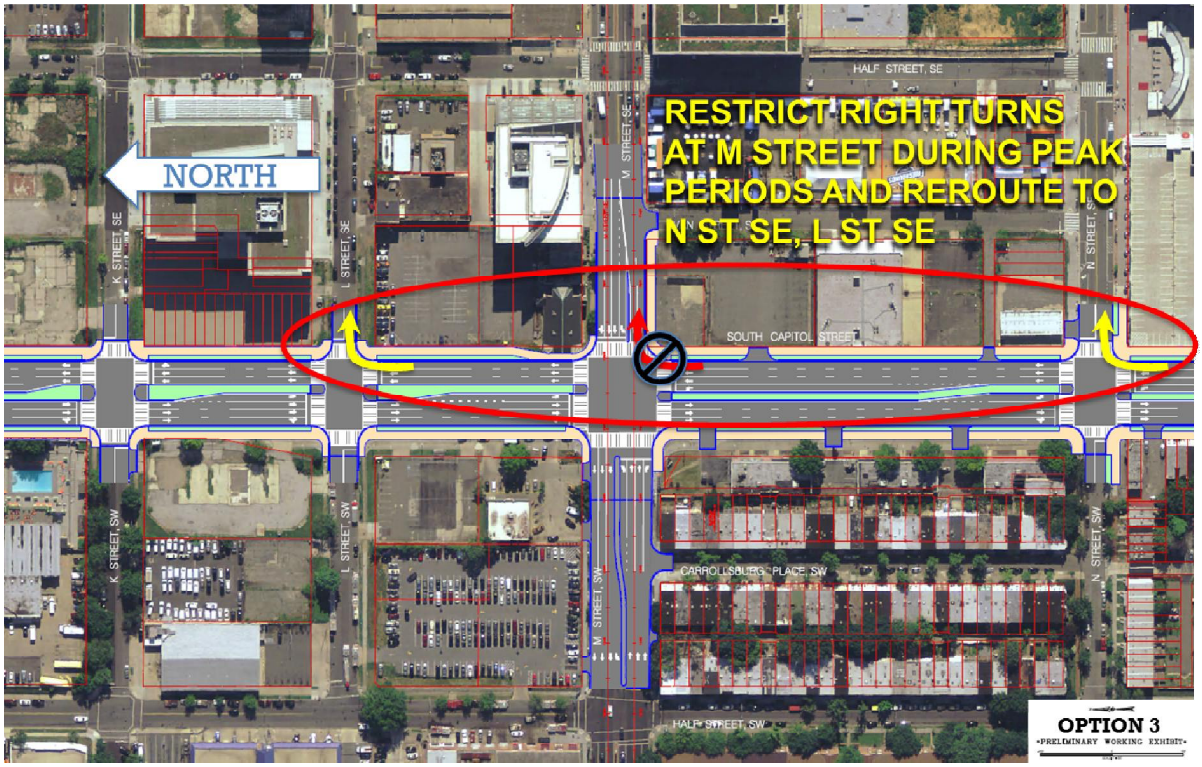
Option 2 would reduce the volume of northbound left turns at M Street by providing left turn lanes at the two intersections (L and K Streets) immediately north of the South Capitol Street/M Street intersection (see Figure 4-22). By providing additional left turn lanes along South Capitol Street, the signal time allocated for northbound left turns at M Street may be reduced, which would benefit other movements at the intersection. However, this option would only be available if a series of long-term improvements aimed at reconnecting the Anacostia and Southwest Waterfronts through a combination of multiple local streets, including K and L Streets, are implemented as identified in the *M Street SE/SW Transportation Planning Study* (DDOT, 2012). The District owns the land that currently impedes the continuity of L and K Streets, and DDOT is planning to connect K and L Streets SW to 3rd and 6th Streets SW, respectively.

Figure 4-22: South Capitol Street / M Street Intersection Option 2

Option 3 (South Capitol Street / M Street Intersection)

Option 3 was developed to address potential conflicts between northbound right-turning vehicles and pedestrians crossing M Street SE. Northbound right turns from South Capitol Street to M Street SE would be prohibited during peak periods and/or special events (see Figure 4-23). Right turns would be allowed at N and L Streets SE. Variable message signing would be provided informing motorists about the right turn restriction. The elimination of right turn/pedestrian conflict during peak periods would increase the capacity of the through lanes through the intersection. While Figure 4-23 shows this improvement specifically for the northbound direction, a similar strategy could be employed other problematic approaches depending on the time of day.

Figure 4-23: South Capitol Street/M Street Intersection Option 3



Other Options (South Capitol Street / M Street Intersection)
Other options that require more research to determine effectiveness and safety implications may be considered, such as variable time-of-day lane use on the northbound approach, similar to what is utilized in other areas of the District (e.g., Chain Bridge Road, Canal Road, and Arizona Avenue NW). For the northbound direction, the configuration would be shown with variable message signs and signal controls to provide two through lanes and two left-turn lanes at times when left turn volume demand exceed capacity of a single lane. At all other times, the signing and signal controls would indicate one left turn lane and three through lanes for the northbound direction.

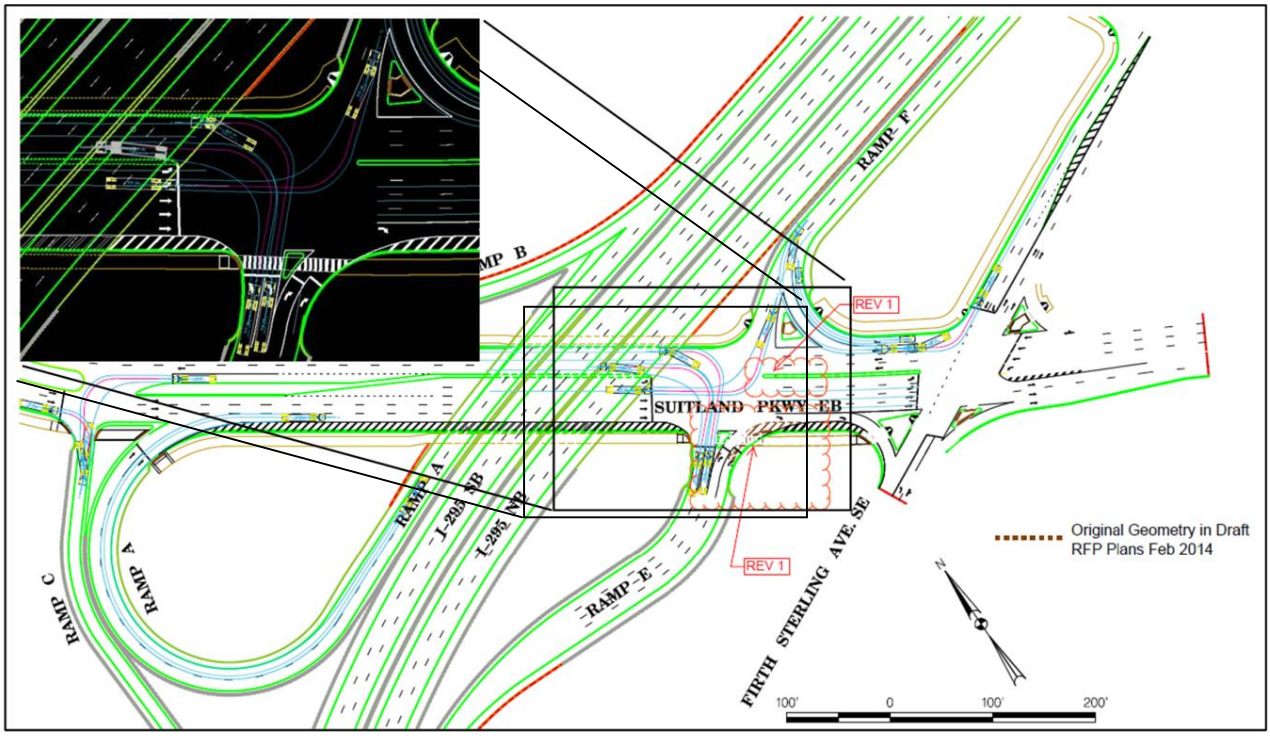
In addition, supplemental traffic control could be considered during peak periods. As with a number of other intersections throughout the District where two major corridors intersect, the intersection signal control could be augmented by traffic control officers. Traffic control officers are able to make real time determinations in adjusting the priority of any given turn movement, intersection approach or mode based on changing operational conditions to best serve all of the modes and movements.

Other Locations

I-295 Northbound Ramps at Suitland Parkway
A potential safety concern was identified with regards to the proposed of I-295 and Suitland Parkway interchange. The new interchange configuration would allow northbound vehicles exiting I-295 to continue straight through the signalized off-ramp intersection at Suitland Parkway and reenter I-295 via the corresponding on-ramp as a way to “queue-jump” (i.e. bypass stopped or slow moving traffic) during times of heavy congestion on the interstate. This is phenomenon that occurs at other locations throughout the metropolitan area, and often degrades safety and operations of the interstate and the adjacent ramp terminals.

The proposed interchange could be revised to deter queue-jumping by including a channelizing island at the off-ramp intersection, as well extending the center median on Suitland Parkway between the off-ramp intersection and Firth Sterling Avenue (see Figure 4-24). The revised configuration of the off-ramp intersection would force vehicles to either turn left or right on Suitland Parkway, and prevent vehicles from proceeding straight into the northbound on-ramp. Although not part of the proposed Revised Preferred Alternative, this revised interchange will be studied further during final design.

Figure 4-24: I-295 NB Ramps at Suitland Parkway

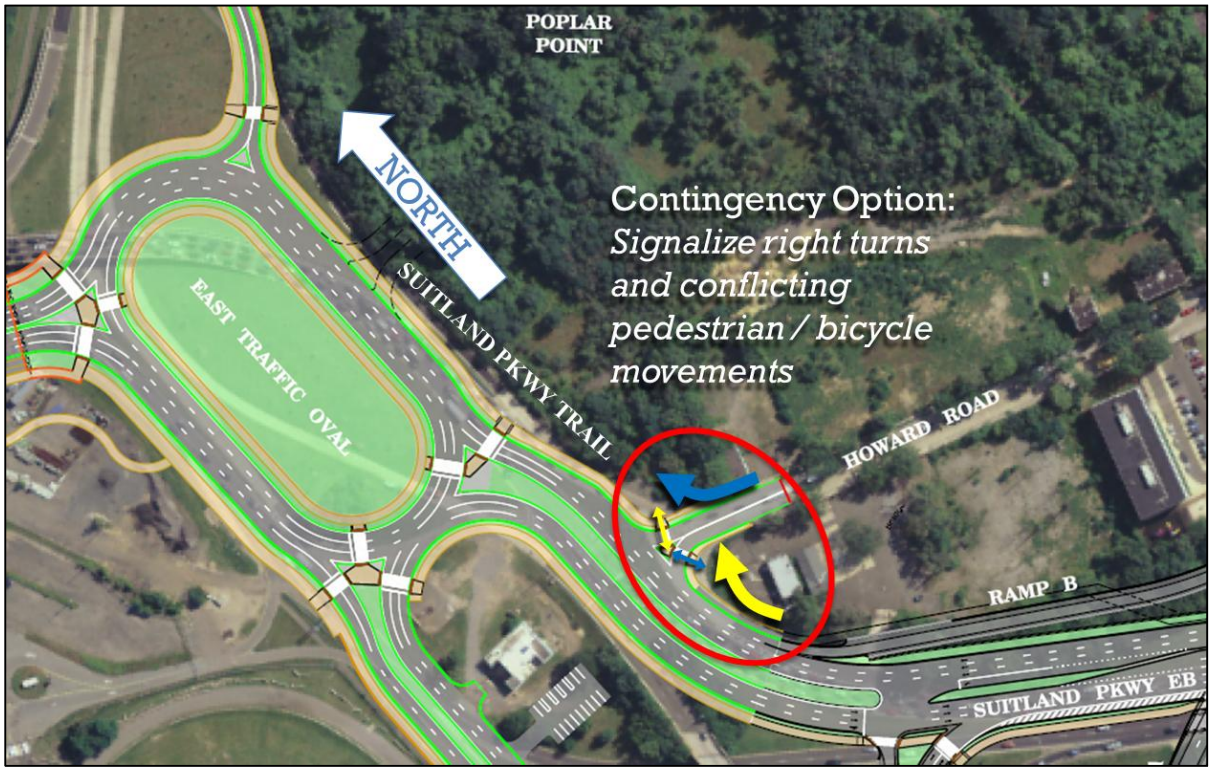


Howard Road at Suitland Parkway

The proposed Suitland Parkway Trail along the north side of the roadway will pass through the intersection of Howard Road at Suitland Parkway, which is proposed by the Revised Preferred Alternative as an un-signalized, right-in/right-out intersection. The projected traffic volumes turning right at this location are not high enough to warrant a traffic signal. However, potential pedestrian/vehicle conflicts could become problematic at this location if right turning movements were to increase substantially. Adequate gaps in vehicular traffic to facilitate a safe pedestrian crossing of Howard Road could become infrequent and cause delays for Suitland Parkway Trail users.

The proposed intersection could include installation of a traffic signal to control the flow of vehicles and provide alternating rights-of-way for pedestrians/cyclists and right-turning traffic. As shown in Figure 4-25, movements shown in similar colors could proceed together and then alternately stop to reduce conflicts and ensure sufficient crossing times for Suitland Parkway Trail users. This configuration would provide a two-phase crossing of Howard Road, so the triangular pedestrian refuge island between the inbound and outbound lanes of the roadway would need to be of sufficient size to accommodate the expected numbers pedestrians and cyclists waiting for changes in signals. Although not part of the proposed Revised Preferred Alternative, this revised intersection will be studied further during final design.

Figure 4-25: Suitland Parkway/Suitland Parkway Trail at Howard Road SE



4.12 Other Transportation Facilities and Services

4.12.1 Water Transportation

Impacts

The *Anacostia River Navigation Evaluation Report* (DDOT, 2014) concludes that the 42 feet vertical and 150 feet horizontal clearances provided by the proposed fixed bridge design will accommodate approximately 99.8 percent of the current and projected future vessel traffic traveling the Anacosita River. Based on information documented in the *Anacostia River Navigation Evaluation*, the vessels and river operations listed in Table 4-19 may be affected by the proposed bridge design. Many of the vessels documented have not traversed beneath the Frederick Douglass Memorial Bridge in over eight years, if not longer. A total of 4.1 average annual vessels transits are potential impacted by the construction of a fixed span. Of the 4.1 trips, three of these are associated with U.S. Coast Guard vessels that have not passed through the area since 2005. The impacts to projected future vessel traffic are to be minimal.

Table 4-19: Existing Vessels Impacted by the Proposed Clearance

Name of Vessel	Vessel Type	Owner	Air Gap (feet)	Last Recorded Transit	Average Annual Transit
James Rankin	Buoy Tender	U.S. Coast Guard	70	2003	2
YP-684; YP-676; YP-682; YP-688; YP 679	Patrol Craft	U.S. Coast Guard	60	2005	1
Triton	Recreational Sail	Shawn P. Callaghan	>40	2001	0.2
Captain Nelson	Tug	Smith Brothers, Inc.	>40	2004	0.2
Kings Pointer	Training Vessel	US Merchant Marine Academy	140	2003	0.2
American Spirit	Sail Boat/Tall Ship	DC Sail National Maritime Heritage Foundation (NMHF)	78	2006	0.1
Minnie V	Passenger Vessel (Sail)	Living Classrooms Foundation, Inc.	65	2012	0.2
Pride of Baltimore II	Passenger Vessel (Sail)	Pride of Baltimore, Inc.	107	2012	0.2
				Total Average Transits	4.1

The USN has stated in a meeting held on May 23, 2013 there would be no issues with their fleet beyond the relocation of the DS Barry. The USN needs a maximum of 47 feet horizontal clearance and 35 feet of vertical clearance for critical military traffic. In addition, a fixed bridge would limit or eliminate the possibility of the occasional visits from tall ships to the Washington Navy Yard.

Aware that the Project (specifically the construction of the new fixed span Frederick Douglass Memorial Bridge) would affect decision making regarding the future of the DS Barry, the USN commissioned a study (Donjon Marine Company, Inc., 2014) to examine options for either moving or keeping the vessel at its current location docked at the Washington Navy Yard. The *Donjon Report* was primarily a risk assessment of various alternatives for the ultimate disposition of the vessel and did not consider the value or benefits of maintaining the DS Barry as a museum open to the public.

The *Donjon Report* stated that the DS Barry may have to be moved from its current location regardless of whether the USN decides the future of the ship is to operate as a museum open to the public. The USN has closed access to the ship by the public indefinitely. The ship requires extensive repairs and possible hazardous materials cleanup in order for it to operate as a museum in the long-term. Eventually, the hull plating would fail and the ship would become structurally unsound as corrosion advances. The *Donjon Report* also noted that an ongoing USN study with regards to PCB and other heavy metal contamination in and around the Washington Navy Yard may dictate that the DS Barry not remain at her current berth.

If the USN decides not to move the ship from its current location, the *Donjon Report* stated that a detailed maintenance plan would be required to ensure the ship is kept in good shape in terms of hull integrity and long-term survivability. Eventually the hull would require extensive repairs or maintenance to prevent a catastrophic event, which would have to be made in-water through the use of coffer dams or underwater repair techniques. Alternatively, the *Donjon Report* provided the option of building a dry dock like structure underneath the vessel. The ship would appear to be floating, but would instead be sitting on the structure, which eliminates the risk of flooding or the effects of corrosion. If the decision is made to keep the DS Barry moored at the Washington Navy Yard (with or with a supporting structure), the new Frederick Douglass Memorial Bridge would have no effect on future USN activities to keep the DS Barry in good shape.

Other options for the future of the DS Barry mentioned in the *Donjon Report* included (1) moving the vessel intact before the construction of the new bridge prevents navigation of vessels that need greater than 42 feet vertical clearance (such as the current condition of the DS Barry); or (2) moving the vessel after removing some of the superstructure to reduce its vertical clearance to below 42 feet. The *Donjon Report* noted that completely dismantling the ship in place would probably be prohibited by permitting authorities, notwithstanding its high cost. Under the first move option, the ship can be established as a museum elsewhere (assuming repair are made), taken to a scrap yard for dismantling, or taken to an offshore location to be sunk and possibly made into an artificial reef. Under the second move option, the ship would either be scrapped or sunk. Which option is employed (assuming the USN decides to move the ship) would depend on the schedule for completing the new bridge, and the ability of the USN to secure funding and the necessary approvals/permits to move ship.

If the USN decides to move the ship, the first move option would be used if this action can be done before construction of the new the new bridge prevents navigation of vessels that need greater than 42 feet vertical clearance. The *Donjon Report* stated that the DS Barry can be towed intact safely from the Anacostia River, and would be a simpler action than the second relocation option from the standpoint of vessel preparation. Dredging below the ship may be required to allow the ship to reach water deep enough to allow towing. However, the *Donjon Report* noted that dredging may not be necessary if the draft of the ship is reduced through de-ballasting and weight removal.

The second relocation option would be used if the USN is unable to secure funding and the necessary approvals/permits to move ship before the point in which construction of the new bridge prevents navigation for vessels with greater than 42 feet vertical clearance. Under this option, the superstructure would be reduced in height to allow the entire vessel to pass under the new bridge. Although removing part of the superstructure would lighten the ship, this would not be enough to reduce its draft. Therefore, dredging may still be required as noted under move option 1. Reducing the height of the superstructure would effectively eliminate keeping the ship as a museum at another location. Move option 2 would cost about $1.1 million more than move option 1 according to the *Donjon Report*.

A new fixed span Frederick Douglass Memorial Bridge will prevent U.S. Naval vessels with vertical clearance requirements greater than 42 feet from navigating to and from the USN Yard. The *Anacostia River Navigation Evaluation Report* (DDOT, 2014) (Appendix A) indicated no plans by the USN to dock a vessel similar in size to the DS Barry at the Navy Yard.

The *Anacostia River Navigation Evaluation Report* indicated potential installation of a replica of the schooner the Pearl by the Earth Conservation Corps. As presented in the report, the intended use and the time frame of the installation of the replica of the Pearl are not clear. But if the vessel is intended to be installed as a display ship, it would need to be transported to site without the masts and be assembled on site. The transportation of the replica as a working sailing vessel will not clear the 42 feet space provided by the proposed fixed bridge.

Mitigation

No mitigation measures are required.

4.12.2 Fueling Pier

Impacts

Under the Revised Preferred Alternative, the proposed new bridge configuration may affect the operation of a pier that is specifically used to transfer fuel from barges for use at Joint Base Andrews. The fuel is transferred to the base via a pipeline located along Suitland Parkway. The FEIS Preferred Alternative would have required the relocation of this fuel pier. The Revised Preferred Alternative would not require its relocation. However, given that the tug and barge transporting the fuel can extend 130 to 165 feet upstream of the fuel pier in the current mooring configuration, the new bridge would likely require changes to the tug and barge navigational path and mooring arrangements in order to maintain safe operations, particularly on the approach to the fueling pier.

The proposed new bridge would also require demolition of the northern structure of two piers and associated mooring and breasting structures that are located on the west bank of the river to the south of the existing bridge. These piers are inactive remnants of an earlier fuel storage facility, which were removed circa 2007 and are no longer in use. The demolition of the northern pier structure and associated mooring structures would be conducted in accordance with applicable federal and DC environmental regulations.

Mitigation

No mitigation measures are required.

4.12.3 Helicopter Service

Impacts

The FEIS Preferred Alternative did not allow the construction of the large staircases connecting to the Ancostia Rivefront to avoid impact on the existing heliport (at 1724 South Capitol Street SE). Conversely, the Revised Preferred Alternative would accommodate these staircases while not requiring the relocation of the heliport. In addition, the Revised Preferred Alternative would

not require modification of the existing flight approach and departure path for the heliport, which was the case under the FEIS Preferred Alternative.

Mitigation
No mitigation measures are required.

4.12.4 Freight and Passenger Rail Service

Impacts
The Project is independent from the changes that occur with the freight and passenger rail services that operate in the Project Area. As a result, the conclusions in the FEIS remain valid for the Revised Preferred Alternative.

Mitigation
No mitigation measures are required.

4.13 Construction Impacts

4.13.1 Construction Phasing of the Revised Preferred Alternative

The construction of each of the five segments for the Revised Preferred Alternative will be scheduled in stages, and would be determined at a later time and may be under separate contracts. The selected designer/contractor for each contract would determine the exact sequencing and methodology for the construction of the Revised Preferred Alternative, with approval from DDOT. The overall cost of the Project for all five segments is estimated at $1.033 billion. Specifically, Segment 1 is forecast to cost approximately $480 million, Segment 2 approximately $223 million, Segment 3 approximately $135 million, Segment 4 approximately $153 million, and Segment 5 approximately $42 million.

4.13.2 Community Cohesion and Facilities

Impacts
During the construction of the Revised Preferred Alternative, access to all community facilities would be maintained to the extent practical through controlled construction scheduling and/or provisions of alternate routes of entry. This is the same as documented in the FEIS for the FEIS Preferred Alternative. In addition, the former Jackie Robinson school, which is located immediately east of Ceder Tree Academy, has closed and the building now contains an outpatient treatment facility.

In addition to the community facilities listed in FEIS as possibly requiring temporary change of access due to the construction activities, access to Cedar Tree Academy (Howard Road Academy) and the outpatient treatment facility which are located along Howard Road SE may be impacted during construction. Howard Road SE provides the only access to these facilities. Because the Project includes the construction a new I-295 southbound ramp to westbound Suitland Parkway at the rear of this facility, access to these land uses from Howard Road SE

should not be affected in the long term. As noted in the Project's FEIS, some right-of-way (including parking) may be needed from both properties, but will not require the displacement or relocation of the building facilities.

Project Area utilities may be impacted temporarily by construction of the Revised Preferred Alternative but, as stated in the FEIS, there would be no service interruptions.

Mitigation

The potential impacts to community facilities created by changes in access would be mitigated by providing adequate signage for the access changes, temporary access provisions, and by providing advanced notification, such as Cedar Tree Academy and the outpatient treatment facility noted above and the rest of the community, regarding Project changes throughout the construction period.

Temporary utility impacts would be mitigated with active and frequent coordination between DDOT and the utility owners in the Project Area throughout the design and construction phases of the Project. Utility lines under the Anacostia River will not be impacted during construction. The only utility currently crossing the existing Frederick Douglass Memorial Bridge is an electrical service that operates the swing span.

A community outreach program would be established during construction, which shall include a project website and a field or community office accessible to members of the public. A project representative would be available during posted office hours to receive visits by members of the public who may have questions or are requesting information. The outreach program would also include a project email account and a telephone hotline to receive any complaints. Through this outreach program, communication, which would include website postings, email blasts, newsletters and newspaper notices, would be used to apprise the community about the status of construction, especially if something may affect daily activities or normal events, such as a disruption in utility service, road closures or detours, and high noise producing activities.

As part of the public outreach program during construction, DDOT would organize quarterly community meetings as a venue for any community member to voice concerns about construction activities. The meetings may also be used by DDOT or its construction contractor to provide notice of upcoming construction activities.

4.13.3 Economy and Employment

Impacts

The construction of the Revised Preferred Alternative would create new jobs and increase the sale of construction related energy, equipment, and materials. However, as with any large construction project, there would be traffic diversions resulting in traffic delays that would add some travel time to residents, businesses (including employees and patrons), and commuters. The Revised Preferred Alternative would be subject to the contracting procedures and requirements defined in Title IV of the *National Capital Revitalization Corporation and the*

Anacostia Waterfront Corporation Reorganization Clarification Emergency Act of 2007 (54 DCR 7390).

Mitigation

No additional mitigation measures from the FEIS are required.

4.13.4 Air Quality

Impacts

Construction-related air quality effects, applicable regulations, and required mitigations documented in the FEIS would apply to the Revised Preferred Alternative. Construction-related effects of the Project would be limited to short-term, increased fugitive dust and mobile-source emissions during construction. State and local regulations regarding dust control and other air quality emission reduction controls would apply to the Project.

Fugitive dust is airborne particulate matter, generally of a relatively large particulate size. Construction-related fugitive dust would be generated by haul trucks, concrete trucks, delivery trucks, and earth-moving vehicles operating around the construction sites. Fugitive dust is particulate matter re-suspended ("kicked up") by vehicle movement over paved and unpaved roads, dirt tracked onto paved surfaces from unpaved areas at access points, and material blown from uncovered haul trucks.

Generally, the distance that particles drift from their source depends on their size, the emission height, and the wind speed. Small particles (30 to 100 micron range) can travel several hundred feet before settling to the ground. Most fugitive dust, however, is comprised of relatively large particles (that is, particles greater than 100 microns in diameter). These particles are responsible for the reduced visibility often associated with this type of construction. Given their relatively large size, these particles tend to settle within 20 to 30 feet of their source.

Mitigation

The appropriate prevention and mitigation measures, consistent with the *DDOT Division 100 General Requirements*, will minimize potential particulate pollution. The selected designer/contractor will be required to use the following guidelines to minimize the amount of construction dust generated.

<u>Site Preparation</u>

The selected contractor will be required to use the following measures when preparing any site within the Project Area for construction:

- Minimize land disturbance
- Use watering trucks to minimize dust
- Cover trucks when hauling dirt
- Stabilize the surface of dirt piles if they are not removed immediately
- Use windbreaks to prevent accidental dust pollution
- Limit vehicular paths and stabilize these temporary roads

- Pave all unpaved construction roads and parking areas to road grade for a length no less than 50 feet from the construction site access road

The above measures prevent dirt from washing onto paved roadways.

Construction

The selected contractor will be required to use the following measures to minimize and prevent air quality impacts during construction:

- Cover trucks when transferring materials
- Use dust suppressants on unpaved traveled paths
- Minimize unnecessary vehicular and machinery activities
- Minimize dirt track-out by washing or cleaning trucks before leaving the construction site (An alternative to this strategy is to pave a few hundred feet of the construction site access road just before entering the public road)

Post-Construction

The selected contractor will be required to use the following measures to prevent future air quality issues after construction:

- Re-vegetate any disturbed land not used
- Remove unused material
- Remove dirt piles
- Re-vegetate all vehicular paths created during construction to avoid future off-road vehicular activities

Carbon monoxide (CO) emissions from motor vehicles generally increase with decreasing vehicle speed. Disruption of traffic during construction (such as the temporary reduction of roadway capacity and the increased queue lengths) could result in short-term, elevated concentrations of CO.

The selected contractor will be required to use the following additional measures during construction of the Revised Preferred Alternative:

- Minimize the amount of emissions generated by limiting disruptions to traffic, especially during peak travel hours
- Develop an air quality emission control plan for the construction phase
- Cover all trucks during transport of fill materials or soil, wetting materials in trucks, or providing adequate freeboard to minimize dust emissions during transportation
- Cover loads of hot asphalt to minimize odors
- Provide, and require use of, wheel washers to remove dirt that vehicles will otherwise carry offsite
- Remove dirt deposited on any public road, sidewalk, bicycle path, or pedestrian path
- Use gravel or pave haul roads to reduce windblown dust and dirt deposited on local roads

- Remove gravel or paving at the completion of construction and restore area
- Require the use of low or ultra-low sulfur fuels in construction equipment to reduce sulfur emissions
- Locate construction equipment and truck staging areas as far away from sensitive receptors as practical and in consideration of potential impacts to other resources
- Plant vegetative cover on graded areas that will be left vacant for more than one season
- Clean spills of transported material on public roads by frequently using a street-sweeper machine
- Coordinate construction activities with other projects in proximity to the Project to reduce the cumulative effects of concurrent construction projects
- Minimize emissions by assuring proper equipment operation:
  - Turn off the engine of construction vehicles if they are left idling for more than 15 minutes
  - Require appropriate emission-control devices (catalytic converters or particulate traps) on all construction equipment powered by gasoline or diesel fuel to reduce CO, NO_X, and particulate emissions in vehicular exhaust
  - Use relatively new, well-maintained equipment to reduce CO and NO_X emissions

4.13.5 Noise and Vibration

Impacts

The Revised Preferred Alternative will have noise and vibration effects similar to the FEIS Preferred Alternative, specifically on receptors in the immediate vicinity of the construction site. The FEIS documented measures to minimize construction noise. These minimization measures also apply to the Revised Preferred Alternative.

The FEIS documented that construction equipment, construction activities, and delivery vehicles traveling to and from the site will cause noise impacts in communities. The level of effect would depend on the type of equipment, duration of activity, and distance from a noise receptor. Activities such as pile driving associated with the construction of new ramps would create an annoyance to nearby properties. These construction activities would be limited to daytime hours and to a short duration.

Mitigation

Identification and specification of noise abatement measures would be developed during final design of the Project. 20 DCMR, Chapter 27 provides regulations on construction noise. The DCMR regulations mandate that certain classifications of construction equipment and motor vehicles meet specified noise emission standards, and that construction material be handled and transported in such a manner as not to create unnecessary noise. Construction activities will be limited as required by the DCMR subject to the limitations of the District of Columbia

Noise Control Act of 1977, as amended by § 2 of the Noise Control Amendment Act of 1996, and codified in D.C. Municipal Regulations, Title 20 §§ 2700 et. seq. (1996). Particular requirements below may be revised if changes are made to the DCMR. Applicable measures include:

- Limit noise from construction sites to 80 dBA at 25 feet from the edge of the Project (pile driving and explosives are subject to separate rules) between 7:00 a.m. and 7:00 p.m.
- Limit noise from construction sites to 55 dBA at 25 feet from the edge of the Project in residential or waterfront areas at night
- Develop a noise control plan per DDOT and FHWA requirements prior to the start of construction

To abate or minimize expected construction noise impacts, mitigation measures could be specified in contract plans and specifications subject to the provisions in 20 DCMR, Chapter 27. Project-specific construction noise abatement can be used to minimize, as much as possible, the noise impact zone in areas outside the construction site boundary. Noise abatement measures include:

- Incorporate the needed abatement measures in the Project plans and specifications
- Keep the public informed when work is going to be done
- Limit the number and duration of idling equipment on site
- Provide mufflers or silencers to construction equipment operated by internal combustion engines and maintain all construction equipment in good repair
- Where possible, reduce noise from all stationary site equipment and facilities by using a suitable enclosure
- Minimize the use of back-up alarms if construction activities are occurring during nighttime hours
- When possible, schedule truck loading, unloading, and handling operations so as to minimize on-site construction noise

Vibration mitigation measures include limiting construction activities that cause high vibration levels to weekdays between the hours of 7:00 a.m. to 7:00 p.m. The selected contractor will have an advance outreach program to notify residents and business of schedules for any pile driving or other activity that may result in vibratory impacts. The selected contractor will also monitor for damage to buildings resulting from vibrations caused by construction activity.

4.13.6 Water Quality and Floodplains

Impacts

The Revised Preferred Alternative would impact the water quality and floodplain of the Anacostia River during construction, similar to the FEIS Preferred Alternative. The majority of this impact would come from construction of the Frederick Douglass Memorial Bridge.

Mitigation

Throughout the Project Area, sediment and erosion control, and stormwater management would be required during construction through the National Pollutant Discharge Elimination System (NPDES) permitting program to reduce the amount of sediment and erosion to the river during construction. Best Management Practices (BMPs) and currently acceptable design and construction procedures would be used to reduce or eliminate undesirable effects resulting from construction.

Dredging, or excavation of riverbed materials, would only occur in association with the construction of the bridge piers. If dredging is necessary, it will be limited to the area within a cofferdam to prevent the contaminated sediments to be re-suspended into the water column. The method of construction will be decided by the designer/contractor.

The FEIS identified a potential method to construct the new Frederick Douglass Memorial Bridge that uses barges for the construction of the piers. Based on the conceptual design solution of drilled shaft piles of the order 8–9 feet in diameter, pile tip elevations for the in-water piers are likely to be of the order of EL -100 feet, which is approximately 80 feet below river bed level. Two types of bridge pilings could be used and are dependent on specific geotechnical test results:

- Concrete Pilings in Drilled Shafts – The shafts would be temporarily lined with a hollow steel casing and a steel rebar "cage" inserted. Tremi concrete (which cures under water) would then be poured into the shaft. The force of the concrete filling the shaft forces the water out the top of the shaft, and dewatering occurs. The casing would be extracted as the concrete is poured in, up to a point just below the riverbed. A form would be used above the stream bottom to complete the piling to the necessary height. This option would require the capture and disposal of potentially contaminated sediment excavated from the shaft. The contaminated sediment would be removed to an appropriate upland disposal site, depending on the level of contamination.
- Driven Pilings – Steel "H" or pipe pilings would be driven into the riverbed and extend upwards to the ordinary high water elevation. A concrete foundation would then be formed on top of them. This construction method would cause temporary impacts and potential vibration or shock wave impacts to nearby fish during construction. No dredging or removal of river sediments would be required.

Neither of the piling techniques requires the use of a cofferdam; however, depending on the construction technique, cofferdams may be used to reduce potential impacts to fish from vibration during pile driving. The use of cofferdams would aid in keeping impacts to the riverbed sediment localized (i.e., within the confines of the cofferdam), and any addition of sediment to the water column would be minimal and temporary in nature, such as during the installation and removal of the cofferdams.

The selected designer/contractor would determine the appropriate technique for removing and method of disposal the existing bridge; however, the demolition could be completed as documented in the FEIS. The decks of the existing bridge would be demolished in the reverse

order of how the bridge was originally constructed. This would require that the pavement and deck be removed and then the superstructure be removed in pieces. Barges would be used to remove large spans over the Anacostia River to avoid impacting the river and aquatic resources. Bridge material would be off-loaded nearby and disposed of in accordance with DDOT standards and District hazardous waste management regulations. Explosives would not be used to demolish existing structures.

The existing west side bulkhead would be modified during construction. The west bulkhead would be taken as an extension along the same line of the existing sheet pile bulkhead north of the existing bridge. The east side bulkhead would not be modified.

The designer/contractor will be required to coordinate with the USACE in regards to the demolition of an existing pier in the levee. The designer/contractor will also submit plans to USACE as part of a "No Harm" review for the protection of the existing levee during demolition of the existing pier and construction of the new Frederick Douglass Memorial Bridge.

Any proposed affect to flood storage areas or alterations in flooding characteristic within the 100-year floodplain would be reviewed and approved by FEMA for compliance with federal regulations. Permits would be obtained from the following agencies prior to construction activities:

- USACE – Permits under Section 404 of the Clean Water Act for discharge of dredged or fill material and *Section 10 of the Rivers and Harbors Appropriation Act of 1899* (33 USC 403) for alterations in or over navigable waters.
- DDOE – A permit under Section 401 of the Clean Water Act for any impacts to the Anacostia River. (A Section 401 permit under this act acknowledges that USACE issues the Section 404 permit and allows the District to add specific conditions to ensure all the District's water quality standards are met).
- USCG – A permit under *Section 9 of the Rivers and Harbors Appropriation Act of 1899* (33 USC 401) for construction of a new bridge over a navigable waterway.
- NPS – A Special Use Permit for use of the Anacostia River Bed.

4.13.7 Wildlife and Habitats

Impacts

Construction of the Revised Preferred Alternative will cause disturbance to wildlife and habitats. However, the area of potential construction activity contains relatively few vegetated areas and those areas with vegetation are disturbed. Individual street trees may also be affected by roadway construction.

The Revised Preferred Alternative may require the removal of multiple osprey nests and a single peregrine falcon from the Frederick Douglass Memorial Bridge, rather than one osprey nest as documented in the FEIS.

Mitigation

Tree and vegetation impacts will be offset through designed landscape tree plantings within the Project Area. Many of these newly planted trees will have the opportunity to become specimen/special trees over time. Little opportunity exists to create forested habitat within the urbanized Project Area. However, some small, open woodland habitat will be created through the landscape design process of the Project.

If construction occurs during the nesting period and active nests contain osprey and/or peregrine falcon eggs or young, DDOT would request a permit from USFWS to relocate the osprey or peregrine falcon nest. Nest relocation has been successfully used for ospreys and other raptors, and would likely be successful for the peregrine falcon. Prior to demolition of the existing bridge, nesting towers could be erected away from the bridge construction for ospreys and a nest box could be installed on the new Frederick Douglass Memorial Bridge for the peregrine falcon.

Once Phase 1 of the construction schedule is determined, new nest materials must be periodically removed to prevent the osprey or peregrine falcon from nesting on the bridge during construction.

4.13.8 Geology, Topography and Soils

Impacts

The construction of the Revised Preferred Alternative will have similar disturbances to soils as the FEIS Preferred Alternative.

Mitigation

A Stormwater Management Plan would be required and proper sediment and erosion control methods would be implemented during construction.

4.13.9 Cultural Resources

Impacts

The Revised Preferred Alternative will have similar impacts to cultural resources as the FEIS Preferred Alternative. Construction activities will impact the surrounding neighborhoods and historic properties, but those effects would be temporary and of limited duration. Impacts will include the presence of construction equipment and vehicles, and associated noise, rerouted traffic, odors from construction materials, dust, and mud. None of these temporary conditions will diminish the integrity or adversely affect the significant features of historic properties in the APE. Impacts from construction to historic properties are discussed in more detail in Appendix G.

There are no archaeological sites within the APE that are listed in or eligible for listing in the National Register of Historic Places. Therefore, the Revised Preferred Alternative would have no adverse effects on archaeological sites.

See Section 4.8 regarding Project compliance with Section 106 of the National Historic Preservation Act.

Mitigation

Minimization or mitigation measures do not apply to archaeological sites for this undertaking. However, the Amended and Restated *Section 106 MOA* does contain provisions to address the continued evaluation of potential impacts on archaeological sites during the design phases of the Project. The Amended and Restated MOA addresses potential treatment of unanticipated archaeological sites discovered during construction.

4.13.10 Hazardous Materials

Impacts

As with the FEIS Preferred Alternative, construction of the Revised Preferred Alternative is expected to encounter contamination of soil and groundwater.

As noted in Section 3.9, assessments made by other parties concluded that it is unlikely that the construction contractor would uncover munitions or explosives of concern (MEC) during ground disturbing activities related to the Project.

Mitigation

The selected contractor would be required to prepare and implement a Health and Safety Plan that addresses the potential contamination, including identifying the equipment and procedures to protect the workers and the general public, monitoring of contaminant exposures, and identifying the selected contractor's contact for health and safety. The methodology for handling contaminated materials as detailed in the FEIS would apply for the Revised Preferred Alternative and would be subject to regulatory requirements of DDOE. In general, excavated materials that contain contaminant concentrations exceeding the applicable DDOE regulatory level would be considered as regulated waste materials for the purposes of off-site disposal. Such materials would require disposal in an approved landfill facility or off-site treatment facility. If the contaminants are present in very high concentrations, off-site remediation, chemical stabilization, or recycling of the materials may be appropriate.

Despite the low risk of uncovering MECs during construction, the contractor shall be provided with or provided references to the MEC information developed by the other parties. They will also be instructed to contact 911 should any MECs be uncovered during construction.

4.13.11 Pedestrian and Bicycle Facilities

Impacts

The construction of the Revised Preferred Alternative would minimally impact pedestrian and bicycle facilities within the Project Area.

Mitigation

The Project would maintain pedestrian and bicycle access by providing pathways for non-motorized traffic through construction areas. There would be a path on at least one side of each roadway during construction. Any pedestrian and bicycle detours required would be signed in accordance with DDOT's maintenance of traffic standards.

4.13.12 Traffic and Transportation

Impacts

Traffic

Traffic would be impacted due to construction of the Revised Preferred Alternative as documented in the FEIS. Traffic delays and modified traffic patterns would be typical of large construction projects. Detours and speed reductions through the site would likely be required. Bus routes may need to be rerouted and bus stops relocated. Access to the Washington Navy Yard and Anacostia Metrorail stations would be maintained.

River Navigation

During construction of the new bridge, only the west side channel opening of the existing bridge would be maintained. Construction of the new bridge and demolition of the existing bridge would cause short-term closures of the navigation and secondary channels but only when working in, or adjacent to, either channel. Although not anticipated, any debris or other potential navigational hazards temporarily left in either channel upon reopening would be clearly demarcated until removed. Dredging activities and waterway closures would be permitted, mitigated, and coordinated with the USCG and other water users, as appropriate. Every effort will be made to minimize delays to marine traffic. Construction of the Project would comply with state and federal regulations.

Along with the mitigation measures noted below, substantial impacts to marine traffic would not occur due to the minimal disturbance to the navigation and secondary channels, and infrequent and short duration of waterway closure required for construction of the new bridge and demolition of the existing bridge. The new bridge would link major recreational redevelopment such as the Anacostia Waterfront and the South Capitol Street Corridor on the west side of the river and Poplar Point on the east side of the river by providing multimodal access for pedestrian, bicycle, transit, automobile, and marine traffic while facilitating pedestrian activity at the water's edge.

Mitigation

The selected contractor would be required to create a Maintenance of Traffic (MOT) plan, including providing for the safe and efficient movement of people, goods, and services through and around the Project work zone, while minimizing negative impacts to residents, commuters, and businesses. The MOT would specify a set of coordinated transportation management strategies and describes how they will be used to manage the work zone traffic conditions. The strategies would be multi-faceted, and include operational, communications, and demand-management programs to maintain acceptable levels of vehicular and pedestrian/bicycle traffic

flow during the periods of construction activities. The MOT would include roles and responsibilities, traffic control plans (TCP) with staging/phasing, traffic incident management plans, monitoring provisions, and contingency plans.

As described in Section 4.13.2, public outreach would be used to notify of any changes to traffic patterns including detours as outlined in the FEIS. In addition, DDOT and/or the construction contractor would work with the Washington Area Metropolitan Transit Authority (WMATA), DC Circulator and applicable regional bus commuter operations in coordinating temporary route detours or temporary relocation of bus stops. WMATA's and DC Circulator's public notification programs will be used, if any changes are made to bus stops or routes.

Coordination with USCG would occur to coordinate with water users prior to and during construction regarding potential navigation impacts. The large variety of marine vessels on the river requires establishing construction procedures and coordination efforts to maintain safe operations during bridge construction. Specific procedures would be determined during subsequent phases of the Project; however, they could include the following activities to promote safe marine operations:

- Properly securing all unmanned construction vessels to prevent drifting
- Clearly demarcating all access channels and sensitive areas (i.e., prohibited areas) using secured, floating visual devices (such as buoys)
- Providing lighting on construction vehicles, cranes, barges, or other equipment stationed or operating in the Anacostia River
- Establishing separate marine travel lanes in the upstream and downstream directions
- Coordinating with water users regarding waterway closures and construction equipment activities

If construction activities substantially affect public transit services, such as a temporary reroute of a Metrobus route, DDOT, as part of the overall community outreach program, would conduct special outreach activities to those who may be transit-dependent. This outreach may include, but not necessarily limited to, passing out flyers or providing briefings at schools, churches, social service agencies, neighborhood associations, transit stops, and on buses where the temporary changes would take place.

4.14 Environmental Commitments

Table 4-20 details the environmental commitments for the Revised Preferred Alternative. The majority of the measures identified in this table were also identified in the FEIS. References to the FEIS measures are provided in the table.

Table 4-20: Environmental Commitments for Mitigation of the Revised Preferred Alternative

Category	General Mitigation Measures	Construction Mitigation Measures
Land Use (see Section 4.1 of the FEIS)	▪ Conduct right-of-way acquisition and business relocations in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 61)*, as amended, and DDOT right-of-way policies	▪ Use temporary construction easements in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 61), as amended, and DDOT right-of-way policies
Community Cohesion and Facilities (see Section 4.2 of the FEIS)	▪ No mitigation proposed	▪ Maintain access to community facilities to the extent practical through controlled construction scheduling and/or provisions of alternate entries ▪ Install signage for temporary changes in access during construction ▪ Coordinate with residents, businesses, and service providers to provide advanced notification regarding temporary changes in access by using a project website, email blasts and other social media. ▪ Maintain close coordination with affected utility owners to minimize temporary service interruptions
Environmental Justice (see Section 4.3 of the FEIS)	▪ Establish contracting procedures for the Project in accordance with *Title IV of the National Capital Revitalization Act and Anacostia Waterfront Reorganization Clarification Act of 2007* (54 DCR 7390)	▪ Minimize temporary impacts from construction activities on traffic and transportation, air, noise, vibration, and access ▪ Establish contracting procedures for the Project in accordance with Title IV of the National Capital Revitalization Act and Anacostia Waterfront Reorganization Clarification Act of 2007 (54 DCR 7390)
Economy and Employment (see Section 4.4 of the FEIS)	▪ Compensate displaced businesses in accordance with the rules and regulations of the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* (42 USC 61), as amended ▪ Establish contracting procedures for the Project in accordance with Title IV of the *National Capital Revitalization Act and Anacostia Waterfront Reorganization Clarification Act of 2007* (54 DCR 7390)	▪ Maintain access to businesses at all times ▪ Phase construction activities to minimize impacts to on-street parking ▪ Schedule construction activities near Potomac Avenue and M Street ▪ Install signage for temporary changes in access during construction ▪ Coordinate with residents, businesses, and service providers to provide advanced notification on temporary changes in access ▪ Construction workers park in designated areas, and not in neighborhood or business parking areas

Table 4-20: Environmental Commitments for Mitigation of the Revised Preferred Alternative (continued)

Category	General Mitigation Measures	Construction Mitigation Measures
Air Quality (see Section 4.5 of the FEIS)	▪ No mitigation proposed	▪ Develop an air quality emission control plan that includes the measures provided herein ▪ Comply with local and federal regulations for fugitive dust control and mobile-source emissions during construction, specifically 20 DCMR 605, Control of Fugitive Dust ▪ Comply with 20 DCMR 800, Control of Asbestos during demolition or renovation of existing structures within the Project Area, where applicable ▪ Comply with 20 DCMR 717, Soil and Groundwater Remediation, if any soil vapor extraction or groundwater remediation is required in the Project Area ▪ Implement best management practices to control airborne particulate matter pollutants during construction ▪ Minimize traffic disruptions, particularly during peak traffic hours, to control mobile-source emissions during construction ▪ Follow appropriate air quality permitting process for any installation of fuel burning equipment with heat input ratings greater than 5 MMBTU/hr, stationary generators, or other stationary air pollutant emitting equipment, including equipment to be used for construction for a period in excess of 12 months

Table 4-20: Environmental Commitments for Mitigation of the Revised Preferred Alternative (continued)

Category	General Mitigation Measures	Construction Mitigation Measures
Noise (see Section 4.6 of the FEIS)	▪ No mitigation proposed	▪ Construction activities will be limited as required by the DCMR subject to the limitations of the District of Columbia Noise Control Act of 1977, as amended by § 2 of the Noise Control Amendment Act of 1996, and codified in D.C. Municipal Regulations, Title 20 §§ 2700 et seq (1996). Particular requirements below may be revised if changes are made to the DCMR. ▪ Identification and specification of noise abatement measures would be developed during final design of the Project. ▪ Construction material be handled and transported in such a manner as not to create unnecessary noise. ▪ Limit noise from construction sites to 80 dBA at 25 feet from the edge of the Project (pile driving and explosives are subject to separate rules) between 7:00 a.m. and 7:00 p.m. ▪ Limit noise from construction sites to 55 dBA at 25 feet from the edge of the Project in residential or waterfront areas at night ▪ Develop a noise control plan per DDOT and FHWA requirements prior to the start of construction ▪ Incorporate the needed abatement measures in the Project plans and specifications • Keep the public informed when work is going to be done • Limit the number and duration of idling equipment on site • Provide mufflers or silencers to construction equipment operated by internal combustion engines and maintain all construction equipment in good repair • Where possible, reduce noise from all stationary site equipment and facilities by using a suitable enclosure • Minimize the use of back-up alarms if construction activities are occurring during nighttime hours
Vibration		▪ Limiting high vibration activities to weekdays between the hours of 7:00 a.m. to 7:00 p.m. ▪ Require the selected contractor to have an advance outreach program to notify residents and business of schedules for any pile driving or other activity that may result in vibratory impacts. ▪ Require the selected contractor to monitor for damage to buildings resulting from vibrations caused by construction activity.

Table 4-20: Environmental Commitments for Mitigation of the Revised Preferred Alternative (continued)

Category	General Mitigation Measures	Construction Mitigation Measures
Water Quality (see Section 4.7 of the FEIS)	▪ Coordinate with District and appropriate federal agencies on evaluation of impacts and development/refinement of avoidance/ minimization/mitigation measures ▪ Implement requirements and conditions specified in federal and local permits ▪ Implement Best Management Practices (BMPs) and currently acceptable design and construction procedures ▪ Implement permanent erosion control measures and stormwater management systems in accordance with DDOT construction specifications and the National Pollutant Discharge Elimination System (NPDES) permitting program ▪ To the extent possible, designs shall include low impact development (LID) features	▪ Use of physical barriers (e.g., cofferdams) ▪ Construct the new Frederick Douglass Memorial Bridge and demolish the existing bridge primarily by barge and in accordance with District and federal laws ▪ Perform dewatering activities near contaminated zones in accordance with requirements specified in DDOE permits ▪ Comply with the DC Water Quality Standards for Surface Water (21 DCMR Ch.11), DC Water Management Plan per the Water Pollution Control Act of 1984 (DC Law 5-188), and Section 402 (NPDES) of the Clean Water Act. ▪ Develop and implement spill prevention, control, and countermeasure plans; erosion and sedimentation control plans; and plans for handling and disposal of contaminated soil, groundwater and river sediment, both known and unanticipated ▪ Coordinate with affected utility owners to minimize temporary service interruptions ▪ Review DDOE annual surveys of submerged aquatic vegetation at and near the existing and new bridges to determine if construction or demolition activities are harming aquatic vegetation ▪ Conduct pre- and post-construction surveys to determine if any changes occur to the benthic macroinvertebrate communities near the existing and new bridges as a result of construction activities on the river. ▪ Use impervious turbidity curtains to minimize the migration of sediments, and installed prior to the installation of any physical barriers surrounding construction areas within the river. ▪ Conduct pre- and post-construction sampling to determine any changes to the uppermost sediment layer and address any impacts as appropriate (Note: These commitments supersede the mitigation measures contained in the two biological assessments prepared for the Project based on the September 16, 2014 letter from the NMFS - see the Appendix K, Correspondence)
Wetlands (see Section 4.8 of the FEIS)	▪ If the PFO wetland located along Firth Sterling Avenue SE cannot be avoided, a mitigation plan may be prepared if required by the DDOE.	▪ 25—foot buffer fencing may be used to protect the two isolated wetlands located along Suitland Parkway during construction if required by DDOE.

Table 4-20: Environmental Commitments for Mitigation of the Revised Preferred Alternative (continued)

Category	General Mitigation Measures	Construction Mitigation Measures
Wildlife and Habitats (see Section 4.9 of the FEIS)	▪ Implement restoration plans for natural areas disturbed during construction ▪ Continue coordination with DDOT's Urban Forestry Administration regarding removal and planting of trees ▪ Implement time-of-year restrictions for in-stream work to avoid impacts to anadromous fish from February 15 to June 15 ▪ Coordinate with U.S. Fish and Wildlife Service regarding a *Migratory Bird Treaty Act of 1918* (16 USC 703-712) permit for relocation of an osprey nest ▪ Coordinate with U.S. Fish and Wildlife Service regarding Migratory Bird Treaty Act permit for relocation of multiple osprey nests ▪ Erect a peregrine falcon nest box on the new Frederick Douglass Memorial Bridge prior to demolition of the old bridge to provide an alternative nest site location once the old bridge is removed.	▪ Develop techniques during final design to reduce potential impacts to fishes from shock waves associated with pile driving, cofferdam installation, dredging, and bridge demolition ▪ New nest materials must be removed periodically to prevent the ospreys and peregrine falcons from nesting pursuant to permitting from the USFWS. ▪ Review DDOE annual surveys of submerged aquatic vegetation at and near the existing and new bridges to determine if construction or demolition activities are harming aquatic vegetation (Note: These commitments supersede the mitigation measures contained in the two biological assessments prepared for the Project based on the September 16, 2014 letter from the NMFS - see the Appendix K, Correspondence)
Floodplains	▪ Conduct an hydrology/hydraulic analysis of the final design of the new bridge ▪ Comply with DC's floodplain regulations: DC MR 20, Chapter 31 – Flood Hazard Rules and flood provisions of DCMR 12 – DC Construction Codes Supplement of 2008 (or latest amendment) for development within Special Flood Hazard Areas (SFHA) ▪ Have DDOE review and approve any development in SFHA in compliance with floodplain regulations	▪ No mitigation proposed
Geology, Topography and Soils (see Section 4.11 of the FEIS)	▪ Implement permanent erosion control measures and stormwater management systems in accordance with the DDOT construction specifications and the National Pollutant Discharge Elimination System permitting program ▪ Implement a site-specific revegetation plan in accordance with DDOT specifications	▪ Implement temporary erosion control measures and stormwater management systems in accordance with the DDOT construction specifications and the National Pollutant Discharge Elimination System permitting program ▪ Monitor erosion control measures and maintain or revise, as necessary during construction

Table 4-20: Environmental Commitments for Mitigation of the Revised Preferred Alternative (continued)

Category	General Mitigation Measures	Construction Mitigation Measures

Parklands	The following measures are proposed to mitigate impacts to Anacostia Park:
	▪ Reconstruct the existing driveway to be two-way with the following cross section. The remaining portion of the driveway in both NPS and DDOT ROW would be removed and restored as green space.
	▪ Design of new entrance cross section would consist of:
	  ▪ 8 foot shared use path
	  ▪ 4 foot green space
	  ▪ 22 foot driveway (2 lanes, 1 in each direction)
	  ▪ 4 foot green space
	  ▪ 8 foot shared use path
	  ▪ A total cross section would be 46 feet, while the roadway would be 22 feet.
	▪ Remove the two on and off ramps from the old Frederick Douglass Memorial Bridge and restore land to match the surrounding landscape including planting new trees.
	▪ Install a new park entrance sign.
	▪ Add signage coming off the new bridge, directing visitors to Anacostia Park.
	▪ Keep riverwalk trail open across the existing Frederick Douglass Memorial Bridge until the new bridge is complete. Provide new trails connections to the new Frederick Douglass Memorial Bridge.
		▪ No mitigation proposed

Cultural Resources (see Section 4.12 of the FEIS)	▪ See Appendix G, Amended and Restated Section 106 Memorandum of Agreement among the Federal Highway Administration, the District of Columbia State Historic Preservation Officer, the Advisory Council on Historic Preservation and the District Department of Transportation regarding the South Capitol Street Project within the District of Columbia , which was signed in June 2015.	▪ See Appendix G, Amended and Restated Section 106 Memorandum of Agreement.

Table 4-20: Environmental Commitments for Mitigation of the Revised Preferred Alternative (continued)

Category	General Mitigation Measures	Construction Mitigation Measures
Hazardous Materials (see Section 4.13 of the FEIS)	▪ Completion of further studies (Phase 2 Environmental Site Assessments) to define type and extent of contamination at specific properties ▪ Develop waste management plans based on results of additional studies ▪ Coordinate with DDOE concerning handling and disposal of contaminated materials ▪ Perform dewatering activities near contaminated zones in compliance with procedures and requirements specified in DDOE permits	▪ Implement a Health and Safety Plan and Waste Management Plan addressing worker and public safety, on-site management of contaminated materials, and disposal procedures for identified contaminated materials ▪ Development and implementation of spill prevention, control, and countermeasure plans ▪ Perform dewatering activities near contaminated zones in accordance with requirements specified in DDOE permits ▪ Implement DDOE requirements for appropriate management and disposal of contaminated materials ▪ Notify DDOE when construction begins and when areas of contamination are identified so that DDOE can work with the responsible party/parties regarding potential work plans for delineation and/or remediation ▪ Provide construction contractor with copies or references to the MEC information developed by the other parties and instruction to contact 911 if MECs are uncovered.
Visual Quality (see Section 4.14 of the FEIS)	▪ A visual quality management process will be used to evaluate proposals from candidate contractors for each segment of the Project. The process will include development of a visual quality manual and visual quality reviews of design/construction proposals involving NCPC, CFA and DC SHPO.	▪ No mitigation proposed
Pedestrian and Bicycle Facilities (see Section 4.15 of the FEIS)	▪ No mitigation proposed	▪ Maintain pedestrian and bicycle facilities during construction

Table 4-20: Environmental Commitments for Mitigation of the Revised Preferred Alternative (continued)

Category	General Mitigation Measures	Construction Mitigation Measures
Traffic and Transportation (see Section 4.16 of the FEIS)	▪ Develop Maintenance of Traffic Plans during final design to minimize construction impacts on traffic ▪ Complete separate Interstate Modification Reports for FHWA approval of changes at the I-295/Suitland Parkway interchange and the I-395/South Capitol Street interchange ▪ Perform additional analysis of long-term traffic operations during final design and development of mitigation measures as necessary.	▪ Implement Maintenance of Traffic Plans during construction ▪ Develop a regional outreach program to inform the public, local officials, and media about the construction schedule, major traffic delays, and alternate routes ▪ Maintain access to Metrorail stations for all modes ▪ Use signs and Intelligent Transportation Systems to inform the traveling public about detours and road closures On the Anacostia River: ▪ Properly secure all unmanned construction vessels to prevent drifting ▪ Clearly demarcate all access channels and sensitive areas (i.e., prohibited areas) using secured, floating visual devices (such as buoys) ▪ Provide lighting on construction vehicles, cranes, barges, or other equipment stationed or operating on the river ▪ Establish separate marine travel lanes in the upstream and downstream directions ▪ Coordinate with water users regarding waterway closures and construction equipment activities
Energy (see Section 4.18 of the FEIS)	▪ No mitigation proposed	▪ No mitigation proposed
Utilities		▪ Coordinate with the various utility owners in the Project Area throughout the design and construction phases of the Project.

chapter 5.0

section 4(f) evaluation

This chapter provides documentation necessary to support determinations required to comply with the provisions of the United States Code (USC) at 49 USC 303 and 23 USC 138 (hereinafter referred to as "Section 4(f)"), and its implementing regulations in the Code of Federal Regulations (CFR) at 23 CFR 774.

The FEIS contained a Section 4(f) Evaluation of the FEIS Preferred Alternative that covered two Section 4(f) resources, which are also historic properties: Suitland Parkway and the L'Enfant Plan of the City of Washington, DC. The FEIS Preferred Alternative would not affect any other Section 4(f) property. The evaluation concluded that there was no feasible and prudent avoidance alternative to the Section 4(f) use of the two Section 4(f) properties and that the FEIS Preferred Alternative included all possible planning to minimize harm to them resulting from such use. This conclusion was a result of a Programmatic Evaluation that was signed by DDOT and the DC SHPO, with concurrence from FHWA, based on meeting the requirements set forth in FHWA's *Final Nationwide Programmatic Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property* (2005). Therefore, an individual Section 4(f) Evaluation was not prepared.

The updated Section 4(f) Evaluation of the Revised Preferred Alternative addresses three Section 4(f) properties. The Revised Preferred Alternative will continue to require land from the L'Enfant Plan of the City of Washington, DC and Suitland Parkway. In addition, the Revised Preferred Alternative will include construction within Anacostia Park in order the maintain public access to the Poplar Point section of the park. The existing access to the park will be affected by the proposed east oval. This chapter documents Section 4(f) compliance with regards to these three properties.

5.1 Proposed Action

The Revised Preferred Alternative was the identified as the alternative that would best meet the Project's purpose and need. The major elements of the Revised Preferred Alternative include:

- A new Frederick Douglass Memorial Bridge across the Anacostia River
- Two traffic ovals located immediately west and east from the ends of the new bridge
- Conversion of South Capitol Street to a grand urban boulevard that accommodates multimodal transportation, which includes converting the grade-separated intersection with M Street into an at-grade intersection

- Streetscape design features along South Capitol Street and New Jersey Avenue SE, such as widened sidewalks and curbside lanes, and the provision of street trees, benches, and decorative streetlights
- Improved connections between I-295 and Suitland Parkway
- Conversion of the Suitland Parkway and Martin Luther King, Jr. Avenue SE bridge overpass into an urban diamond interchange

5.2 Administrative Background

Section 4(f) of the Department of Transportation Act of 1966 is codified at 49 USC 303, and FHWA policies and guidance. A Section 4(f) property includes parks and recreational areas of national, state, or local significance that are both publicly owned and open to the public; publicly owned wildlife and waterfowl refuges of national, state, or local significance that are open to the public to the extent that public access does not interfere with the primary purpose of the refuge; and historic sites of national, state, or local significance in public or private ownership regardless of whether they are open to the public (See 23 U.S.C. § 138(a) and 49 U.S.C. § 303(a)).

5.2.1 Section 4(f) Use

As noted in 23 CFR 774.3, Section 4(f) Approvals, a transportation project approved by a U.S. Department of Transportation (U.S. DOT) modal agency (for this Project, FHWA) may not use a Section 4(f) property unless it is determined that:

- There is no feasible and prudent avoidance alternative, as defined in 23 CFR 774.17, to the use of land from the property, and
- The action includes all possible planning, as defined in 23 CFR 774.17, to minimize harm to the property resulting from such use, or
- The use of the property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation or enhancement measures) committed to, will have a *de minimis* impact, as defined in 23 CFR 774.17, on the property

As defined in 23 CFR 774.17, the use of a protected Section 4(f) property occurs when any of the conditions below are met:

- When land [of the Section 4(f) property] is permanently incorporated into a transportation facility
- When there is a temporary occupancy of land [of the Section 4(f) property] that is adverse in terms of the [Section 4(f)] statute's preservation purpose as determined by the criteria in 23 CFR 774.13(d), or
- When there is constructive use of a Section 4(f) property as determined by the criteria in 23 CFR 774.15

FHWA may determine that the use of Section 4(f) property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures)

committed to by the applicant, will have a *de minimis* impact, as defined in 23 CFR 774.17, on the property. The *de minimis* impact criteria and associated determination requirements vary by type of Section 4(f) property involved. For example, the use of a historic site may be *de minimis* if the Administration renders a "no adverse effect" in accordance with Section 106 of the National Historic Preservation Act (NHPA). For a public park or recreational resource, a *de minimis* impact is one that will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f).

5.2.2 Avoidance Alternatives and Minimization of Harm

A feasible and prudent avoidance alternative prevents using Section 4(f) property and does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property. The feasible and prudent standard applies only to an alternative that fully avoids any use of a Section 4(f) property. It would not apply when choosing among alternatives that require the use of at least one Section 4(f) property. In assessing the importance of protecting the Section 4(f) property, it is appropriate to consider the relative value of the resource to the preservation purpose of the statute.

An alternative is not feasible if it cannot be built as a matter of sound engineering judgment.

An alternative is not prudent if:

- It compromises a project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need
- It results in unacceptable safety or operational problems
- After reasonable mitigation, it still causes:
  - Severe social, economic, or environmental impacts
  - Severe disruption to established communities
  - Severe disproportionate impacts to minority or low income populations, or
  - Severe impacts to environmental resources protected under other Federal statutes
- It results in additional construction, maintenance, or operational costs of an extraordinary magnitude
- It causes other unique problems or unusual factors, or
- It involves multiple factors that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude

All possible planning to minimize harm means that all reasonable measures identified in the Section 4(f) evaluation to minimize harm or mitigate for adverse impacts and effects must be included in the Project. For parks or recreational resources, reasonable mitigation measures may involve a replacement of land and/or facilities of comparable value and function, or monetary compensation to enhance the remaining land. For historic sites, reasonable measures normally serve to preserve the historic activities, features, or attributes of the site as agreed by FHWA and the official(s) with jurisdiction over the Section 4(f) property in accordance with the Section 106 consultation process outlined 36 CFR 800, Protection of Historic Properties.

If there is no feasible and prudent avoidance alternative and the use is not *de minimis*, then FHWA may approve only the alternative that causes the least overall harm in light of the statute's preservation purpose. The least overall harm is determined by balancing the following factors, which are identified in 23 CFR 774.3(c)(1):

- The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)
- The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection
- The relative significance of each Section 4(f) property
- The views of the official(s) with jurisdiction over each Section 4(f) property
- The degree to which each alternative meets the purpose and need for the Project
- After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f)
- Substantial differences in costs among the alternatives

If two or more alternatives are "substantially equal" in terms of the least overall harm to the 4(f) property, then FHWA may select any one of the alternatives being considered. Regardless, the alternative selected must include all possible planning to minimize harm to Section 4(f) property, such as compliance with Section 106, as applicable.

5.2.3 Individual and Programmatic Section 4(f) Evaluations

FHWA policy recommends the preparation of a written Section 4(f) evaluation, which can consist of an Individual Section 4(f) Evaluation or a Programmatic Section 4(f) Evaluation.

FHWA's *Section 4(f) Policy Paper* (USDOT, 2012) indicates that an "individual Section 4(f) Evaluation must be completed when approving a project that requires the use of Section 4(f) property if the use . . . results in a greater than *de minimis* impact and a programmatic Section 4(f) evaluation cannot be applied to the situation."

A Programmatic Section 4(f) Evaluation applies to a project that meets pre-established conditions that satisfy the requirements of Section 4(f) for no feasible and prudent avoidance alternatives and includes all possible planning to minimize harm. These conditions generally relate to the type of project; the severity of impacts to Section 4(f) properties; the evaluation of alternatives; the establishment of a procedure to minimize harm and to mitigate impacts; coordination with appropriate entities; and the appropriate class of NEPA action.

A Programmatic Section 4(f) Evaluation is a time-saving procedural option for certain minor uses of Section 4(f) property. They apply a specific set of criteria to standardize the evaluation of avoidance alternatives, which simplifies the evaluation. A Programmatic Section 4(f) Evaluation may apply to a particular project only if the evaluation meets specific conditions. FHWA has issued five Nationwide Programmatic Section 4(f) Evaluations:

- Section 4(f) Statement and Determination for Independent Bikeway or Walkway Construction Projects
- Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges
- Final Nationwide Section 4(f) Evaluation and Approval for Federally-Aided Highway Projects with Minor Involvements with Historic Sites
- Final Nationwide Section 4(f) Evaluation and Approval for Federally-Aided Highway Projects with Minor Involvements with Public Parks, Recreation Lands, Wildlife and Waterfowl Refuges,
- Nationwide Programmatic Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property

The Nationwide Programmatic Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property (Net Benefit Evaluation) is applicable to federally-assisted transportation improvement projects on existing or new alignments that will use a Section 4(f) property which, in the view of FHWA and agencies with jurisdiction over the property, will result in a "net benefit" to the property. The Programmatic Section 4(f) Evaluation can be applied to any project regardless of the class of action under NEPA.

A net benefit is achieved when the transportation use, the measures to minimize harm, and the mitigation measures incorporated into a project have an overall result of enhancing the Section 4(f) property when compared to the No Build and the avoidance alternatives. Net benefit also considers the present condition of the Section 4(f) property, and the activities, features, and attributes that qualify the property for Section 4(f) protection. Conversely, a project does not achieve a net benefit if it will result in the substantial diminishment of the function or the value that makes the property eligible for Section 4(f) protection.

The applicability criteria for a Net Benefit Evaluation include the following, as specified in FHWA's guidance on Net Benefits to a Section 4(f) Resource:

- The proposed project uses a Section 4(f) park, recreation area, wildlife or waterfowl refuge, or historic site.
- The proposed project includes all appropriate measures to minimize harm and subsequent mitigation necessary to preserve and enhance those features and value of the property that originally qualified the property for Section 4(f) protection.
- For historic properties, the proposed project does not require the major alteration of the characteristics that qualify the property for the NHRP such that the property would no longer retain sufficient integrity to be considered eligible for listing. For archaeological sites,

the Project does not disturb or remove archaeological resources that have been determined important for preservation in place rather than for the information that can be obtained through data recovery. The determination of a major alteration or importance to preserve in place will be based on consultation consistent with 36 CFR Part 800.

- For historic properties, consistent with 36 CFR Part 800, there must be an agreement among the State Historic Preservation Officer and/or Tribal Historic Preservation Officer, as appropriate, FHWA, and the Applicant (in this case, DDOT) on measures to minimize harm when there is a use of Section 4(f) property; and that such measures will result in a net benefit to the Section 4(f) property.
- The officials with jurisdiction over the Section 4(f) property agree in writing with the assessment of impacts; the proposed measures to minimize harm; and the mitigation measures necessary to preserve, rehabilitate, and enhance those features and values of the Section 4(f) property; and that such measures will result in a net benefit to the Section 4(f) property.
- FHWA determines that the facts of a project match those set forth in the Applicability, Alternatives, Findings, Mitigation and Measures to Minimize Harm, and Coordination and Public Involvement sections of this Programmatic Section 4(f) Evaluation.

Any project that satisfies these criteria may use the Net Benefit Evaluation and will not require the preparation of an individual Section 4(f) evaluation.

5.3 Purpose and Need

The purpose and need for the Project remains the same as was described in the FEIS. In summary, the purpose of the South Capitol Street Project is to improve safety, multimodal mobility and accessibility, and support economic development. The Project will transform the existing corridor into an urban gateway to the U.S. Capitol and District of Columbia's Monumental Core. Transportation improvements (i.e., the Preferred Alternative) were identified to incorporate long-term environmental sustainability and context sensitive design. Specifically, the Project addresses the following needs.

- Safety: The design and deteriorating condition of the transportation infrastructure in the corridor results in poor safety conditions for motorists, bicyclists, pedestrians, and transit riders.
- Mobility: The lack of critical regional roadway connections and facilities for bicyclists and pedestrians support the need to improve mobility in the South Capitol Street Corridor.
- Accessibility: Several key destinations in or adjacent to the corridor are difficult to reach using the existing transportation infrastructure. Grade separations, median barriers, and ramp and intersection configurations limit access to activity centers for motorists, bicyclists, pedestrians, and transit riders.
- Economic Development: The density of employment and residential development forecasted for the area highlights the need to support economic growth. Public investments have increased employment and will stimulate additional private investment in new

residential, office and retail developments. As economic development continues to occur within the Project Area, additional demand will continue to be placed on transportation infrastructure to meet future transportation needs.

5.4 Section 4(f) Resources

The Project Area contains a number of Section 4(f) properties, including parklands and historic properties that are both owned by and accessible to the public (see Figure 5-1). The Revised Preferred Alternative will result in the Section 4(f) "use" of three Section 4(f) resources: the L'Enfant Plan, Suitland Parkway and Anacostia Park. Due to design changes, the uses differ from the FEIS Preferred Alternative. The Revised Preferred Alternative will not have an adverse effect on Suitland Parkway, which was listed in the NRHP in 1995 as part of the *Parkways of the National Capital Region Multiple Property Submission (1913–1965)* (NPS, 2009), under Section 106 of the National Historic Preservation Act. The Revised Preferred Alternative will require construction within Anacostia Park to mitigate the impacts to public access into the park's Poplar Point section from the proposed east oval. The park qualifies as a Section 4(f) resource as a park or recreational area of national, state, or local significance that is both publicly owned and open to the public. The park is eligible for inclusion in the National Register of Historic Places.

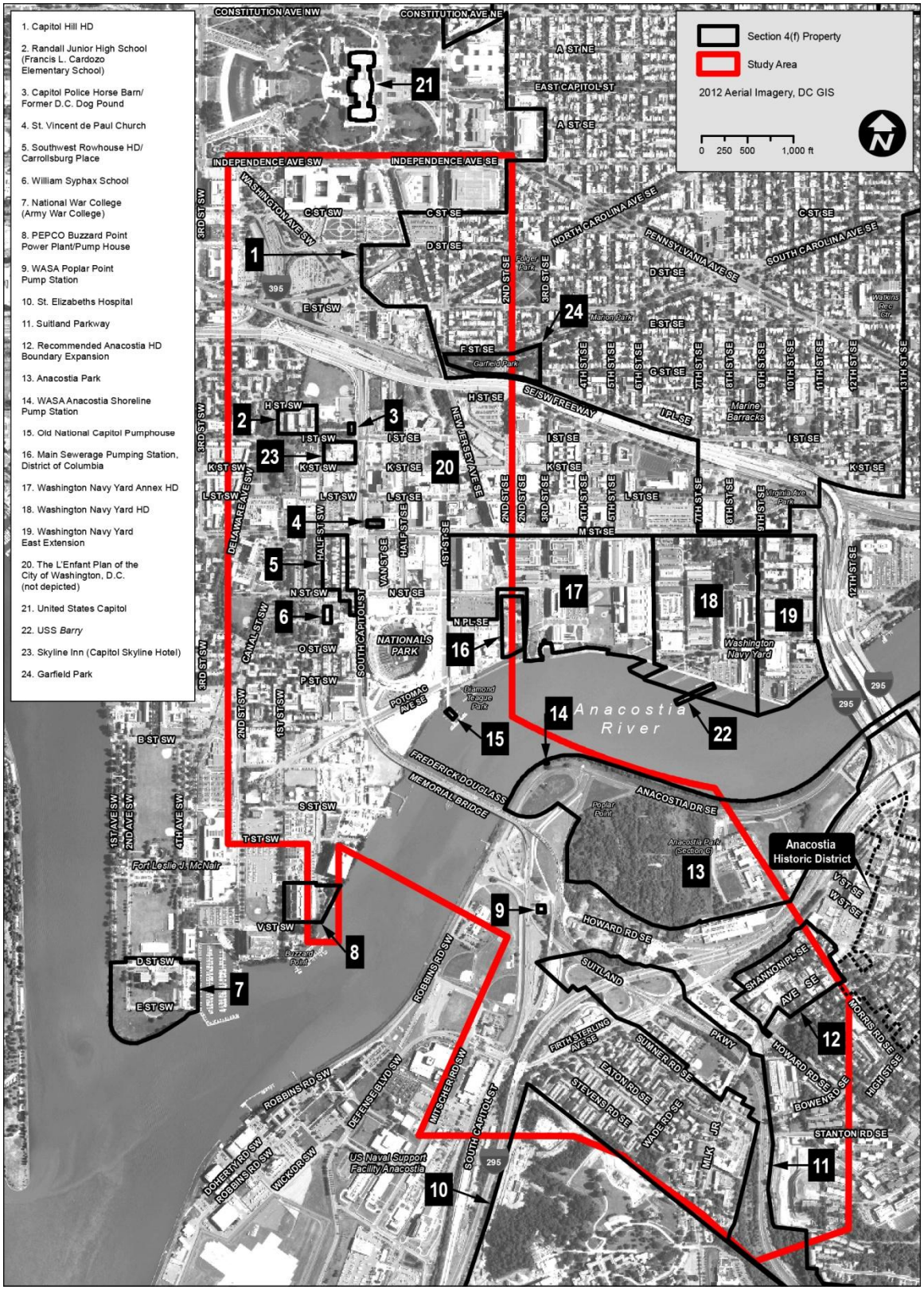
5.4.1 The L'Enfant Plan of the City of Washington, DC

The L'Enfant Plan of the City of Washington, which was listed in the National Register of Historic Places in 1997, is a Baroque city plan with Beaux Arts modifications designed by Major Pierre-Charles L'Enfant in 1791. Roughly bounded by Florida Avenue from Rock Creek NW to 15 Street NE, south to C Street, and east to the Anacostia River, the plan consists of regular orthogonal street grids with numerically and alphabetically designated streets, intersected by diagonal avenues. It also consists of historic and contemporary system of parks and medians. The 1901–02 McMillan Commission recommendations resulted in physical changes to the L'Enfant Plan necessary for urban development.

The Revised Preferred Alternative will affect areas located within the boundaries of the street system along South Capitol Street, which is one of the plan's principal axes leading directly to the U.S. Capitol. Four diagonally oriented roadways are located within the South Capitol Street Corridor: Delaware Avenue SW, New Jersey Avenue SE, Potomac Avenue, and Water Street SW.

South Capitol Street, from Independence Avenue in the north to S Street at the edge of the Anacostia River, is a contributing element to the L'Enfant Plan. It retains its original alignment and still functions as a primary axial thoroughfare. Potomac Avenue extends from 1st Street SW to 1st Street SE and is then interrupted by the Washington Navy Yard and the DC Water Poplar Point Pump Station for several blocks before it begins again at M Street SE and 8th Street SE, which is well beyond the South Capitol Street Corridor.

Figure 5-1: Section 4(f) Properties In and Around the Project Area



District Department of Transportation

In addition to South Capitol Street, two other north-south alignments are considered to be contributing elements to the L'Enfant Plan of the City of Washington, DC: Half Street SW and Half Street SE. However, only the sections of these streets south of the Southeast-Southwest Freeway are considered to be contributing elements to the L'Enfant Plan of the City of Washington, DC. For Section 4(f) purposes, the DC SHPO is the official with jurisdiction over the L'Enfant Plan of the City of Washington, DC (23 CFR 774.17).

Compared with the FEIS Preferred Alternative, the Revised Preferred Alternative has a slightly smaller traffic oval at the intersection of South Capitol Street and Potomac Avenue, as proposed by the FEIS Preferred Alternative. The physical change to this intersection constituted an adverse effect under Section 106 and a use under Section 4(f) of the L'Enfant Plan. The Net Benefit Evaluation for this Section 4(f) resource was updated (see Sections 5.6 and 5.7).

5.4.2 Suitland Parkway

Suitland Parkway extends eastward roughly from the approaches to the Frederick Douglass Memorial Bridge to the northern entrance of Andrews Air Force Base (AFB), in Maryland. It links the airfield at AFB, the primary arrival point for the President, U.S. government officials, and visiting foreign dignitaries, directly with South Capitol Street, the U.S. Capitol, the White House, and other federal office buildings. Suitland Parkway is 9.18 miles in length, with 2.8 miles located within the District and the other 6.38 miles within the State of Maryland.

Suitland Parkway was listed in the NRHP in 1995 as part of the *Parkways of the National Capital Region Multiple Property Submission (1913–1965*) (NPS, 2009). Right-of-way was acquired from 1942 to 1944 to construct the parkway. NRHP nomination form identifies Suitland Parkway as a historic district with 85 contributing and two noncontributing structures, including bridges, culverts, and drop inlets. The original bridges in Suitland Parkway are concrete arch bridges with spandrels and wing walls faced with Maryland stone and trimmed in dimensioned North Carolina granite. Most of the 39 culverts have stone-faced headwalls. The Martin Luther King, Jr. Avenue overpass or bridge is one of the contributing bridges and is located in the Project Area. For most of its length, and along the section located within the District, Suitland Parkway retains the original concept as a grade-separated parkway of high design standards with separate eastbound and westbound travel lanes centered about a grassy median and double-frame arched structures.

Suitland Parkway was determined to be eligible for the NRHP due its significance in the areas of Transportation and Landscape Architecture under National Register Criterion A (for its association with the national parkway system and as a major entryway to the federal city compatible with the L'Enfant Plan). It is also significant under Criterion C as "a utilitarian roadway with design features intended to move traffic expeditiously, but with elements of design intended to convey a scenic driving experience characteristic of earlier parkways".

The NRHP boundary for Suitland Parkway begins approximately 1,300 feet east of the Anacostia River or just west of its interchange with I-295. The Frederick Douglass Memorial Bridge and its approaches are not part of this historic property. The width of the boundary is approximately 1,200 feet centered generally along the parkway alignment. In December 1972, the National

Park Service (NPS) transferred jurisdiction of the Suitland Parkway "for parkway purposes" to the District.

The Revised Preferred Alternative proposes to realign the parkway near its approach to the proposed east traffic oval and will convert the Martin Luther King, Jr. Avenue SE overpass into a diamond urban interchange. Although a small portion of the parkway will be altered, no contributing built or landscape features within the historic property boundary will be affected. Therefore, the historic property's integrity of location, design, materials, and workmanship will remain unaffected. For these reasons, the proposed transportation infrastructure changes to the parkway were determined to have "no adverse effect" on the historic property in accordance with NHPA Section 106 (16 USC 470 and 36 CFR 800). The DC SHPO concurred with this determination in a letter dated December 4, 2014. Therefore, a finding was made that the Section 4(f) use of the parkway is a *de minimis* impact.

5.4.3 Anacostia Park

Anacostia Park was created through the Anacostia River Flats Act of 1924. A seawall was constructed along the riverbanks, and adjacent tidal mudflats were backfilled to create much of the park that exists today. The NPS obtained jurisdiction of the park in 1933. Recreational and park features within Section C, commonly known as Poplar Point, include open space with public access along the river's edge and athletic fields on the northeast corner. Non-park or non–recreational uses in Poplar Point include the NPS complex, which includes U.S. Park Police facilities, and restricted areas containing contaminated materials from past uses. Roadway access into Poplar Point is provided from Good Hope Road, Howard Road, Anacostia Drive, and Suitland Parkway. The park is also near the Anacostia Metrorail Station.

As a historic property, Anacostia Park is a Section 4(f) resource. It is considered to be historically significant because it provides the opportunity to observe the history of the nation's policies on rivers from pre-Columbian times to present. Created from mud flats during the early 20th century, it was an integral part of the 1902 McMillan Plan (formally known as the 'The Improvement of the Park System of the District of Columbia', Senate Report No. 166, 57th Congress, 1st Session). In 1932 it became the Bonus Army's base of operation and a shantytown was established. Later, a golf course was constructed on the site for African Americans to forestall desegregation of public facilities. The park also serves as a model for the use of floodplains as natural park features to maintain water quality and reduce the risks of flooding. Anacostia Park is eligible for the National Register of Historic Places.

From legislation passed by Congress in 2006 (*Federal and District of Columbia Government Real Property Act of 2006*), Poplar Point may be transferred to the District for redevelopment as a mixed-use development. The District's Deputy Mayor's Office for Planning and Economic Development has envisioned the development to include a world-class 70-acre waterfront park that would serve as a green gateway to the Anacostia River and a series of river parks. Poplar Point will remain under federal ownership and NPS jurisdiction until further details about the development are resolved.

The Revised Preferred Alternative will require a permanent incorporation of park property in a transportation project due to the construction of an access road and two shared use paths within the Poplar Point area of Anacostia Park (see Figure 5-2). The Revised Preferred Alternative's east oval will necessitate the closure of the existing park access roads. To mitigate the loss of access, the Revised Preferred Alternative will reconstruct an existing single-lane one-way access road that links Suitland Parkway and I-295 (via Howard Road) to Anacostia Drive SE, which provides roadway circulation within the park. The new access road will provide one lane in each direction (see Figure 5-3). It will connect the northeast leg of the east traffic oval with Anacostia Drive, thereby maintaining access to the park for motorists traveling on South Capitol Street, Suitland Parkway, and I-295.

Figure 5-2: Plan View of East Oval and New Anacostia Drive Connector

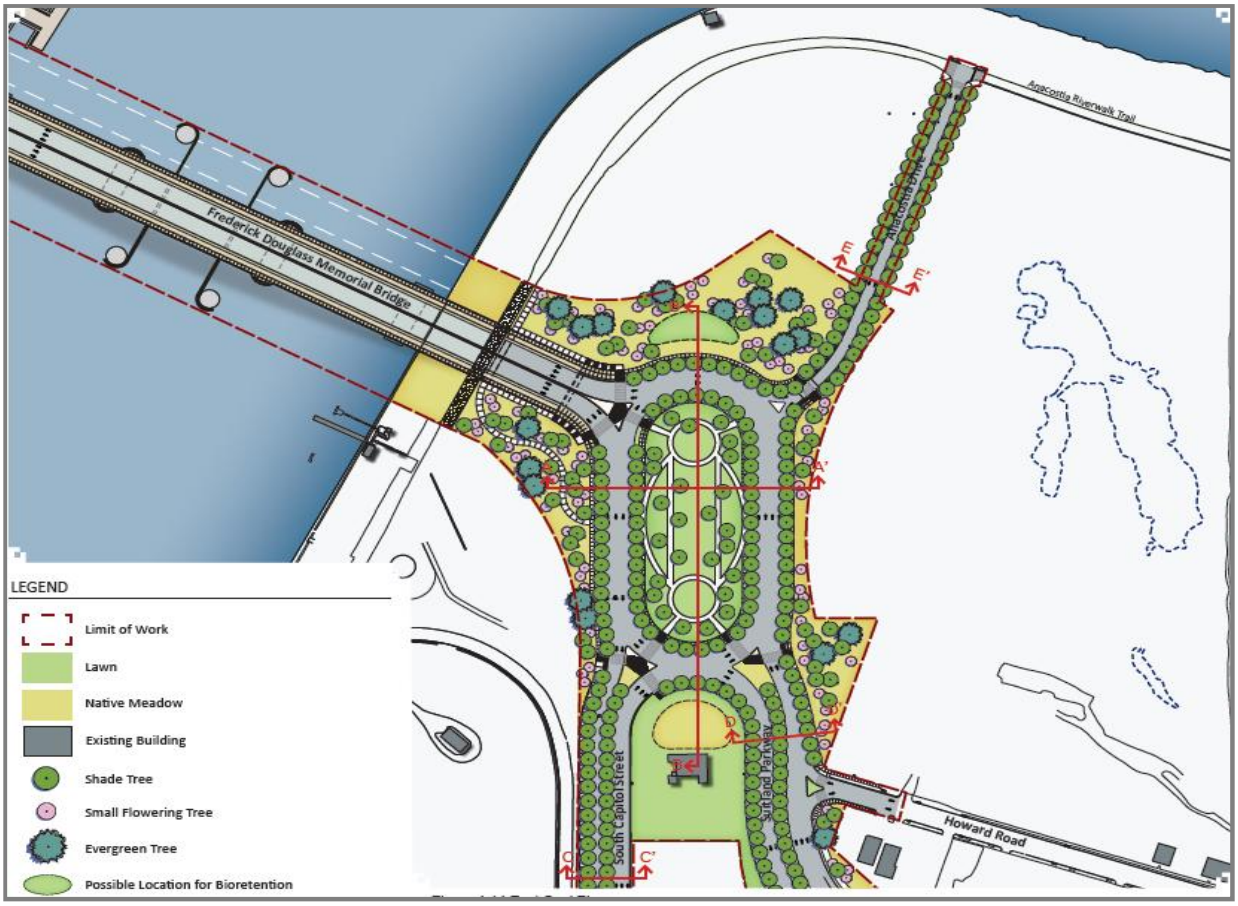
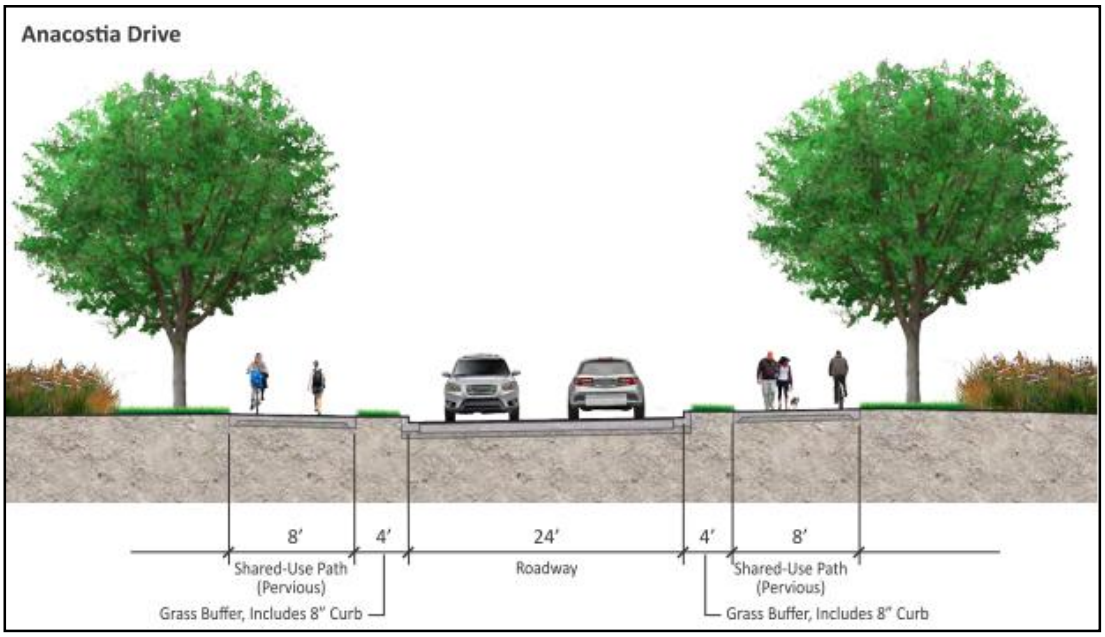


Figure 5-3: Proposed Typical Section of New Anacostia Drive Connector and Shared-Use Paths



Other existing ramps linking Anacostia Drive SE to South Capitol Street will be removed as they will no longer be needed, resulting in a net loss of road pavement. These ramps provide vehicular access to and from the park. The proposed roadway access will introduce approximately 0.52 acres of impervious surfaces within Anacostia Park. Approximately half of this area is already an impervious surface. The Project will remove approximately 0.75 acres of impervious surfaces within Anacostia Park. Therefore, within the park the Revised Preferred Alternative will increase green space by approximately 0.5 acres. The connecting ramps within the adjacent DDOT right-of-way will also be removed and converted to green space. The net effect will be a larger contiguous green space at the gateway to the park.

A 12-foot-wide shared use path (suitable for pedestrians and cyclists) constructed of pervious materials will be provided on each side of the new access road. This will connect the River Walk Trail in the park with the South Capitol Street shared use paths. The NPS will maintain ownership of the reconstructed access road and the shared use paths within the park boundary. No other section of Anacostia Park property will be converted to a transportation use by the Project either owned by NPS or other entity.

The NPS will have the opportunity to review design plans for elements of the Project on park property, including landscaping plans along the new access roadway and where existing ramps will be removed. The Project elements on park property will require a Special Use Permit. Therefore, construction cannot be initiated until NPS has granted this permit. To expedite the NPS review of design plans and the processing of the Special Use Permit, DDOT will include any engineering specifications provided by NPS in the Project's Phase 1 Request for Proposal to the

short-list design-build contractors. (The elements of the Project within park property will be part of construction Segment 1.) In addition DDOT has also agreed to erect Anacostia Park signage on public right-of-way, such as within the east oval, and to create a welcoming entrance into the park from the east oval through the use of signage and landscaping. All signage intended to alert motorists about Anacostia Park and its entrance located at the northeast leg of the east traffic oval shall be made in accordance with NPS standards.

A determination that the proposed construction within Anacostia Park is a *de minimis* impact, as defined in 23 CFR 774.17, was made because the nature and the magnitude of the Project's elements (reconstructed access road and shared-use paths) within the park will not adversely affect the features, attributes, or activities qualifying the park as a Section 4(f) resource. The Poplar Point section of the park, including the Project elements within the park, will remain under NPS jurisdiction. The Project elements are meant to maintain public access between the park and South Capitol Street, Suitland Park, and I-295. The improvements will consolidate access onto a single access road resulting in a more prominent gateway. It will use less roadway pavement than the existing access roads and ramps and create a larger contiguous green space at the park entry.

As a historic property, Anacostia Park is a Section 4(f) resource. A "no adverse effect" determination regarding Anacostia Park in accordance with NHPA Section 106 was made, and the DC SHPO concurred in a letter dated December 4, 2014. In addition, in a letter dated January 28, 2015, the FHWA requested that the NPS concur with the *de minimis* impact finding. The NPS provided written concurrence on February 5, 2015, which is located in Appendix K. Therefore, a finding was made that the Section 4(f) use of Anacostia Park is a *de minimis* impact.

5.4.4 Other Section 4(f) Resources

The Project Area encompasses other Section 4(f) properties, including parklands and historic properties that are both owned by and accessible to the public (see Figure 5-1). The Revised Preferred Alternative will not require a Section 4(f) use or constructive use of these properties. The reasons for this finding are provided below.

Garfield Park

Garfield Park is located near the portion of the Project Area along New Jersey Avenue SE. Originally called Town House Square, the park is one of the 17 original land appropriations by Congress in 1791 when it was more than 23 acres in size. Today the park is currently 9.23 acres in size, and is bounded by the Southeast-Southwest Freeway, Virginia Avenue SE, New Jersey Avenue SE, F Street SE, South Carolina Avenue SE, and 3rd Street SE. Its recreational uses include tennis, basketball, horseshoes, volleyball and bocce. The park also includes a state-of-the art playground, provides for passive recreation, and has one of the few sloped areas within the neighborhood that can be used for sledding. Garfield Park is also a contributing element to the Capitol Hill Historic District.

The park was originally owned and managed by the federal government, but in 1972, ownership was transferred from the NPS to the District, and now the park is now under the jurisdiction of the District's Department of Parks and Recreation (DPR). The Friends of Garfield Park, a non-profit organization founded in 1998, is also active in the management and maintenance of Garfield Park. Recently, the group led the development of park improvements, such as installing benches and upgraded trash cans, repairing the stone wall along Virginia Avenue SE, and maintaining and replacing the trees in the park. The park contains a wide variety of trees, many of which are of substantial size and age.

The Revised Preferred Alternative will not require land from Garfield Park; therefore, there will be no direct Section 4(f) use of the property. In addition, proposed improvements adjacent to the park will be on New Jersey Avenue SE and consist of enhanced streetscape and pedestrian amenities. These improvements will not result in the constructive use of the park.

Capitol Hill Historic District

The Project Area is located within in a small portion in the westernmost part of the Capitol Hill Historic District (CHHD). CHHD, which is listed in the National Register of Historic Places, is primarily a residential area with two-to-four-story row houses and small frame houses in a variety of architectural styles including Federal, Italianate, Greek revival, Queen Anne, Romanesque revival, and vernacular interpretations. It also includes religious, commercial, institutional and military buildings, as well as parks. The neighborhood began as a boarding house community for members of Congress, and is one of the District's oldest and largest residential communities. CHHD is roughly bounded by the U.S. Capitol; F Street NE and Constitutional Avenue to the north; 14th, 13th, and 11th Streets SE to the east, and including some areas south of I-695 extending to the Washington Navy Yard.

Although the CHHD contains a high number of contributing resources, the Revised Preferred Alternative would not affect any of the properties. The Revised Preferred Alternative proposes relatively minor streetscape improvements in locations where the Project crosses into the CHHD. Therefore, there would be no Section 4(f) use of the CHHD.

Other Historic Properties

The APE contains the following additional historic properties from which the Revised Preferred Alternative will not require a Section 4(f) use:

- United States Capitol
- Randall Junior High School
- Capitol Police Horse Barn/Former DC Dog Pound
- Southwest Rowhouse Historic District
- St. Vincent de Paul Church
- Southwest Rowhouse Historic District/Carrollsburg Place
- William Syphax School
- National War College
- PEPCO Buzzard Point Power Plant/Pump House
- WASA Poplar Point Pump Station

- Anacostia Historic District Boundary Expansion
- St. Elizabeths Hospital
- WASA Anacostia Shoreline Pump Station
- Old National Capitol Pumphouse
- Main Sewerage Pumping Station, District of Columbia
- Washington Navy Yard Annex Historic District
- Washington Navy Yard Historic District
- Washington Navy Yard East Extension
- Display Ship *Barry*
- Skyline Inn

5.5 Alternatives Considered

The Project considered and evaluated a wide range of alternatives, including:

- A transportation system management alternative
- A mass transit alternative
- Improvements to bicycle and pedestrian facilities
- Improvements of existing roadway facilities

Since none of these alternatives met the purpose and need for the Project, they were subsequently eliminated from further consideration as stand-alone alternatives.

Chapter 2.0 of the FEIS summarized the alternative development process used for the South Capitol Street Project, and described the alternatives examined in the FEIS: the No Build Alternative, Build Alternatives 1 and 2, and the FEIS Preferred Alternative, which was a modification of Build Alternative 2.

Chapter 2.0 of this Supplemental FEIS describes the design changes to the FEIS Preferred Alternative since publication of the FEIS, resulting in the Revised Preferred Alternative. The following sections briefly describe the alternatives contained in the FEIS and summarize the design changes associated with the Revised Preferred Alternative.

5.5.1 No Build Alternative

The No Build Alternative would not include any new major construction, although other planned and committed projects in the Project Area would move forward. Improvements implemented under this alternative would be limited to short-term restoration and maintenance of existing infrastructure.

The FEIS concluded that the No Build Alternative would not address the Project's purpose and need for improving safety, multimodal mobility, and accessibility, and it would not support economic development within the South Capitol Street Corridor. However, the No Build Alternative would not change the physical conditions of the Section 4(f) properties identified in Section 5.4.

5.5.2 Build Alternatives 1 and 2

The FEIS proposed two build alternatives, Alternatives 1 and 2, for the reconstruction of South Capitol Street, Independence Avenue and Martin Luther King, Jr. Avenue SE. These build alternatives included replacing the Frederick Douglass Memorial Bridge with a new bridge designed at an angle (compared with the existing bridge). The new bridge would be an architecturally distinctive structure on the Anacostia Waterfront while still providing a moveable span to preserve the existing navigation channel. The alternatives completed missing connections and turning movements at major roadways; formed a landscaped boulevard along South Capitol Street; and improved pedestrian and bicycle facilities. The differences between Build Alternatives 1 and 2 are as follows:

- Alternative 1 reconstructed the South Capitol Street intersections at I, N, O, and P Streets, whereas Alternative 2 reconstructed the South Capitol Street intersections at K, L, and M Streets.
- Alternative 1 provided an at-grade signalized intersection at the intersection of South Capitol Street and Potomac Avenue, whereas Alternative 2 provided an at-grade traffic oval at this location.
- At the eastern approach to the new Frederick Douglass Memorial Bridge, Alternative 1 provided an at-grade signalized intersection connecting South Capitol Street, Suitland Parkway, and Howard Road SE, whereas Alternative 2 provided an at-grade traffic circle to connect these roadways.
- At the I-295/Suitland Parkway interchange, Alternative 1 provided a ramp connecting southbound I-295 with northbound Suitland Parkway only; whereas Alternative 2 converted this interchange into an urban diamond interchange allowing all movements between the two highways.
- Alternative 1 widened the Martin Luther King, Jr. Avenue SE Bridge over Suitland Parkway to provide for a new 12-foot-wide multi-use trail, whereas Alternative 2 provided an interchange between the two roadways.

Four bridge types were considered for the new Frederick Douglass Memorial Bridge: cable-stayed swing, stayed bascule, arched bascule, and retractile. Of these four, Alternative 1 did not accommodate a cable-stayed bridge, whereas Alternative 2 accommodated all four bridges.

Both build alternatives would meet the purpose and need for the Project, and their impacts to the natural and built environments would be very similar. Both build alternatives would require a Section 4(f) use of Suitland Parkway and the L'Enfant Plan.

5.5.3 FEIS Preferred Alternative

The FEIS Preferred Alternative was a modification or refinement of Build Alternative 2 in response to agency and public comments. A bridge type was selected (arched bascule), and the alignment of the new bridge shifted slightly to reduce the amount of right-of-way needed from Joint Base Anacostia Bolling (JBAB). Other major elements that distinguished the FEIS Preferred Alternative from Build Alternative 2 included:

- Eliminated work already completed to South Capitol Street under the Near-Term Improvements Project
- Reduced the total size of the traffic oval at the intersection of South Capitol Street and Potomac Avenue, from approximately 6.1 acres total to 5.7 acres, and included a connection to R Street SW
- Removed the stairs from the new bridge to the Anacostia Riverwalk on both sides of the river
- Reduce impacts to the heliport and JBAB on the west and east sides of the river, respectively
- Shifted the location of the traffic circle on the east side of the river slightly to the northeast
- Added a connection between Anacostia Drive and Howard Road
- Eliminated certain improvements to Firth Sterling Avenue, the southern section of Howard Road, South Capitol Street south of Firth Sterling Avenue, and the east section of Potomac Avenue
- Designed the Suitland Parkway/I-295 as a modified diamond interchange instead of an urban diamond interchange
- Adjusted the Sheridan Road alignment near the widened Suitland Parkway to minimize impacts to the Sheridan Terrace housing development
- Maintained the general configuration of the existing intersection and avoided closure of Sheridan Road at the intersection of Martin Luther King, Jr. Avenue and Howard Road
- Maintained Howard Road SE in its existing configuration

The FEIS Preferred Alternative resulted in fewer and less severe impacts to the natural and built environments, compared with Build Alternative 2. The FEIS Preferred Alternative had fewer piers in the Anacostia River, reduced the potential impacts to the heliport and the JBAB, and avoided closing Sheridan Road at the intersection of Martin Luther King, Jr. Avenue SE and Howard Road. However, the FEIS Preferred Alternative still required a Section 4(f) use of Suitland Parkway and the L'Enfant Plan.

5.5.4 Revised Preferred Alternative

Following completion of the FEIS, design changes were made to the FEIS Preferred Alternative, resulting in the Revised Preferred Alternative. The Revised Preferred Alternative was identified as the alternative that would best meet the Project's purpose and need. The major elements of the Revised Preferred Alternative include the following:

- Aligned the new Frederick Douglass Memorial Bridge parallel to and directly adjacent to the south side or downstream from the existing bridge superstructure. This bridge alignment would avoid the need to obtain right-of-way from JBAB. In addition, the bridge would have a fixed span, not a moveable span as proposed in FEIS Preferred Alternative.
- Provided a west traffic oval.
- Provided a traffic oval at the eastern end of the new bridge similar in size and shape to the west traffic oval. The east traffic oval would be located entirely within the existing DDOT right-of-way and connect with the realigned South Capitol Street and Suitland Parkway.
- At the I-695/Suitland Parkway interchange, adjusted the grade of Ramp B (southbound I-295 to westbound Howard Road SE) from 9 percent (substandard for an interstate highway ramp) to 6.5 percent.
- Replaced a portion of the I-295 Bridge over Firth Sterling Avenue SE and an inactive railroad right-of-way.
- At the Martin Luther King, Jr. Avenue SE overpass at Suitland Parkway, configured the proposed ramps into an urban diamond interchange, instead of an interchange with center ramps.
- Changed the eastbound I-695 ramp to southbound South Capitol Street to an urban interchange ramp with South Capitol Street.

Chapter 2.0 of this Supplemental FEIS contains a more detailed description of the Revised Preferred Alternative.

5.5.5 Avoidance Alternatives

The No Build Alternative would not be a feasible and prudent avoidance alternative because it would not meet the purpose and need for the Project. Additional avoidance alternatives were identified. They include:

- Limiting the transportation improvements to the existing alignment, including replacing the Frederick Douglass Memorial Bridge with a new bridge precisely along its current location. This alternative is not considered to be prudent and feasible because of the community disruption that would result during construction and its marginal ability to meet the purpose and need for the Project.
- Constructing along an entirely new alignment, including the new bridge. The two build avoidance alternatives were found not to be feasible and prudent in the Programmatic Section 4(f) Evaluation for the FEIS Preferred Alternative primarily because they would not meet the purpose and need for the Project (Section 5.5 of the FEIS).

5.6 Use of the L'Enfant Plan of the City of Washington, DC

The Revised Preferred Alternative will require a Section 4(f) use of the L'Enfant Plan of the City of Washington, DC. This section describes the potential impacts to the L'Enfant Plan from the Revised Preferred Alternative.

The purpose of the Project is to transform the existing South Capitol Street Corridor into an urban gateway to the U.S. Capitol and the District's Monumental Core. As such, elements of the Project are designed to reestablish South Capitol Street as a major axial gateway into the Nation's Capitol, which is consistent with the original intent of the L'Enfant Plan.

The Revised Preferred Alternative is similar to the FEIS Alternative in adding traffic signals, reconfiguring travel lanes and intersections, introducing a new traffic oval on South Capitol Street at Potomac Avenue, and providing connections with P and S Streets. Other proposed changes to the streets in the L'Enfant Plan include:

- Planting of street trees at regular intervals along both sides of South Capitol Street and installation of raised, precast landscape planters with layered plantings tapering down from the center in the median, which is consistent with L'Enfant's desire that the radial avenues were to be "grand" and "wide and lined with trees" (NRHP form, 2004)
- Establishing a 160-foot-wide public right-of-way on New Jersey Avenue SE, between the Southeast-Southwest Freeway and M Street SE. Within this right-of-way, two travel lanes, two parking lanes, loading and planting zones, a walkway, and a spill-out zone would be provided. Because realignment is not required, these changes would not adversely affect New Jersey Avenue SE as a contributing element of the L'Enfant Plan of the City of Washington, DC..

While the new west traffic oval will be located at the intersection of a major axial (South Capitol Street) and major diagonal (Potomac Avenue) roadways, the L'Enfant Plan did not specify an island at that location. In addition, the approximately 555-foot by 230- to 250-foot elongated oval is larger and a different shape than the plan's existing round and rectangular islands. However, the geometric layout of South Capitol Street (as a north-south route) and Potomac Avenue (as a diagonal roadway) would remain intact. The use of the roadways for transportation (its historic use) would not change. Furthermore, the L'Enfant Plan included several circular intersections at key locations. Therefore, the proposed traffic oval at South Capitol Street and Potomac Avenue does not completely represent a departure from design features included in the original plan.

The benefits of the traffic oval would include the opening of a viewshed of the District's Monumental Core, which was a primary goal of the L'Enfant Plan. In combination with the proposed streetscape and landscape improvements along South Capitol Street, the oval would substantially enhance the view toward the District's Monumental Core. Therefore, the changes would diminish the integrity of design and feeling of the historic corridors and would adversely affect the historic integrity of the L'Enfant Plan. As a result, the Revised Preferred Alternative would result in a Section 4(f) use of the L'Enfant Plan of the City of Washington, DC.

5.7 Net Benefit Applicability

This section provides information to support the finding that the Project will result in a net benefit to the affected Section 4(f) resource, the L'Enfant Plan of the City of Washington, DC.

The Net Benefit Evaluation, as described in Section 5.2.3, was used to document that the Project will provide a net benefit to the affected Section 4(f) property described in Section 5.4.1 when compared to the No Build or the avoidance alternatives described in Section 5.5.5. The information needed to use the Net Benefit Evaluation for the Section 4(f) use of the L'Enfant Plan of the City of Washington, DC includes:

- Determination that the Project meets the applicability criteria set forth in applicability section of the Net Benefit Evaluation (see Section 5.2.3)
- Determination that all of the alternatives set forth in the findings section have been fully evaluated
- Determination that the findings in the Net Benefit Evaluation result in a clear net benefit to the affected Section 4(f) property(ies)
- Determination that the Project complies with the Mitigation and Measures to Minimize Harm section of the Net Benefit Evaluation
- Determination that the coordination and public involvement efforts required by the Net Benefit Evaluation have been successfully completed and necessary written agreements have been obtained
- Documentation that clearly identifies the basis for the above determinations and assurances
- The manners in which these criteria are met are summarized in Sections 5.7.1 through 5.7.4 below.

5.7.1 Net Benefit Finding

A finding that there is no feasible and prudent avoidance alternative is required in order to qualify for a Net Benefit Evaluation. As described in Section 5.5.5, the No Build Alternative is not feasible and prudent because it would not address the transportation needs defined in the purpose and need for the Project. Two other alternatives, Improvement on Existing Location and Improvement on New Location, would only marginally meet the purpose and need for the Project and would likely result in substantially greater community disruption than the Revised Preferred Alternative or any of the other build alternatives considered in the FEIS. Therefore, the Revised Preferred Alternative is eligible to use a Net Benefit Evaluation.

5.7.2 Measures to Minimize Harm

Based on comments on the DEIS, the traffic oval on the west side of the river, which was one of the elements of the FEIS Preferred Alternative, was reduced in size. The length of the oval was reduced from 720 feet to 555 feet, and the width was reduced from 387 feet to between 230 and 250 feet.

As final design progresses, DDOT shall make efforts to reduce the size of areas needed for construction is as reasonably practicable, in particular at the west oval, within Anacostia Park and along Suitland Parkway.

5.7.3 Mitigation Measures and Benefits

The Section 106 MOA for the FEIS Preferred Alternative, which was signed by FHWA, DC SHPO, NCPC, ACH, and DDOT was amended and restated for the Revised Preferred Alternative, and was subject to Section 106 consultation (see Appendix G). The Amended and Restated MOA specified mitigation commitments to resolve the Section 106 adverse effect on the L'Enfant Plan.

A visual quality management process will be used to evaluate designs submitted by prospective contractors for the various segments of the Project, including Segment 1, which will involve the construction of the two ovals, the new Frederick Douglass Memorial Bridge and modification to the I-295/Suitland Parkway Interchange. These are elements that would affect viewshed of the South Capitol Street Corridor as a contributing element to the historic L'Enfant Plan. The process to select designer/construction contractors will consider, and heavily weigh, the visual quality of proposals. DDOT will develop a process for agency review of design plans. Additional coordination requirements for Project completion was included the stipulations in the Amended and Restated MOA. The following sections discuss resource-specific mitigation measures that were included in the Amended and Restated MOA.

The Revised Preferred Alternative will be built in a manner that will enhance elements of the L'Enfant Plan of the City of Washington, DC. The following mitigation measures, some of which were stipulated in the Amended and Restated MOA, will be implemented so that the Revised Preferred Alternative preserves the historic characteristics of the L'Enfant Plan:

1. DDOT will continue to consult with the DC SHPO and the Section 106 consulting parties to avoid, minimize and/or mitigate any unforeseen adverse effects associated with Project implementation and modifications on the L'Enfant Plan. DDOT will submit plans to the DC SHPO and the consulting parties for review and comment. The milestones for these reviews will be determined by DDOT and will depend upon the selected design and construction approach and related factors. The DC SHPO and consulting parties will submit written comments on any proposed plans within 30 calendar days of receipt. DDOT will consider all comments received, respond appropriately, and incorporate feedback as feasible and appropriate.

2. DDOT will restore Reservation 245 as green space concurrent with the construction of the west traffic oval in consultation with the DC SHPO and in accordance with design review procedures established in Item 1 above. Reservations 243 and 244 were stipulated for restoration in the original MOA, but are no longer available since the property owners have proposed new uses for these areas.

3. DDOT will develop a design for the area within the proposed west traffic oval and its environs that will visually maintain the original layout of the historic L'Enfant Plan right-of-way of South Capitol Street and Potomac Avenue and preserve open space for future development in accordance with NCPC's planning and policy documents. The design will be developed through coordination with the DC SHPO and the consulting parties in accordance with design review procedures established in Item 1 above.

4. DDOT will develop and implement an interpretive signage program focusing on the L'Enfant Plan within the Project Area. DDOT will develop the interpretive signage program, from scope and location to final design, in consultation with the DC SHPO and the consulting parties in accordance with design review procedures established in Item 1 above. The interpretive signage will be installed by DDOT by the end of the construction period.

5. The form of the west traffic oval will be consistent with L'Enfant's overarching geometric strategy where diagonal intersecting avenues are superimposed on standard urban street grids to create grand boulevards with expansive viewsheds, particularly toward the Capitol Building. As one of the most prominent viewsheds in the District, the preservation of views along the South Capitol Street and Potomac Avenue axes will be paramount in the design of the oval. Therefore, no trees, signs, or other visual obstructions will obstruct these viewsheds.

6. For the east traffic oval, DDOT will develop a design for the area within the proposed east traffic oval and its environs that will preserve open space for future development, in accordance with NCPC's planning and policy documents. The design will be developed through coordination with the DC SHPO and consulting parties in accordance with Item 1 above.

7. The open space within the proposed oval at the South Capitol Street and Potomac Avenue intersection will be used as park space and/or a monument, which is consistent with the treatment goals for roadways in the historic L'Enfant Plan as specified in NCPC's *Memorials and Museum Master Plan* (2000) and the goals established for South Capitol Street, as noted in the March 2005 recommendations by NCPC's South Capitol Street Task Force.

8. The streetscape will be subject to context-sensitive design elements to support a grand urban boulevard for the South Capitol Street Corridor, consistent with the original goals of the L'Enfant Plan.

9. Streetscape improvements to New Jersey Avenue SE will be consistent with the urban character of the surrounding development. The original 160-foot-wide right-of-way will be restored through proposed setback requirements for anticipated developments.

10. Views of the U.S. Capitol from vantage points on South Capitol Street will be improved by the removal of the grade-separated intersection at M Street and its reconstruction as an at-grade intersection as originally intended.

11. The original right-of-way of South Capitol Street and Potomac Avenue will be delineated and maintained within the west traffic oval.

12. DDOT will prepare a report summarizing the Project enhancements to the L'Enfant Plan and the incorporation of the stipulations contained in the Amended MOA into South Capitol Street Project.

5.7.4 Applicability

There is no feasible and prudent alternative to the use of land from the L'Enfant Plan. The Revised Preferred Alternative will include all possible planning to minimize harm to this Section 4(f) resource resulting from such use. Compared with the No Build Alternative, the Revised Preferred Alternative, with mitigation measures, will enhance the Section 4(f) property. This will result in a net benefit to the L'Enfant Plan.

The Revised Preferred Alternative's Section 4(f) use of the L'Enfant Plan meets the applicability criteria for a Net Benefit Evaluation for the following reasons:

- As noted in Sections 5.7.2 and 5.7.3, the Project will include all appropriate measures to minimize harm and subsequent mitigation necessary to preserve and enhance those features and values of the L'Enfant Plan that qualified this property for Section 4(f) protection.
- The Revised Preferred Alternative will not alter the characteristics that qualify the L'Enfant Plan of the City of Washington, DC for the NRHP.
- For the Revised Preferred Alternative, coordination with the DC SHPO, the official with jurisdiction, was conducted to finalize the Net Benefit Evaluation for the L'Enfant Plan. This coordination resulted in a Net Benefit agreement, which was signed by DC SHPO and DDOT in June 2015 (see Appendix K). The FHWA concurred with the agreement.

Based on this evaluation, the Revised Preferred Alternative will have a Net Benefit on the L'Enfant Plan. A determination was made that the Project facts of the Revised Preferred Alternative match those contained in the Applicability, Alternatives, Findings, Mitigation and Measures to Minimize Harm, and Coordination and Public Involvement sections of the Net Benefit Evaluation. This determination, which is part of the Record of Decision, includes following statements and information:

- The applicability criteria set forth in applicability section of the Net Benefit Evaluation were met
- All of the alternatives set forth in the findings section have been fully evaluated
- There is a clear net benefit to the L'Enfant Plan
- The Project will comply with the Mitigation and Measures to Minimize Harm section of the Net Benefit Evaluation

- Coordination and public involvement efforts required by the Net Benefit Evaluation were successfully completed and necessary written agreements were obtained
- The Evaluation clearly identifies the basis for the Net Benefit determination and assurances

5.8 Coordination

Chapter 8.0 of this Supplemental FEIS describes the agency coordination program implemented for the development and evaluation of alternatives for the South Capitol Street Corridor. Agency coordination began in 2002, when DDOT initiated the *South Capitol Gateway and Corridor Improvement Study* (*Gateway Study*) (DDOT, 2003). Additional agency coordination was undertaken with subsequent planning studies, through which options for the South Capitol Street Corridor were developed and evaluated leading to the development of the alternatives analyzed in the DEIS and FEIS. Agency coordination efforts continued as part of additional engineering efforts to refine the Revised Preferred Alternative. Those efforts related to the updated Section 4(f) compliance included:

- January 10, 2013 meeting with CFA, DC SHPO, NCPC, NPS and DDOT to discuss potential impacts on NPS properties from the Revised Preferred Alternative
- July 23, 2013 meeting with DC SHPO to provide an update of Section 106 process
- December 19, 2013 Section 106 consulting parties meeting to provide an overview of the NEPA and Section 106 process, proposed area of potential effects, historic properties, and the Section 106 next steps
- May 13, 2014 meeting with the NEPA cooperating and participating agencies to provide information on the design revisions to the FEIS Preferred Alternative, and the environmental review process to support these design revisions
- July 10, 2014 Section 106 consulting parties meeting to discuss the preliminary effects assessment and potential revisions to the previous Section 106 MOA
- September 4, 2014 meeting with NPS to discuss the proposed mitigation to maintain access into the Poplar Point area of Anacostia Park

In addition to the specific coordination meetings listed above, DDOT coordinates AWI Interagency Coordination Meetings. The South Capitol Street Project is one of several projects for which regular updates are presented to attendees. Agencies that participate in these meetings in the AWI Interagency Meetings include DC SHPO, NPS, and NCPC.

Additional coordination with these agencies will occur during future design and construction phases in accordance with stipulations included in the Section 106 MOA.

5.9 Conclusion

The Revised Preferred Alternative will require use of land from three Section 4(f) resources or properties: L'Enfant Plan, Suitland Parkway and Anacostia Park. The revisions to the FEIS

Preferred Alternative are not substantive enough to change conclusion made in the FEIS that there is no feasible and prudent avoidance alternative to the Section 4(f) use of these Section 4(f) resources. For the L'Enfant Plan, the *Nationwide Programmatic Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property* (2005) was used. For Suitland Parkway and Anacostia Park, *de minimis* impact determinations were made. None of the Section 4(f) uses of the Revised Preferred Alternative requires an individual Section 4(f) Evaluation. The final Section 4(f) determinations were documented in the Record of Decision.

chapter 6.0

list of preparers

Federal Highway Administration

Michael Hicks, Environmental/Urban Engineer	Management Oversight/Document Review

District of Columbia Department of Transportation

Ravindra Ganvir	Management Oversight/Document Review
Delmar Lytle	Management Oversight/Document Review
Joseph Dorsey	Management Oversight/Document Review
E.J. Simie	Management Oversight/Document Review
Konjit Eskender	Management Oversight
Jamie Henson	Traffic and Transportation (Planning)
Jonathan Rogers	Traffic and Transportation (Planning)
Wasim Raja	Traffic and Transportation (Operations)
Rahul Jain	Traffic and Transportation (Operations)
Jim Sebastian	Traffic and Transportation (Pedestrian/Bicycle)

Parsons Brinckerhoff

Brian Mc Mahon	Project Management/Author/ Quality Assurance/Quality Control
Jason Yazawa	Environmental Task Leader
Lauren Molesworth	Author
Erin Knauer	Author
Tracee Strum Gilliam	Environmental Justice/Public Involvement
Alice Lovegrove	Air Quality Analysis/Energy Analysis Lead
Edward Tadross	Air Quality and Energy
Ray Magsanoc	Noise
Adam Heft	Hazardous Materials
Eduardo Maeyama	Land Use/Transportation
Stephanie Foell	Cultural Resources Lead

Henry Ward, RPA, LEED	Archaeology
Gregg Cornetski	GIS/Maps
Matt Coffin	GIS/Maps
Maggie Mund	Administrative Record
Monique Ellis	Administrative Record
Allyson Reynolds	Editor
Michael Babin	Document Specialist

CH2M HILL

Carolyn Washburn	Project Description, Oversight
Christopher Conroy	Project Description, Traffic and Transportation, Visual Quality
Lindsey Carr	Natural Resources
Otto Clemente	Traffic and Transportation
Benjamin Beattie	Air Quality
Robert Hook	Natural Resources
Ngozi Ibe	Hazardous Materials
Sara Orton	Cultural Resources, Visual Quality
Rob Prunty	Traffic and Transportation
Robert Miller	Noise
David Vomacka	Purpose and Need, Community Impacts, Land Use
Gustavo Ceballos	Traffic and Transportation
Kavita Boddu	Traffic and Transportation
Maggie Qi	Traffic and Transportation
Mar Cutting	Traffic and Transportation
Bill Love	Traffic and Transportation
Charlie Wence	Traffic and Transportation
Uwe Brandes	Visual Quality
Dina Klavon	Visual Quality
Frederick Gottemoeller	Bridge Section
Rachelle Wolf	Landscape Design/Roadway/Project Coordination
Alex Bishop	Urban Design/Landscape Design – Text and Graphics
Maria Riley	Urban Design/Landscape Design – Book Format, Text, Graphics

Coastal Resources

David Smith	Natural Resources Lead
Heather Tatone	Natural Resources
Kate Estler	Water Quality
Emily Jellick	GIS/Map Support
Sean Sipple	Field Assessment of Forest Resources and Specimen Trees
Megan Niehaus	Field Assessment of Forest Resources and Specimen Trees
Kaityln Summers	GIS Support
Derek Rodgers	Threatened & Endangered Species
Sarah Williamson	Quality Assurance/Quality Control
Bridgette Garner	Natural Resource/Project Continuity

Sharp & Company

Mary Arzt	Public Involvement
Susan Sharp	Public Involvement
Charise Geiling	Public Involvement
Pat Yates	Graphic Design
Diane Pfefferkorn	Website
Shelley Johnson	Public Involvement

Sammat

Dr. Stephen Arhin, P.E., PTOE	Traffic
Ebo Duker, P.E.	Traffic
Olaoluwa Dairo	Traffic
Asteway Ribbisso	Traffic

chapter 7.0
distribution list

As listed below, various federal and District agencies, and other organizations and groups representing Project stakeholders, were provided with copies of the Supplemental Draft Environmental Impact Statement (Supplemental DEIS), which was also made available to the public at various locations. Those that provided comments on the Supplemental DEIS have asterisks. Individuals who provided comments on the Supplemental DEIS, but were not provided copies of the Supplemental DEIS, are listed at the end. Those who provided comments on the Supplemental DEIS will be provided a copy of the Supplemental FEIS.

Federal Agencies

Advisory Council on Historic Preservation

Architect of the Capitol

Council on Environmental Quality

General Services Administration

- NEPA Compliance Review
- Portfolio Management

National Capital Planning Commission

U.S. Army Corps of Engineers

U.S. Coast Guard

- Office of Bridge Administration

U.S. Commission of Fine Arts

U.S. Department of Commerce

- National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service*
- Office of the Secretary

U.S. Department of Energy

Office of Environmental Compliance

U.S. Department of Homeland Security

Federal Emergency Management Agency

U.S. Department of Housing and Urban Development

District of Columbia Office

U.S. Department of the Interior*

Fish and Wildlife Service

National Capital Parks – East

National Capital Region

Office of Environmental Policy and Compliance

U.S. Department of Transportation

Federal Highway Administration, District of Columbia Division

Federal Transit Administration

U.S. Environmental Protection Agency

Office of Federal Activities, NEPA Compliance Division*

Office of Federal Activities (EIS Filing Office)

U.S. Navy, Naval District Washington

Washington Navy Yard

U.S. Naval Support Facility Anacostia

Joint Bolling Air Base

Local Agencies

District of Columbia Department of the Environment

Fisheries and Wildlife Division

Water Quality Division

District of Columbia Department of Housing and Community Development

District of Columbia Department of Parks and Recreation

District of Columbia Department of Transportation (DDOT)

- Infrastructure Project Management Administration
- Transportation Operations Administration
- Policy, Planning and Sustainability Administration
- Urban Forestry Administration

District of Columbia Housing Authority

District of Columbia Office of the Deputy Mayor for Planning and Economic Development

District of Columbia Office of Planning

District of Columbia Historic Preservation Office

- Events DC

District of Columbia Water and Sewer Authority (DC Water)

- Metropolitan Washington Council of Governments (MWCOG)
- Washington Metropolitan Area Transit Authority (WMATA)

Adjacent State Agencies

Maryland Department of Transportation (MDOT)

Maryland State Highway Administration

Virginia Department of Transportation (VDOT)

Public Officials

Congresswoman Eleanor Holmes Norton

Mayor Muriel Bowser

Council of the District of Columbia

- Mr. Phil Mendelson, Chairperson
- Mr. Charles Allen, Ward 6

Ms. Yvette Alexander, Ward 7

Ms. LaRuby May, Ward 8

District of Columbia Advisory Neighborhood Commissioners (ANC)

Ms. Kirsten Oldenburg, Chairperson, ANC 6B

Mr. Roger Moffatt, Chairperson, ANC 6D*

Ms. Barbara Clark Chairperson, ANC 8A

Ms. Mary Cuthbert, Chairperson, ANC 8C

Mr. Anthony Muhammad, Chairperson, ANC 8E

Business and Civic Organizations

Anacostia Community Boathouse Association

Anacostia Coordinating Council

Anacostia Economic Development Corporation

Anacostia Watershed Society

Capitol Hill Restoration Society

The Capitol Riverfront Business Improvement District

Casey Trees

Chesapeake Bay Foundation

The Committee of 100 on the Federal City

District of Columbia Preservation League

Earth Conservation Corps

Fairlawn Civic Association

Friends of Garfield Park

Georgetown University Law Center

Heritage Preservation

Sierra Club

Southwest Neighborhood Assembly

Washington Area Bicyclist Association

Public Places

Anacostia Library

Francis A. Gregory Neighborhood Library

Martin Luther King, Jr. Memorial Library

Parklands-Turner Community Library

Southeast Neighborhood Library

Southwest Neighborhood Library

Anacostia Waterfront Business Resource Center

West Side Waterfront Business Resource Center

Organizations and Individuals that Provided Comments that did not receive the Supplemental DEIS

Associated Builders and Contractors, Inc.

Arthur Totten

Nathen Alberg

Thomas Alder

Thomas Ennen

Peter Kauffmann

Dayvie Paschall

Mr. Polak

Vanessa Ruffin

chapter 8.0
comments and coordination

This chapter documents the early and continuing coordination with various government agencies, organizations, and the general public during the development of the South Capitol Street Supplemental DEIS and Supplemental FEIS. The following sections summarize the agency coordination meetings, and stakeholder and interest group meetings.

8.1 Public Coordination

Public coordination has continued since the publication of the FEIS in March 2011. Public Hearings were held in April 2011 to provide the public with an opportunity to comment on the FEIS and the Project. Comments received during the hearings, and submitted via the website and mail, are documented with responses in Appendix M of this Supplemental FEIS.

Public coordination has continued since those hearings as the Project design changed and the Revised Preferred Alternative was developed. These efforts are detailed in the following sections. A 45-day comment period was provided and a public hearing was held for the Supplemental DEIS (see Section 8.4). Comments received during this period and the public hearing are documented in Appendix N of this Supplemental FEIS.

8.1.1 Notice of Intent

In accordance with 23 CFR 771.130(d), a Notice of Intent (NOI) to prepare a South Capitol Street supplemental EIS was published in the July 28, 2014 edition of the *Federal Register*. The only comments received as a result of the NOI were from the NPS (Appendix K). Since the FHWA later decided to prepare a Supplemental FEIS, a revised NOI was published in the July 28, 2014 edition of the *Federal Register*. However, the FHWA later decided to prepare a Supplemental DEIS and a revised NOI was published in the December 8, 2014 edition of the *Federal Register*.

8.1.2 Project Website

A website (www.southcapitoleis.com) was established in June 2005 and was updated in May 2014 to reflect the current status of the Project's Supplemental DEIS. It also includes an overview of the Revised Preferred Alternative, links to Project documents, and directions on how to become involved in the Project. The website, which is monitored by the Project team, provides an opportunity for the public to submit comments.

The original website was employed during the initial scoping and design development process as it had the potential to reach a broad spectrum of stakeholders. In addition, the AWI website maintains the historic documents for the Project. The AWI project website can be found at www.anacostiawaterfront.org/awi-transportation-projects/south-capitol-street-corridor/ .

8.1.3 Project Newsletter

The Spring 2014 issue of the Project newsletter was circulated in May 2014 in communities in the Project Area. A total of 600 newsletters were produced with 400 circulated in the communities and 200 reserved for the public meeting. The newsletters were distributed in the neighborhood of Barry Farm, west of the Anacostia River west of South Capitol Street between M and P Streets SW, and to Saint Vincent Catholic Church. The newsletter contained an invitation to the meeting and provided information about the Project, including design elements and schedule.

8.1.4 Public Meetings following the FEIS

After the issuance of the FEIS, two public hearings were held, one on each side of the Anacostia River, on April 26 and 28, 2011. The findings of the FEIS were presented and the public was provided an opportunity to comment on the Preferred Alternative and findings of the FEIS. Many of the public comments expressed support of DDOT's revision of the design to reopen Sheridan Road. Other comments included thoughts on expanding bicycle and pedestrian connections. Most of the comments received pertained to the following concerns:

- Construction impacts such as noise, pollution, traffic on residents of the area and Anacostia River traffic
- Future regional traffic conditions resulting from the South Capitol Street Project, 11th Street Bridge Project, and planned residential, commercial, and mixed-use developments

On July 30, 2013 DDOT held an Informational Update Meeting for the South Capitol Street Corridor Project at the Capitol Skyline Hotel. The latest design, phasing and schedule information for the Project and an overview of the Design-Build process were presented.

On May 15, 2014, DDOT hosted a public open house meeting at Matthews Memorial Baptist Church. The community was provided an update of the Project design, the NEPA process and the design-build process. Tools and techniques used to promote the May 15, 2014 meeting included advertisements in *East of the River*, *Hill Rag*, the *Washington Post Express*, and the *Southwester*. Postcards, fliers and posters were distributed throughout the Project Area. More than 2,400 fliers were distributed at the 4th Street, SW Safeway, Navy Yard/National's Park, Anacostia and Congress Heights Metro Stations, Southwest Neighborhood Library, churches and apartment complexes within the study area.

8.2 Agency Coordination

An important element of the environmental process is the integration of the National Environmental Policy Act (NEPA) with other planning and environmental review procedures

required by law or agency practice. Effective interagency coordination is critical to the success of the Project. DDOT and FHWA are responsible for interagency coordination and they initiated meetings during the early planning stages of the South Capitol Street Project. This coordination will continue through the NEPA process and into final design and construction.

8.2.1 Aesthetic Review Committee

Table 8-1 lists the meetings of the Aesthetic Review Committee. The following sections document the agency coordination that has occurred during the Project.

Table 8-1: Aesthetic Review Committee Meetings

Date	Activity	Attendees
	2014	
January 15	Meeting to provide overview of proposed Aesthetic Review Committee for South Capitol Street Corridor Project Design-Build procurement.	CFA, DC SHPO NCPC DDOT
February 10	Meeting to review procurement process and schedule and agency comments/revised document.	CFA DC SHPO NCPC OP DDOT

8.2.2 Cooperating and Participating Agencies

Federal and non-federal agencies were invited by FHWA to participate in the project development process as cooperating agencies. Letters were sent in October 2013 to four agencies requesting their participation as cooperating agencies for the South Capitol Street Project. The four agencies agreed to be cooperating agencies for the Project. Appendix K contains copies of the acceptance letters from cooperating agencies. Federal agencies that declined to be cooperating agencies or did not respond to FHWA's invitation are considered participating agencies (Section 6002 of the *Safe Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU). Non-federal agencies that did not provide written acceptance are not considered participating agencies.

Table 8-2 lists the agencies that were invited to participate in the project development process and their current status as either cooperating or participating agencies. Table 8-3 lists the interagency coordination meetings held during the Project.

Table 8-2: Cooperating and Participating Agencies

Agency	Status
District of Columbia Department of the Environment	Cooperating
National Capital Planning Commission	Cooperating
National Park Service	Cooperating
U.S. Army Corps of Engineers	Cooperating
U.S. Coast Guard	Cooperating
U.S. Navy	Cooperating
Architect of the Capitol	Participating
National Oceanic and Atmospheric Administration, National Marine Fisheries Service	Participating
U.S. Department of the Interior, Fish and Wildlife Service	Participating

8.2.3 Stakeholder and Agency Coordination

Since the publication of the FEIS, coordination with stakeholders and cooperating and participating agencies has continued and resulted in the development of the Revised Preferred Alternative. Table 8-3 lists the interagency coordination conducted since completion of the FEIS.

Table 8-3: Interagency Coordination

Date	Activity	Agencies Present
	2012	
July 2	Meeting to discuss the new Frederick Douglass Memorial Bridge and the traffic oval and circle on either end. Navy impacts and next steps were also discussed.	USN DDOT
October 9	Meeting to discuss the South Capitol Street Corridor Project and discuss agency involvement.	USACE DDOE NPS USCG USN DDOT
November 7	Meeting to discuss the South Capitol Street (SCS) design team, update project design progress, review the path forward with design and construction, and to identify next steps.	CFA DC SHPO NCPC DDOT
November 28	Meeting to discuss the benefits of an alternative alignment for the new Frederick Douglass Memorial Bridge.	FHWA DDOT
December 6	Meeting to assess the status of permits necessary for geotechnical drilling with USACE and DDOE.	DDOE USCG DDOT
December 12	Meeting to discuss the progress of the planning and design including alternative bridge alignment with design options for east and ends of the bridge, constraints and risks associated with FEIS preferred alignment, and strategies to minimize impacts and risk.	CFA NCPC DC SHPO DDOT
December 18	Meeting to discuss the possible design alternative parallel alignment for the new Frederick Douglass Memorial Bridge.	FHWA DDOT
December 18	Meeting to discuss the benefits of an alternative alignment for the new Frederick Douglass Memorial Bridge and identify issues with the FEIS alignment and develop an alternative alignment in an effort to minimize costs and risks.	NPS DDOT

Table 8-3: Interagency Coordination (continued)

Date	Activity	Agencies Present
	2013	
January 10	Meeting to discuss the South Capitol Street Corridor Project and its impacts on NPS lands	CFA DC SHPO NCPC NPS DDOT
January 23	Meeting to discuss the planning and design activities of the corridor since the last meeting by AWI, the overall FDMB structure type and bridge selection process and the options that were considered including condition of the existing bridge by DDOT, the bridge span arrangements, haunch/arch depth including aesthetic design and options for consideration, and the evolution of the traffic oval designs on the east and west bridge approaches.	CFA NCPC DDOT
January 29	Meeting to introduce the Project to the District of Columbia Office of Planning (DCOP) and to review the design process to date.	DCOP DDOT
January 30	Meeting to present the status of the South Capitol Street Corridor Project, focusing on the proposed parallel alignment of the Frederick Douglass Memorial Bridge, traffic ovals, urban design, and overall schedule for the Project.	Capitol Riverfront BID DDOT
February 5	Meeting to provide an overview and history of the South Capitol Street Corridor Project including the purpose and need, the Environmental Impact Statement (EIS) process, and environmental commitments outlined the Final Environmental Impact Statement (FEIS), phasing, cost, a list of involved stakeholders, and progress to date.	Bicycle Advisory Council (BAC) DC Council Pedestrian Advisory Council (PAC) WABA DDOT
February 7	Meeting to review goals, design process, the parallel bridge alignment, and delivery schedule for the Project.	USCG FHWA DDOE USN DC SHPO USACE DDOT
February 12	Meeting to review the issues discussed on January 23rd, activities since January 23rd, next steps, and previous set of concepts.	DC SHPO DDOT
February 12	Meeting to follow up from last South Capitol Street Interagency meeting, and to discussion of how the Design-Build (DB) process can advance in parallel with the NEPA process, and how the NEPA process relates to the DB procurement process.	DCA DDOT

Table 8-3: Interagency Coordination (continued)

Date	Activity	Agencies Present
	2013 (continued)	
February 27	Meeting to provide an update of the South Capitol Street Advance Acquisition/Protective Buy parcels to FHWA Director and management team with a tour of the West Side Oval and individual parcels followed the meeting at DDOT.	FHWA DDOT
March 11	Meeting to review of Project status, Supplemental Final EIS, Navigation Assessment (NA), and the necessary Coast Guard Bridge Permit.	Navy USCG DDOT
March 15	Correspondence to discuss the Coast Guard Bridge Permit process for the proposed replacement of the Frederick Douglass Memorial Bridge and the Navigation Assessment for the Anacostia River.	USCG DDOT
May 2	Correspondence to discuss the proposed replacement of the Frederick Douglass Memorial Bridge and the Navigation Assessment being completed for that bridge.	FHWA USCG DDOT
May 13	Correspondence from the USN to clarify the USN's vertical and horizontal clearance requirements for the proposed replacement bridge over the Anacostia River. USN commented that DDOT is exploring the feasibility of replacing the existing moveable Frederick Douglass Memorial Bridge with a fixed structure.	USCG USN DDOT
May 23	Meeting to discuss the survey being conducted as part of the Navigation Assessment. Discussed background of the South Capitol Street Corridor Project. Navy expressed concerns about fixed bridge alternative including: feasibility of future movement of the SS Barry and environmental impacts of dismantling SS Barry for it to fit under a fixed bridge.	DCA USN DDOT
June 5	Meeting to review the background and progress of the Project, Navigation Assessment (NA), Removable Span Option, Supplemental Final EIS, and Fixed vs. Movable Bridge alternatives.	FHWA USCG DDOT
June 6	Meeting to review and discuss design and schedule of the Project, construction easement, and Request for Proposal (RFP) Design.	NCP NPS DDOT
June 19	Meeting to provide an overview of project background and Preferred Alignment from the Final Environmental Impact Statement (FEIS). Discussion included concerns about pedestrian traffic crossing South Capitol Street and street lighting.	Washington Nationals DDOT
June 20	Meeting to coordinate schedule and design updates with the USN.	USN DDOT

Table 8-3: Interagency Coordination (continued)

Date	Activity	Agencies Present
	2013 (continued)	
July 23	Meeting to update DC State Historic Preservation Office (DC SHPO) staff on the Section 106 consultation status related to the South Capitol Street Corridor Project changes since the FEIS was completed.	DC SHPO DDOT
July 26	Coordination discussion.	WMATA/JDAC DDOT
July 31	Meeting to discuss South Capitol Street Progress on the ovals, Frederick Douglass Memorial Bridge, bicycle and pedestrian features, stormwater management, the Supplemental EIS, and next steps.	DDOT
August 8	The USCG reiterated that all certifications are to be in place before the USCG will start their final permit process. PB presented the status of the Navigation Study.	USCG DDOT
September 5	Meeting to discuss South Capitol Street update, design features, Navigation Study and NEPA Process, and path forward.	DDOT
September 11	Meeting to coordinate and discuss the demolition requirements for the existing Frederick Douglass Memorial Bridge (FDMB) with USACE and USCG.	USCG DDOT
November 19	Correspondence from NCPC to approve the enclosed action on the comments on the concept design for the District of Columbia Department of Transportation – Reconstruction of South Capitol Street, P Street to I-295 Project. Correspondence from NCPC to DDOT includes Executive Director's Recommendation.	NCPC DDOT
November 19	Meeting to review and discuss the updated Visual Quality Process for the Project.	CFA DDOT
November 19	Meeting to discuss and review with FHWA the acquisition and relocation assistance procedures to be used for the four total take parcels (SCS-037, 041, 042 and 074). Review of the plan and processes that will be used to acquire the properties and relocate the tenants.	FHWA DDOT
December 5	Meeting to update FHWA on the procurement and NEPA schedule for the South Capitol Street Corridor Project. This includes updates to the process resulting from the CFA presentation on September 17, 2013.	FHWA DDOT
December 17	Correspondence from the Fifth Coast Guard District to issue a preliminary public notice regarding the proposed replacement of the Frederick Douglass Memorial Bridge (South Capitol Street) over the Anacostia River. The purpose of this notice was to notify mariner, adjacent property owners, and government agencies that the District of Columbia Department of Transportation may propose to replace the current movable drawbridge with a fixed bridge.	USCG DDOT

Table 8-3: Interagency Coordination (continued)

Date	Activity	Agencies Present
	2013 (continued)	
December 17	Meeting to provide an overview of activities, such as the RFP Bridge progress, South Capitol Street Corridor update, M Street study – Task 3B – Special Event Study, Parkside Pedestrian Bridge, St. Elizabeth's East Campus roads and infrastructure systems, Malcolm X Interchange improvements, 11th Street Bridge update, 11th Street Urban Deck concept and status, Kenilworth Riverwalk Trail update, Barney Circle/Southeast Boulevard EA update, Pennsylvania Ave/Potomac Ave Intersection EA update, AWI Transportation Master Plan 2013 update, and South Capitol Street Trail.	DMPED OP DDOT
December 17	Meeting to review the responses to the preliminary public notice, discuss comments on the Phase 1 Navigation Study, provide the preliminary results of the Phase 2 Navigation study and discuss the next steps for a draft bridge permit application.	USCG DDOT
December 18	Meeting to discuss the drilling means/methods, potential work plan updates, and the 401 Certification requirements (specifically the turbidity curtain, turbidity monitoring, and environmental sampling).	DDOE DDOT
December 19	Preliminary Public Notice regarding the proposed replacement of the Frederick Douglass Memorial Bridge (South Capitol Street) over the Anacostia River. The purpose of this notice was to notify mariners, adjacent property owners, and government agencies that the District of Columbia Department of Transportation may propose to replace the current movable drawbridge with a fixed bridge.	FHWA USCG DDOT
December 19	Meeting to provide changes to the Project since the FEIS, an overview of the NEPA and Section 106 processes, review of proposed area of potential effects, identified historic properties, Section 106 next steps, and discussion.	CFA CHRS DC SHPO NCPC NPS DDOT

Table 8-3: Interagency Coordination (continued)

Date	Activity	Agencies Present
	2014	
January 2	Memorandum summarizing the December 18, 2013 meeting minutes. Includes information for the Free State Drilling Inc (FSD): drilling license, DCRA Business License, DDOE Well Application Schematic, Well Construction Application Form, Figure showing boring locations.	DDOE WDC DDOT
January 6	Correspondence summarizing the DC code dating from 1899 regarding ownership of the river bed, NPS lands current office position on DC authority regarding the borings as within a ROW for the existing bridge, drafting a letter stating that no Federal Action (permit) from NPS is required for DDOT to undertake the borings.	DDOE DDOT
January 8	Meeting to provide an update on Project progress including: the NEPA process, ongoing coordination with stakeholders including CFA and NCPC, an update on the revisions to the Design-Build RFP including an enhanced aesthetic review process, the schedule for completing the NEPA process and the Design-Build RFP, and the USN's ongoing study for the DS Barry.	USN DDOT
January 15	Meeting to provide a briefing to the members of the representatives of the Commission of Fine Arts (CFA), National Capitol Planning Commission (NCPC), and District of Columbia State Historic Preservation Office (DC SHPO). These agencies were invited by DDOT to participate in the Aesthetic Review Committee for the South Capitol Street Corridor Project.	CFA DC SHPO NCPC DDOT
February 12	Correspondence from CH2M HILL to FAA requesting supplemental information for use in issuing a public notice for ASN 2013-AEA-4399-OE, replacement of the existing Frederick Douglass Memorial Bridge over the Anacostia River in Washington, DC.	DDOT FAA
March 13	Meeting to provide a status update on the supplemental EIS and status report on work that is on-going. DDOT provided a status update on the Navigation Study and advised that the final Navigation Study Report has been submitted. Discussed environmental updates, cost estimate review, finance plan, project management plan, project labor agreement, disadvantaged business enterprises, FHWA requirements, and the award process.	FHWA DDOT

Table 8-3: Interagency Coordination (continued)

Date	Activity	Agencies Present
	2014 (continued)	
May 13	Meeting purpose to inform the Cooperating and Participating Agencies of the design revisions to the FEIS Preferred Alternative and of the environmental review process for the Supplemental FEIS. The meeting also served as an opportunity for the agencies to raise issues or questions regarding the Project.	ACOE AOC CFA DDOE FHWA FWS NCPC NPS USCG USN DDOT
May 28	Meeting to provide update on Results of Buzzard Point Planning Study, update on Soccer Stadium, update on South Capitol Street Corridor Project, review action items, and schedule follow up coordination.	DCA OP DGS DDOT
July 10	Meeting to present the consulting parties the proposed Effects Assessments for Historic Properties within the revised Area of Potential Effects (APE) and to receive their feedback. The APE had been revised based on comments received from the consulting parties at the first consulting parties meeting in December.	ACHP ANC 6D AOC CFA CHRS DC SHPO DDOT FHWA Friends of Garfield Park Louis Berger NCPC NPS-NCPC PEPCO USN
September 4	Meeting to review and discuss NPS comments on the South Capitol Street Corridor Project.	DDOT FHWA NPS

8.3 Section 106 Coordination

As required by Section 106 of the National Historic Preservation Act, coordination with persons, organizations, and agencies with specific interests in the Project Area related to cultural resources is being undertaken for this Project. Several agencies, organizations, or groups that meet the definition of potential consulting parties were invited to participate in the Project as Section 106 consulting parties by FHWA in December 2013. These organizations include:

- NCPC
- CFA
- Architect of the Capitol (AOC)
- DC Historic Preservation Review Board
- NPS – National Capital Region
- Committee of 100 on the Federal City
- African American Heritage Preservation Foundation, Inc.
- Heritage Preservation
- Anacostia Museum and Center for African American History and Culture
- DC Preservation League
- Councilman Wells (Ward 6)
- Councilman Barry (Ward 8)
- ANC 6B
- ANC 6D
- ANC 8A
- ANC 8C
- Southwest Neighborhood Assembly
- WMATA
- DC Vote
- Capitol Hill Restoration Society (CHRS)
- Georgetown University Law Center
- Historical Society of Washington, D.C.
- Historic Preservation Review Board
- Advisory Council on Historic Preservation (ACHP)
- Anacostia Trails Heritage Area
- Delaware Nation

Of the organizations and persons invited to be consulting parties, five responded positively to the request:

- DC SHPO
- Capitol Hill Restoration Society (CHRS)
- NCPC
- NPS - NACE
- CFA

The consulting parties (CPs) were invited to a meeting on December 19, 2013 to inform the CPS regarding how the improvements to the Project changed the Area of Potential Effect (APE) that will be used for Project compliance with Section 106. DDOT informed the CPs that the improvements to the Preferred Alternative would be covered in the Supplemental FEIS for compliance with NEPA. In addition to FHWA, DDOT, and DC SHPO, the following organizations were represented at the meeting:

- CHRS
- DC SHPO
- NCPC
- NPS
- CFA

Four issues at the meeting were clarified including:

- No elements have been eliminated from the design but they have been modified
- The ROD will cover all NEPA documents prepared for the Project, such as the DEIS, FEIS, Supplemental DEIS and Supplemental FEIS
- The purpose and need for the Project remains the same as in the FEIS
- The LOD includes staging areas

Meeting participants focused on the following topics:

- Concerns were raised regarding the APE boundary limits, particularly as relates to visual impacts.
- Discussions highlighted properties needing a Section 106 determination of eligibility, and which properties to include and exclude within the new APE boundary. It was determined that a permit would be required for archaeological investigations on NPS property.
- The Delaware Nation renewed its interest for activities in the Project Area, including projects that may disturb the Potomac and Anacostia Rivers. The USCOE has consulted with the Delaware Nation during the boring permit process. Consultation is expected to continue for the South Capitol Street Project.
- Decisions were made to send the 2011 Memorandum of Agreement (MOA) to the consulting parties. Meeting participants requested submission of any comments on the APE by January 10, 2014.

Subsequently, a decision was made to expand the APE. As a result, additional agencies, organizations, or groups that meet the definition of potential consulting parties were invited to participate in the Project as Section 106 consulting parties by FHWA in May, 2014. These organizations include:

- USN
- Joint Base Ft Myer, McNair, and Henderson Hall
- Potomac Electric Power Company (PEPCO)

Of these invitees, the following agencies, organizations, or groups participated as consulting parties:

- USN
- PEPCO

The consulting parties were invited to a meeting on July 10, 2014 to review the draft Determination of Effects and to discuss the approach to revising the MOA. In addition to FHWA, DDOT, and DC SHPO, the following organizations were represented at the meeting:

- CHRS
- DC SHPO
- NCPC
- NPS
- CFA
- Friends of Garfield Park
- PEPCO
- ANC 6D
- ACHP
- AOC

Meeting participants focused on the following topics:

- Proposed effects determinations for historic properties adjacent to the LOD because noise and vibration from construction activities could have an indirect impact.
- Expansion of the APE to include the U.S. Capitol as there are potential indirect visual impacts.

Following the meeting, the APE was expanded to include the U.S. Capitol. Project effects to historic properties within the revised APE were evaluated and initial comments from consulting parties and the DC SHPO, received at a meeting on July 10, 2014, were considered and included. *The Draft South Capitol Street Project Section 106 Assessment of Effects for Historic Properties* (DDOT, 2014) was submitted to the DC SHPO and consulting parties for review in early August 2014. The revised final version of the *South Capitol Street Project Section 106 Assessment of Effects for Historic Properties* (DDOT, 2014) is included as Appendix G of this document.

In a letter dated December 4, 2014, the DC SHPO concurred with the determination that the L'Enfant Plan of the City of Washington, DC will be the only historic property adversely affected by the Project.

Because the Project's adverse effect determination was maintained, the previous Section 106 MOA was amended and restated to address the adverse effect to the L'Enfant Plan of the City of Washington, DC, and any other measures developed during consultation with the DC SHPO, consulting parties, and other signatories. The amended and restated MOA is provided in Appendix G of this document.

8.4 Supplemental Draft Environmenal Impact Statement

8.4.1 Distribution and Availability

The Notice of Availability (NOA) of the Supplemental DEIS was published in the December 19, 2014 edition of the *Federal Register*. This NOA also initiated a 45-day comment period ending on February 2, 2015. Copies of the Supplemental DEIS were mailed to federal and District agencies that may have an interest in the Project. All parties who were sent copies of the Supplemental DEIS were asked to provide comments. Electronic files of the Supplemental DEIS were available for download from the Project website (www.southcapitoleis.com). In addition, paper copies of the Supplemental DEIS were made available for review at the following public facilities that are located within or near the Project Area:

- Anacostia Library
- Francis A. Gregory Neighborhood Library
- Martin Luther King, Jr. Memorial Library
- Parklands-Turner Community Library
- Southeast Neighborhood Library
- Southwest Neighborhood Library
- Business Opportunity and Workforce Development Center

8.4.2 Public Hearing

A public hearing for the Supplemental DEIS was held on January 22, 2015 between the hours of 6:30 p.m. to 8:30 p.m. at Matthews Memorial Baptist Church. Notice of the public hearing was published in The Washington Post Express (daily newspaper), The Washington Times (daily newspaper), the Washington Informer (weekly), the Washington Sun (weekly), Afro American (weekly), Hill Rag (monthly), and East of the River (monthly). Over 2,000 newsletters and 10,000 postcard flyers advertising the public hearing were mailed to residents and businesses located in the neighborhoods within and surrounding the Project Area. In addition, the flyer was hand-distributed at several locations in Wards 6 and 8.

The public hearing included an open house where poster boards, illustrating various aspects of the Project, were available for review. The public hearing also included a formal presentation about the contents of the Supplemental DEIS. Following the presentation, the remainder of the public hearing allowed the public an opportunity to provide oral comments that were recorded, verbatim, by a court reporter. The court reporter was made available to those who wished not to make oral comments in front of the public hearing audience. Members of the public could also provide written comments on a form provided at the public hearing. The public transcript of the formal presentation and oral comments is available in Appendix N.

8.4.3 Supplemental DEIS Comments

Three agencies, two organizations and five individuals provided comments on the Supplemental DEIS by letter, email, or voicemail. In addition, a representative of an organization and three individuals provided oral comments during the public hearing. Two comment forms were filled

out at the public hearing. Copies of the comments are provided in Appendix N. The comments requiring responses are numbered, with the responses to these comments provided on the same page.

DDOT and FHWA considered all comments received, and some of the comments led to changes that are reflected in this Supplemental FEIS.

chapter 9.0

glossary

A

Access, Accessibility: The opportunity to easily reach a destination without being impeded by physical, social, or economic barriers. Typically, accessibility is the extent to which transportation improvements make connections between geographic areas or portions of the region that were not previously well connected.

Advisory Council for Historic Preservation (ACHP): An independent federal agency responsible for the federal review process to ensure that cultural resources are considered during federal project planning and implementation.

Affected Environment: The physical features, land, area or areas to be influenced, affected or created by a transportation improvement under consideration; also includes various social and environmental factors and conditions pertinent to an area.

Agency Coordination: Refers to the process whereby the Department of Transportation contacts, consults and maintains communication with various public and environmental resource agencies, affording such agencies an opportunity to review and comment upon specific transportation proposals.

Agreements (Programmatic): Agreement between agencies designed to accomplish all agency goals, including timely and efficient coordination. Establishment of a procedure that will reduce processing time for certain federal actions with minor impacts on the human and natural environment.

Alternative: One of a number of specific transportation improvement proposals, alignments, options, design choices, etc. in a study. Following detailed analysis, one improvement alternative is chosen for implementation.

Archaeological Investigations: Studies of prehistoric and historic locales that provide understanding of past human behavior, culture change, and related topics through scientific and scholarly techniques such as literature research, excavation, analysis and interpretation. Current U.S. archeological practice defines three phases of investigation: Phase I identification survey (this is sometimes divided into Phase I(a), which is primarily limited to background archival research, and Phase I(b), which includes actual field survey; Phase II evaluation

investigations, which include a more intensive excavation to determine if a site meets the eligibility criterion for the National Register of Historic Places (NRHP); and Phase III data recovery excavations to mitigate the loss of archeological data when a NRHP eligible site cannot be avoided.

Area of Potential Effect (APE): The geographical area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

Arterial: A class of street serving major through traffic movements emphasizing a high level of mobility. These streets serve moderate to long trips and major activity centers. Arterials include interstates, freeways/expressways, urban principal arterials, and minor arterials.

Average Daily Traffic (ADT): The average number of vehicles passing a fixed point in a 24-hour time frame. A measure of traffic volumes.

B

Bascule Bridge: A bascule bridge or drawbridge is the most often constructed type of movable bridge. The movable span opens vertically by rotating upwards about a horizontal axis. It is designed with a counterweight that balances the span throughout the entire upward swing.

Base Year: The lead off year of data used in a study, usually the current year or a year with the most recent comprehensive data.

Bicycle Lane: Bicycle lanes on a roadway are for the exclusive use of bicycles and are marked accordingly. They are typically one-way facilities designed to carry bike traffic in the same direction as adjacent motor vehicle traffic. A minimum bicycle lane width is generally four feet.

Build/No Build: Often called the base case, the No Build Alternative includes all routine maintenance safety improvements and projects listed in the most recent Constrained Long Range Transportation Plan for the Washington region adopted by the Metropolitan Washington Council of Governments Transportation Planning Board. The schedule of improvements covers a 25-year period. This alternative serves as the basis for comparing all other build alternatives. Build alternatives are alternatives that are developed, at the concept level, for analysis purposes that meet a project's purpose and need and have the potential to be constructed.

C

Capacity: Usually the maximum number of vehicles and/or people that can be carried past a point on a transportation system in a specified time, at a specified level of service (LOS).

Center-ramp Interchange: A connection between two roadways provided by grade-separated, one-way ramps located in the center of the major roadway. The ramp's connection to the major roadway is free-flow and accessed from the leftmost lane. A signalized intersection controls access from the crossroad to the ramps leading to the major roadway. The design attempts to minimize construction costs and property impacts by building ramps within the roadway medians.

Clean Air Act Amendments (CAAAs): Federal legislation passed in 1990 to change both federal and state approaches to regulating air quality; mandating programs to curb acid rain, urban air pollution, and toxic air emissions. The CAAAs call for emission reduction measures in air quality nonattainment areas, including the consideration of transportation control measures (TCMs) as part of transportation improvement projects. Projects in nonattainment areas may not increase the number of vehicle miles traveled (VMTs); the number of cars on the roadways must be reduced by encouraging drivers to use mass transit, ridesharing, and carpooling.

Clean Water Act (CWA): Recognizing the potential for continued or accelerated degradation of the Nation's waters, the U.S. Congress enacted the Clean Water Act formerly known as the Federal Water Pollution Control Act (33 USC 1344). The objective of the Clean Water Act is to maintain and restore the chemical, physical, and biological integrity of the waters of the U.S. Section 404 of the Act authorizes the Secretary of the Army, acting through the U.S. Army Corps of Engineers, to issue permits for the discharge of dredged or fill material into waters of the U.S., including wetlands.

Collector: A road that collects and distributes traffic. Sometimes built next to an expressway to collect traffic from the area and then funnel it onto the expressway. Generally, a collector has fewer lanes than an arterial.

Common Noise Environment (CNE): A CNE is a group of noise receptors within the same land use activity category that are exposed to similar noise sources and levels, traffic volumes, traffic mix, speed, and topographic features. Generally, CNEs occur between two secondary noise sources, such as interchanges, intersections and cross roads.

Comprehensive Plan: The general, inclusive long-range statement of the future development of a community. The plan is typically a map accompanied by description and supplemented by policy statements that direct future capital improvements in an area.

Conceptual Mitigation: The early, generalized identification of design, operational or construction measures that would minimize or avoid adverse environmental consequences.

Conformity: The process to assess the compliance of any transportation plan, program, or project with air quality control plans. The conformity process, carried out at the regional level, is defined by the Clean Air Act and related amendments.

Constraints: More commonly described as "environmental features." Significant resources, facilities or other features of a project area located in or adjacent to an existing or proposed

transportation corridor that serve to restrain, restrict, or prevent the ready implementation of proposed transportation improvements in a given area; may include natural or physical resources, important structures, manner of payment, and various administrative requirements that must be met.

Consulting Party: The participants included in the consultation on historic properties during the Section 106 review process. For highway projects, consulting parties always include the Department of Transportation and the State Historic Preservation Office, local governments, representatives of Indian tribes, and may include others such as affected land-owners and other interested parties.

Cooperating Agency: As defined in the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), "any organization other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in ... [a] major federal action significantly affecting the quality of the human environment." CEQ emphasizes that agency cooperation should begin early in the NEPA process.

Council of Environmental Quality Regulations (CEQ): Directives issued by the Federal Council on Environmental Quality (40 CFR 1500:1508) that govern the development and issuance of environmental policy and procedures for federal aid actions by public agencies. The regulations contain definitions, spell out applicability and responsibilities, and mandate certain processes and procedures to be followed by state agencies that administer federally funded programs.

Cultural/Architecture Investigations: Studies that result in identification of resources (buildings, structures and sites) constructed over 50 years ago or of recent construction and demonstrably significant based on National Register of Historic Places guidelines, via literature research, photo documentation, analysis, and interpretation.

Cumulative Impact: The impact on the environment that results from the incremental impact of a transportation project when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions.

D

Design Concept: In a major investment study, the type of facility (i.e. freeway, arterial, local road, etc.) being considered. Also see Scope.

Design Criteria: Established local, state, and national standards and procedures that guide the establishment of roadway layouts, alignments, geometry, and dimensions for specified types of roadways in certain defined conditions. The principal design criteria for roadways are traffic volume, design speed, functional classification, the physical characteristics of vehicles, the classification of vehicles, and the percentage of various vehicle classification types that use the roadway.

Design Exception: An approval issued by a state or federal agency to permit certain deviation from a specified, accepted design criteria granted on the basis of a report explaining the need for the exception and the consequences that will result from the action.

Determination of Effect: A finding made by Departments of Transportation for federal actions, in consultation with the State Historic Preservation Officer (and the Advisory Council for Historic Preservation), which determines whether a proposed project affects a property included on or eligible for the National Register of Historic Places.

Determination of Eligibility: The process of assembling documentation to render professional evaluation of the historical significance of a property. Departments of Transportation, in consultation with the State Historic Preservation Officer apply National Register of Historic Places criteria when deciding matters of historical significance.

Direct Effects: Influences or occurrences caused by a given action and occurring at the same time as the action. Changes in noise levels, traffic volumes, or visual conditions are some examples of direct effects generated by transportation improvements.

E

Environmental: In a scientific context, a combination of external or extrinsic conditions present in nature. In a planning context, a category of analytical studies of aesthetic values, ecological resources, cultural resources, sociological and economic conditions, etc.

Environmental Impact Statement (EIS)**:** Report that evaluates the economic, social, and environmental effects of a proposed major transportation project for which federal funding is being sought. Impacts could include air, water, or noise pollution; natural resources; employment effects; displacement of people or businesses; or community or regional growth impacts.

Environmental Justice: Efforts to avoid disproportionately high and adverse impacts on minority and low-income populations with respect to human health and the environment.

Environmental Justice Area (EJ Area): An “EJ area” was defined to include any census tract in which the minority or low-income population meets either of the following thresholds:

(a) The minority or low-income population in the census tract exceeds 50 percent, or

(b) The percentage of a minority or low-income population in the affected area is “meaningfully greater” than the percentage of minority population in the general population.

Environmental Protection Agency (EPA): EPA is the federal source agency of air quality control regulations affecting transportation.

Environmental Site Assessment (ESA): An environmental study conducted to assess the potential for contamination of a property or parcel with hazardous substances. The process by which a person or entity seeks to determine if a particular parcel of real property (including improvements) has been impacted by hazardous substances and/or petroleum products.

Erosion and Sedimentation Control Plan: A detailed plan developed to minimize accelerated erosion and prevent sedimentation damage.

Expressway: A divided highway facility with partial control of access and two or more lanes for the exclusive use of through traffic in each direction; includes grade separations at most major intersections.

F

Federal Action: A highway or transit project proposed by the Federal Highway Administration or Federal Transit Administration, using federal funding. It also includes actions such as joint and multiple use permits, other federal permits and approvals, changes in access control, etc., which may or may not involve a commitment of federal funds.

Federal Highway Administration (FHWA): An agency of the U.S. Department of Transportation responsible for carrying out federal highway and transportation mandates through a network of several regional offices and Division Offices in each state.

Field Review: A site visit conducted to gather or verify data, define scopes of work, perform analyses, and make decisions for specific projects.

Final Design: The development of detailed working drawings, specifications, and estimates for transportation projects. Final Design follows the receipt of necessary design and/or environmental approval and it includes right-of-way acquisition, utility relocation, and contract advertisement and award.

Freeway: A divided highway facility with full control of access and two or more lanes for the exclusive use of through traffic in each direction. See Expressway.

Functional Classification**:** A method of cataloging a road's purpose and design. Roads are classified as Interstates, Freeways / Expressways, Arterials, Collectors, and local roads.

G

Geographical Information Systems (GIS): Technology designed to capture, store, manage, manipulate, analyze and display geographically referenced data.

Geometric Design: Pertains to those engineering activities involving standards and procedures for establishing the horizontal and vertical alignment and dimensions of slopes of a highway. It

includes engineering work involved with proportioning the visible elements of a facility, tailoring the highway to the terrain, the controls of environmental and land space usage, and the requirements of the highway user, individually and collectively.

Grade Separation: A geometric difference in elevation between two or more overlapping and/or intersecting roadways.

H

Highway: Term used to describe higher capacity roads; also includes rights of way, bridges, railroad crossings, tunnels, drainage structures, signs, guardrails, and protective structures in connection with highways.

Human Environment: Human environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment.

I

Identification of Alternatives: The U.S. Department of Transportation's engineering and environmental evaluations, in which the Department identifies and chooses an initial set of study alternatives that address the stated program objectives and the project need, and which are sensitive to the resources and land uses of a project area. The process involves a wide variety of possible options, assessing the merits and drawbacks, and choosing those that should be carried forward. Alternatives to be studied normally include the No Build or No Action alternative, an upgrading of the existing roadway alternative, new transportation routes and locations, transportation systems management strategies, multi-modal alternatives if warranted, and any combination of the above.

Impacts: Positive or negative effects upon the natural or human environment resulting from transportation projects.

Indirect Effect: An impact that can be expected to result from a given action that occurs later in time or further removed in distance; for example, induced changes to land use patterns, population density or growth rate.

Independent Utility: Usable and reasonable expenditure public funding even if no additional transportation improvements in the area are made.

Infrastructure: A term connoting the physical underpinnings of society at large, including, but not limited to, roads, bridges, transit, water and waste systems, public housing, sidewalks, utility installations, parks, public buildings and communications networks.

Interested Community: A compilation of the names and addresses of persons or groups affected by or interested in a specific transportation project. This information is gathered and maintained by Department of Transportation officials or local planning agencies during the course of transportation project studies.

Interstate System: The system of highways that connects the principal metropolitan areas, cities, and industrial centers of the U.S. The Interstate System also connects the U.S. to internationally significant routes in Mexico and Canada. The routes of the Interstate System are selected jointly by the state department of transportation for each state and the adjoining states, subject to the approval of the U.S. Secretary of Transportation.

J

Joint Base Anacostia-Bolling: The 905-acre military installation located in Southeast Washington, D.C. was established in October 2010 in accordance with congressional legislation implementing the recommendations of the 2005 Base Realignment and Closure Commission. The installation is the result of the consolidation of Naval Support Facility Anacostia and Bolling Air Force Base, adjoining but separate military installations prior to the consolidation.

Jurisdictional Determination (JD): A site survey or document review performed by the U.S. Army Corps of Engineers to officially determine whether or not a given parcel of land is subject to regulation as waters of the U.S., and if so, the extent of the area. This is generally applied to wetlands, but may also be used to determine jurisdictional issues with respect to headwater streams, ditches, and similar areas.

L

Land Use: Refers to how land and the structures (development) on it are used, i.e., commercial, residential, retail, industrial, etc.

Lead Agency: A state or federal agency taking primary responsibility for preparing an engineering or environmental document.

Level of Service (LOS): A qualitative measure describing operational road (traffic) conditions and the perception of motorists of the existing conditions. Six levels of service are defined for each type of facility, ranging from A to F, with LOS A representing the best operating conditions and LOS F the worst.

Limits of Disturbance (LOD): The physical area that the selected designer/contractor will have the option to use to construct the Project, as well as other required activities such as parcel access, material storage or staging if it is not specifically prohibited (e.g., such as for non-permitted wetland impacts).

Local Street: A class of street intended solely for access to adjacent properties.

Logical Termini: Rational end points for a transportation improvement, or rational end points for a review of the environmental impacts.

Long Range: In transportation planning, refers to a time span of more than five years. A long-range plan typically covers a 20-year time span.

Low Impact Development: An approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product. (USEPA)

M

Mapping: A plan surface with graphic or photographic representation of land or water depicting the project area for a project. Existing alignments, alternatives, engineering design features, and environmental constraints are plotted on various types of mapping. Photogrammetric (aerial) mapping assists in resource identification and studies. Topographic (base) mapping provides a foundation in alignment layout. Property tax maps and traffic data maps also are consulted in the transportation development process. The type and scale of mapping are selected to fit the terrain and land use intensity of a project area as well as the level of detail in the proposed design.

Mitigation Measures: Specific design commitments made during the environmental evaluation and study process that serve to moderate or lessen impacts deriving from the proposed action.

Mobility: The ability to move or be moved from place to place. Typically, mobility is the ease with which movement can occur through a transportation system.

Mode and Multimodal: Form of transportation, such as automobile, transit, bicycle, and walking. Intermodal refers to the connections between modes and multimodal refers to the availability of transportation options within a system or corridor.

Model: A set of mathematical formulas that represent the activity and the interactions within a system so that the system may be evaluated according to various conditions: land use, population, households and employment (socio-economic), transportation, or others.

Multiple Use: The non-highway use of the airspace above or below the highway gradeline between the horizontal highway right-of-way limits acquired by the highway agency.

Multi-use Trail: Off-street paths for the exclusive use of non-vehicular modes such as walking, running, cycling, and rollerblading. Often designed for recreational use, they are intended to supplement the on-street bicycle network.

N

National Ambient Air Quality Standards (NAAQS): Federal standards that set allowable concentrations and exposure limits for various air pollutants.

National Environmental Policy Act (NEPA): Passed in 1969, the federal legislation requiring states to document the environmental impact of transportation projects. The NEPA process is enforced by regulations of the Council on Environmental Quality.

National Pollutant Discharge Elimination System (NPDES) Permit: Mandated by Section 401 of the Clean Water Act for the discharge of pollutants from a point source into surface waters (including wetlands) for disposal purposes; intended to regulate the amount of chemicals, heavy metals, and biological wastes discharged in wastewater.

National Register of Historic Places (NRHP): The national list of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering, or culture. It is maintained by the Secretary of the Interior under authority of Section 101(a)(1)(A) of the National Historic Preservation Act, as amended.

National Register of Historic Places Criteria for Evaluation: The criteria used by the National Park Service to evaluate the eligibility of properties for listing on the National Register of Historic Places (NRHP).

Navigable Waterway: Those waters subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events that impede or destroy navigable capacity (33 CFR 329.4).

Network: A graphic and/or mathematical representation of paths in a transportation system.

Non-Attainment Areas: Metropolitan areas that do not meet national ambient air quality standards for carbon monoxide and/or ozone pollution; ranked by the severity of their problem as marginal, moderate, serious, severe or extreme. In accordance with the Clean Air Act Amendments of 1990, these areas must take specific emission reduction measures.

Non-Environmental Justice Area (Non-EJ Area): (see Environmental Justice Area). The term “non-EJ area” does not imply the absence of EJ populations living in that area. The EJ analysis

distinguished between EJ areas and non-EJ areas as a tool for assessing the potential for disproportionate impacts on EJ populations.

Notice of Intent: Announcement in the *Federal Register* advising interested parties that an Environmental Impact Statement will be prepared and circulated for a given project.

O

Open House: An informal, unstructured Public Meeting during which information stations with exhibits convey important project information and Department of Transportation and consultant personnel are available to answer the public's questions.

Ordinary High Water (OHW): The ordinary high water mark is the elevation at which U.S. Army Corps of Engineers jurisdiction begins. The OHW mark is the line on the shore established by the fluctuations of water and indicated by physical characteristics such as an impressed natural line, shelving, and a vegetation change or debris lines.

Ozone: A colorless gas with a sweet odor. Ozone is not a direct emission from transportation sources but rather a secondary pollutant formed when hydrocarbons (HC) and nitrogen oxides (NOx) combine in the presence of sunlight. Ozone is associated with smog or haze conditions. Although ozone in the upper atmosphere protects the earth from harmful ultraviolet rays, ground level ozone produces an unhealthy environment in which to live.

P

Palustrine Emergent (PEM) Wetland: Includes all tidal and non-tidal wetlands dominated by persistent emergent vascular plants, emergent mosses or lichens, and all such wetlands that occur in tidal areas in which salinity due to ocean-derived salts is below 0.5 percent. Plants generally remain standing until the next growing season. (USEPA)

Palustrine Forested (PFO) Wetland: Includes all tidal and non-tidal wetlands dominated by woody vegetation greater than or equal to 5 meters in height and all such wetlands that occur in tidal areas in which salinity due to ocean-derived salts is below 0.5 percent. Total vegetation coverage is greater than 20 percent. (USEPA)

Particulate Matter (PM), (PM 10): Any material that exists as solid or liquid in the atmosphere. Particulate matter may be in the form of fly ash, soot, dust, fog, fumes, etc. Small particulate matter, or PM 10, is less than 10 microns in size and is too small to be filtered by the nose and lungs.

Peak Hour: The 60-minute period during which the largest volume of travel is experienced.

Planning Stage: The first stage of the transportation development process. Planning involves the development of a Statewide Multimodal Transportation Plan and Metropolitan Areas Plan. This phase involves inventories, data collection, problems/needs assessments, generating and comparing alternative plans, evaluating the social, economic, and environmental impacts of proposed transportation actions with a variety of public, agency, and citizen involvement groups, and selecting the preferred plan for the state and the Metropolitan Planning Organizations.

Plans: Technical drawings that show the location, character, and dimensions of prescribed project work, including layouts, profiles, cross-sections and other details.

Programming: A general term to refer to a series of activities carried out by the Department of Transportation, including data assessment, appraisal of identified planning needs and consideration of available or anticipated fiscal resources to result in the drawing up, scheduling and planning.

Programmatic Agreement (PA): see Agreements (Programmatic)

Project Area: A geographic area selected and defined at the outset of engineering and environmental evaluations that is sufficiently adequate in size to address all pertinent project matters occurring within it.

Public Authority: A federal, state, county, town, or township, Indian tribe, municipal or other local government or instrumentality with authority to finance, build, operate, or maintain toll or toll free transportation facilities.

Public Hearing: A meeting designed to afford the public the fullest opportunity to express support of, opposition to, or comment on a transportation project. Documentation is required and comment from the public go into the public record. Format for Public Hearings are not question-and-answer format and is governed by rules ordering who speaks when and for what duration. Public Hearings are overseen by a hearing official.

Public Involvement: Coordination events and informational materials geared toward public participation in the Transportation Development Process.

Public Meeting: An announced meeting conducted by transportation officials designed to facilitate public participation in the decision-making process and to assist the public in gaining an informed view of a proposed project during the Transportation Development Process. A Public Meeting is generally informal and a question-and-answer format and is a discussion between interested parties. Comments do not go into the public record. Public Meeting formats are open discussion with a moderator to keep comments focused and to ensure everyone has a change to ask his/her question.

Public Participation: The active and meaningful involvement of the public in the development of transportation plans and improvement programs. Federal transportation legislation and

regulations require that state departments of transportation proactively seek the involvement of all interested parties, including those traditionally under-served by the current transportation system.

Public Road: Any road or street under the jurisdiction of and maintained by a public authority and open to public traffic.

R

Recognized Environmental Condition: The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Record of Decision (ROD): A document prepared by the Division office of the Federal Highway Administration that presents the basis for selecting and approving a specific transportation proposal that has been evaluated through the various environmental and engineering studies. Typically, the ROD identifies the alternative selected in the Final Environmental Impact Statement (FEIS), the alternatives considered, measures to minimize harm, monitoring or enforcement programs, and an itemized list of commitments and mitigation measures.

Region: An entire metropolitan area including designated urban and rural sub-regions.

Regulatory Agency: An agency empowered to issue permits or recommend approval or denial of a permit or action.

Retractile Bridge: Retractile bridges are probably the least common of all movable bridges and are generally used for shorter spans. Center spans of the bridge deck are rolled or pulled backwards to provide an opening for vessels in the navigation channel.

Right-of-Way (ROW): Usually that land owned by or under the direct control of a transportation system and on which its users operate. The ROW area typically includes travel lanes, shoulders, curb and gutter, sidewalks, landscaping, and space for utilities.

S

Scope: The range of actions, alternatives, and impacts to be considered in an environmental impact statement.

Secondary Impact: An impact that is caused by a specific action, which take place later in time or further removed in distance, but are still reasonably foreseeable. Also see Indirect Effect.

Section 106 Procedures: Procedures based on Section 106 of the National Historic Preservation Act of 1966 that govern the identification, evaluation, and protection of historical and archaeological resources affected by state and federal transportation projects. Principal areas identified include required evaluations to determine the presence or absence of sites, the eligibility based on National Register of Historic Places criteria and the significance of the effect of a proposed project upon such a site.

Section 401 Water Quality Certification: Required by Section 401 of the federal Clean Water Act for projects involving the discharge of materials into surface waters, including wetlands. The applicant must demonstrate that activities will comply with water quality standards and other provisions of federal and state law and regulations regarding conventional and nonconventional pollutants, new source performance standards, and toxic pollutants.

Section 404 Permit: A permit issued by the U.S. Army Corps of Engineers to authorize the discharge of dredged or fill material into waters of the U.S. pursuant to Section 404 of the Clean Water Act.

Section 4(f) Determination: Administrative action by which the Federal Highway Administration confirms that, on the basis of extensive studies and analysis, there are no “prudent and feasible” alternatives to the taking of land from resources protected under Section 4(f) of the U.S. Department of Transportation Act, as amended.

Section 4(f) Resources: Publicly owned parks, recreation lands, wildlife/waterfowl refuges, and historic sites that are listed on or eligible for listing on the National Register of Historic Places (NRHP).

Section 6(f): A provision in the Federal Land and Water Conservation Fund Act that protects public recreational properties developed or enhanced using federal funding supplied to states or municipalities under the Act by requiring replacement of lands converted to non-recreational uses. Proposed transportation projects, which affect such lands, require a study and an analysis of alternatives to serve as the basis for a Section 6(f) finding by the U.S. Department of the Interior. Specific state legislation for any proposed land transfer is also required in order to implement a Section 6(f) action. Mitigation generally includes replacement of Section 6(f) land taken for a project.

Sensitive Receptor: An area of frequent human use (i.e. residential property, church, school, library, hospital, park, hotel, motel, etc.).

Sensitive Species: Plant or animal species that are (1) federally listed or proposed threatened or endangered species; (2) bird species protected under the Migratory Bird Treaty Act; (3) species protected under state endangered species laws and regulations, plant protection laws and regulations; fish and game codes, or species of special concern listings and policies; or (4)

species recognized by national, state, or local environmental organizations (e.g., The Nature Conservancy).

Signed Bicycle Route: Preferred routes for cyclists along shared roadways, indicated by signage. The routes are typically selected to connect cyclists to major destinations and major bicycle facilities and direct cyclists to low traffic volume roads. In addition to bicycle route signage, these routes may also be characterized by wider curbside travel lanes and distinct pavement markings.

Significant Impacts: Any number of social, environmental, or economic effects or influences that may result from the implementation of a transportation improvement; classified as direct, secondary, or cumulative, which significantly affect the human and natural environments. The Federal Highway Administration mandates environmental clearance documents based upon the significance of impacts. In most cases, environmental impact statement projects involve significant impacts. Both context and intensity, as described in 40 CFR 1508.27, are important when determining significance.

Sole Source Aquifer: As defined by the federal Safe Drinking Water Act, a groundwater source that represents the principle source of a water supply for a community or region that, if contaminated, would create a significant hazard to public health.

Special Aquatic Sites: Those sites identified in accordance with 40 CFR 230 Subpart E (i.e. sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes). They are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region.

State Historic Preservation Officer (SHPO): The official appointed or designated pursuant to Section 101(b)(1) of the National Historic Preservation Act to administer the State historic preservation program. The SHPO consults with state and federal agencies during the Section 106 process review. The SHPO administers the national historic preservation program at the State level, reviews National Register nominations, and maintains file data on historic properties that have been identified but not yet nominated. Agencies seek the view of the SHPO in the identification of historic properties and the assessment of the effects of a project on historic properties.

State Transportation Improvement Plan (STIP): A staged, multi-year statewide, intermodal program of transportation projects that is consistent with the statewide transportation plan and planning processes, metropolitan plans, Transportation Improvement Plans and processes.

Streetscape: The various hardscape and landscape elements that comprise the visual character of a street. These typically include street trees, streetlights, sidewalks, paving treatments,

utilities, and street furniture. Within the roadway, these include curb, gutter, parking lanes, travel lanes, crosswalks, and medians.

Study Area: see Project Area.

Swing Span Bridge: The swing bridge is a movable bridge that opens by revolving about a vertical axis. It consists of two spans supported on a central pivot pier, similar to the existing Frederick Douglass Memorial Bridge.

T

Total Maximum Daily Load (TMDL): TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that load among the various sources of that pollutant. (USEPA)

Transcript: A typewritten record, usually prepared by a certified stenographer, providing a verbatim account of the official proceedings that take place at all Public Hearings and some Public Meetings.

Transit: Generally refers to passenger service provided to the general public along established routes with fixed or variable schedules at published fares. Related terms include public transit, mass transit, public transportation or paratransit. Transit modes include commuter rail, heavy or light transit, bus, or other vehicles designated for commercial transportation of non-related persons.

Transportation (or Travel) Demand Management (TDM): Strategies and collective efforts designed to achieve reductions in vehicular travel demand. In general, TDM does not require major capital improvements. It includes ridesharing, land use policies, employer-based measures, and pricing/subsidy policies.

Transportation Improvement Plan (TIP): A document prepared by metropolitan planning organizations listing projects to be funded with Federal Highway Administration and Federal Transit Administration funds for the next one to three-year period.

Transportation Management Area (TMA): Defined in federal transportation legislation as any urbanized area over 200,000 population. Within a TMA, all transportation plans and programs must be based on a continuing and comprehensive planning process carried out by the metropolitan planning organization (MPO) in cooperation with state(s) and transit operators.

Transportation System Management (TSM): That part of the urban transportation planning process undertaken to improve the efficiency of the existing transportation system. The intent is to make better use of the existing transportation system by using short-term, low-capital-cost transportation improvements that generally cost less and can be implemented more quickly than system development actions.

Travel Time: Customarily calculated as the time it takes to travel from "door to door." In transportation planning, the measures of travel time include time spent accessing, waiting, and transferring between vehicles as well as time spent traveling.

U

U.S. Department of Transportation (DOT): The principal direct federal funding and regulating agency for transportation facilities and programs. Federal Highway Administration and Federal Transit Administration are units of the U.S. Department of Transportation.

Urban Diamond Interchange: A connection between two roadways provided by one-way diagonal ramps in each quadrant. The connection to the major highway is free-flowing and the connection at the crossroad is typically signalized.

Urban Principal Arterial: A type of arterial that provides a high degree of mobility for a long trip length. These types of streets typically have at-grade intersections with no access control other than traffic signals.

Urbanized Area: An area that contains a city with 50,000 residents, plus surrounding incorporated areas, which meet certain size or density criteria.

W

Wetlands: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence or vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

Z

Zone: The smallest geographically designated area for analysis of transportation activity. A zone typically ranges in size from one to 10 square miles. Average zone size depends on total size of a project area.

chapter 10.0

acronyms

ACHP	Advisory Council on Historic Preservation
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AFB	Air Force Base
ANC	Advisory Neighborhood Commissioners
ANCs	Area Neighborhood Councils
APE	Area of Potential Effect
ARC	Aesthetic Review Committee
AWI	Anacostia Waterfront Initiative
BA	Biological Assessment
BG	Block Groups
BMP	Best Management Practice
CAAAs	Clean Air Act Amendments
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CEQ	Council of Environmental Quality
CFA	U.S. Commission of Fine Arts
CFR	Code of Federal Regulations
CHHD	Capitol Hill Historic District
CHRS	Capitol Hill Restoration Society
CLRP	Constrained Long-Range Transportation Plan
CNEs	Common Noise Environments
CO	Carbon Monoxide
CPs	Consulting Parties
CSO	Combined Sewer Overflow
CSXT	CSX Transportation
CWA	Clean Water Act
DB	Design-Build
dBA	A-weighted Sound Level

dB	Decibels
DC	District of Columbia
DC Water	Water and Sewer Authority (District of Columbia)
DCMR	District of Columbia Municipal Regulations
DCOP	District of Columbia Office of Planning
DCOZ	District of Columbia Office of Zoning
DC SHPO	District of Columbia State Historic Preservation Office
DDOE	District of Columbia Department of Environment
DDOT	District of Columbia Department of Transportation
DEIS	Draft Environmental Impact Statement
DHS	Department of Homeland Security
DOT	U.S. Department of Transportation
DPR	District Department of Parks and Recreation
DS	Display Ship
EJ	Environmental Justice
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FY	Fiscal Year
GIS	Geographical Information Systems
IMR	Interchange Modification Report
JBAB	Joint Base Anacostia-Bolling
JD	Jurisdictional Determination
LID	Low Impact Development
LOD	Limits of Disturbance
LOS	Level of Service
LUST	Leaking Underground Storage Tank
MC	Munitions Constituents
MDOT	Maryland Department of Transportation
MEC	Munitions and Explosives of Concern
MLK	Martin Luther King, Jr.
MOA	Memorandum of Agreement
MSAT	Mobile Source Air Toxics
MTA	Maryland Transit Administration
MWCOG	Metropolitan Washington Council of Governments

NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NCPC	National Capital Planning Commission
NCPCC	National Capital Park and Planning Commission
NE	Northeast
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NMHF	National Maritime Heritage Foundation
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NoMA	North of Massachusetts Avenue
NOx	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
NTR	Noise Technical Report
O3	Ozone
OHW	Ordinary High Water
OP	District of Columbia Office of Planning
PA	Programmatic Agreement
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PDF	Portable Document Format
PEM	Palustrine Emergent (Wetlands)
PEPCO	Potomac Electric Power Company
PESA	Preliminary Environmental Screening Assessment
PFO	Palustrine Forested (Wetlands)
PM2.5	Particulate Matter less than 2.5 Micrometers
PM10	Particulate Matter less than 10 Micrometers
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions
RFP	Request for Proposal
ROD	Record of Decision
ROW	Right-of-way
RR	Railroad
SAFETEA-LU	Safe Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users

SARA	Superfund Amendments and Reauthorization Act
SB	Southbound
SCS	South Capitol Street
SE	Southeast
Supplemental DEIS	Supplemental Draft Environmental Impact Statement
Supplemental FEIS	Supplemental Final Environmental Impact Statement
SHPO	State Historic Preservation Office
SI	Site Investigation
SIP	State Implementation Plan
STP	Shovel Test Pit
SW	Southwest
TDM	Transportation (or Travel) Demand Management
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TMDL	Total Maximum Daily Loads
TNM	Traffic Noise Model
TPB	Transportation Planning Board
TSM	Transportation System Management
TTR	Traffic and Transportation Report
USACE	United States Army Corps of Engineers
USC	United States Code
USCG	United States Coast Guard
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USN	United States Navy
USS	United States Ship
UST	Underground Storage Tank
VDOT	Virginia Department of Transportation
VMT	Vehicle Miles Traveled
VOCs	Volatile Organic Compounds
VQC	Visual Quality Concept
VQD	Visual Quality Difference
VQR	Visual Quality Ratings
WASA	Washington Area Sewer Authority
WB	Westbound
WMATA	Washington Metropolitan Area Transit Authority
WNY	Washington Navy Yard

chapter 11.0

index

A

Accessibility, ES-3, 1-12, 4-86, 5-6, 9-1
Adverse effect, 4-38
Advisory Council for Historic Preservation
ACHP, 9-1
Agency Coordination, 8-2, 8-4, 9-1
Air Quality, ES-10, ES-13, ES-14, 3-2, 3-3, 4-3, 4-6, 4-7, 4-11, 4-99, 4-110, 6-1, 6-2, 9-10
Alternatives, ES-7, 4-30, 4-52, 4-73, 4-77, 5-3, 5-6, 5-15, 5-16, 5-18, 5-23, 9-2, 9-7
Anacostia Park, ES-4, ES-11, ES-12, 3-5, 3-6, 3-7, 3-34, *3-38*, 3-48, 3-49, 3-50, 4-4, 4-5, 4-9, 4-16, 4-38, 4-44, 4-51, 4-52, 4-64, 4-68, 4-69, 5-10, 5-11, 5-13
Anacostia Riverwalk Trail, ES-7, 2-7, 2-31, 2-33, 3-50
Anacostia Shoreline Pump Station, 4-45, 5-15
Anacostia Waterfront Initiative
AWI, 1-6, 1-8, 2-32, 2-33, 5-24, 8-6, 8-9
Andrews Air Force Base, 1-5, 4-43, 5-9
Archaeological Resources, ES-12, 3-43, 4-5, 4-49
Area of Potential Effect
APE, 2-33, 3-8, 3-32, 3-33, 3-40, 3-42, 3-43, 3-44, 4-19, 4-39, 4-49, 4-50, 4-105, 5-14, 8-13, 9-2
Average Daily Traffic
ADT, 9-2

B

Barry Farm, 2-7, 3-12, 3-17, 3-24, 4-32, 4-74
Bicyclist, 2-20, 2-22
Biological Assessment, *3-36*
Bolling Air Force Base, 3-62
Bonus Army, 4-44, 5-10
Bridge, ES-1, ES-3, ES-4, ES-8, ES-11, ES-12, 1-3, 1-4, 1-5, 1-6, 1-8, 1-9, 2-6, 2-7, 2-9, 2-15, 2-16, 2-17, 2-18, 2-26, 2-27, 2-29, 2-30, 2-31, 2-32, 2-33, 3-3, 3-5, 3-6, 3-11, 3-14, 3-15, 3-16, 3-36, 3-46, 3-50, 3-53, 3-55, 3-56, 3-62, 3-65, 3-66, 3-67, 4-4, 4-5, 4-11, 4-18, 4-32, 4-34, 4-35, 4-37, 4-38, 4-43, 4-44, 4-51, 4-52, 4-55, 4-57, 4-58, 4-60, 4-61, 4-62, 4-66, 4-68, 4-69, 4-73, 4-75, 4-77, 4-91, 4-93, 4-94, 4-95, 4-96, 4-102, 4-104, 4-112, 5-1, 5-9, 5-16, 5-17, 5-18, 5-21, 6-2, 8-2, 8-5, 8-6, 8-7, 8-8, 8-9, 8-10, 9-2, 9-16
Build Alternative ES-2, ES-7, 4-34, 5-15, 5-16, 5-17
Bus, ES-13, 4-6, 4-107

C

Capitol Hill Historic District, 4-40, 5-13, 5-14
Carrollsburg Place, 4-41, 5-14
Church, 3-46, 4-32, 4-33, 4-41, 4-67, 4-86, 5-14, 8-2
Clean Air Act Amendments
CAAAs, 9-3
Clean Water Act
CWA, 9-3
Community, ES-9, ES-14, 3-6, 3-17, 3-18, 3-21, 4-2, 4-7, 4-8, 4-31, 4-97, 4-109, 6-2, 7-4, 8-15, 9-8
Construction, ES-12, ES-14, 2-31, 2-33, 3-3, 3-22, 3-48, 3-55, 4-5, 4-7, 4-14, 4-38, 4-49, 4-69, 4-97, 4-99, 4-100, 4-104, 4-105, 4-107, 4-109, 4-110, 4-111, 4-112, 4-113, 4-114, 4-115, 4-116, 5-5, 8-10
Council of Environmental Quality Regulations
CEQ, 9-4
Cultural Resources, ES-12, ES-13, ES-14, ES-16, 3-8, *3-40*, 4-5, 4-6, 4-7, 4-19, 4-38, 4-49, 4-105, 4-114, 6-1, 6-2
Cumulative Impacts, ES-13, 4-6, 4-13

D

District Department of Transportation
DDOT, ES-1
Draft Environmental Impact Statement
DEIS, ES-7, 1-8

E

Economy, ES-9, ES-14, 3-1, 4-3, 4-7, 4-10, 4-98, 4-109
Employment, ES-9, ES-14, 3-1, 3-20, 4-3, 4-7, 4-10, 4-98, 4-109
Endangered Species Act, 3-8, 3-36, 4-18, 4-36
Energy, ES-13, 4-6, 4-13, 4-116, 6-1
Environmental Commitment, 4-108
Environmental Justice, ES-9, 3-7, 3-29, 3-30, 3-32, 3-33, 4-2, 4-16, 4-21, 4-31, 4-109, 6-1, 9-5
Environmental Permits and Approvals, ES-16
Environmental Site Assessment
ESA, ES-16, 9-6

F

Federal Register, ES-1, 1-10, 1-11, 9-11
FEIS Preferred Alternative, ES-1, ES-4, ES-8, ES-9, ES-ES-10, ES-11, ES-12, ES-13, ES-14, ES-15, 1-8, 1-9, 2-6, 2-8, 2-9, 2-10, 2-11, 2-19, 2-20, 3-57, 3-58, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-10, 4-11, 4-12, 4-13, 4-14, 4-15, 4-16, 4-17, 4-18, 4-19, 4-20, 4-21, 4-33, 4-34, 4-38, 4-39, 4-50, 4-51, 4-52, 4-53, 4-54, 4-55, 4-56, 4-57, 4-58, 4-59, 4-62, 4-63, 4-64, 4-65, 4-66, 4-67, 4-68, 4-69, 4-70, 4-73, 4-74, 4-75, 4-76, 4-79, 4-80, 4-81, 4-82, 4-83, 4-84, 4-85, 4-96, 4-97, 4-101, 4-102, 4-105, 4-106, 5-1, 5-9, 5-15, 5-16, 5-17, 5-20, 8-11
Final Environmental Impact Statement
FEIS, 8-6, 8-7, 9-13
Fish, ES-16, 3-8, 4-18, 4-113, 8-4
Floodplains, ES-11, 3-8, *3-38*, *3-39*, 4-4, 4-11, 4-102

G

Garfield Park, 5-13, 5-14
Geology, ES-11, 3-5, 4-4, 4-19, 4-38, 4-105, 4-113
Groundwater, ES-10, 4-3

H

Hazardous Materials, ES-12, ES-14, ES-16, 3-9, 3-45, 4-5, 4-7, 4-12, 4-24, 4-106, 4-115, 6-1, 6-2
Historic Preservation Office
SHPO, 3-40, 4-59
Howard Road, ES-4, ES-11, ES-12, 2-6, 2-7, 2-18, 2-20, 2-22, 3-6, 3-10, 3-44, 3-46, 3-50, 3-51, 3-57, 3-59, 3-60, 4-4, 4-5, 4-44, 4-49, 4-51, 4-52, 4-62, 4-63, 4-66, 4-73, 4-77, 4-81, 4-82, 4-84, 4-85, 4-92, 4-93, 4-97, 5-10, 5-11, 5-16, 5-17, 5-18

I

I Street, 1-4, 2-30, 3-10, 3-47, 3-50, 3-59, 4-34, 4-35, 4-40, 4-41, 4-56, 4-77
I-295, ES-1, ES-4, 2-7, 2-11, 2-20, 2-21, 2-31, 2-32, 2-33, 3-3, 3-9, 3-16, 3-17, 3-34, 3-53, 3-55, 3-56, 3-57, 3-59, 3-60, 4-11, 4-13, 4-15, 4-20, 4-33, 4-34, 4-35, 4-64, 4-65, 4-66, 4-73, 4-75, 4-77, 4-79, 4-80, 4-81, 4-82, 4-83, 4-91, 4-92, 4-116, 5-2, 5-9, 5-11, 5-13, 5-16, 5-17, 5-18, 5-21, 8-8
I-395, 2-6, 2-10, 2-24, 2-32, 2-33, 3-3, 3-17, 3-55, 3-56, 3-57, 3-59, 4-20, 4-34, 4-35, 4-75, 4-77, 4-79, 4-80, 4-82, 4-83, 4-84, 4-85, 4-116
Indirect Impacts, ES-13, 4-6, 4-14

L

Landscape Units, 4-51, 4-52, 4-68
Level of Service (LOS), 4-79, 4-80, 9-8
LOS, ES-13, 3-57, 3-59, 4-6, 4-20, 4-76, 4-79, 4-80, 4-81, 4-82, 4-83, 4-84, 4-85, 9-2, 9-8

M

M Street, ES-4, ES-12, 2-10, 2-11, 2-24, 3-3, 3-11, 3-12, 3-17, 3-20, 3-33, 3-47, 3-50, 3-51, 3-57, 3-62, 3-63, 4-5, 4-34, 4-41, 4-46, 4-51, 4-52, 4-54, 4-55, 4-56, 4-57, 4-69, 4-76, 4-81, 4-82, 4-83, 4-84, 4-85, 4-86, 4-87, 4-88, 4-89, 4-90, 4-109, 5-1, 5-7, 5-16, 5-19, 5-22, 8-9
McMillan Commission, 4-47
Memorandum of Agreement
MOA, ES-16, 1-8, 3-40, 4-50, 8-13
Metropolitan Washington Council of Governments

MWCOG, 3-14
Minority Populations, 3-29
Mitigation, 4-71, 4-85, 4-109, 4-110, 4-111, 4-112, 4-113, 4-114, 4-115, 4-116, 5-6, 5-20, 5-23, 9-3, 9-9, 9-14
Mobility, 3, 14, 1-12, 4-7, 5-6, 9-9
Multimodal, 9-9, 9-12

N

National Environmental Policy Act
NEPA, ES-1, 3-29, 8-2, 9-4, 9-10
National Register of Historic Places
NRHP, 9-2, 9-10, 9-14
Nationals Park, 2-15, 3-6, 3-11, 3-17, 3-51, 3-60, 4-52, 4-53, 4-69
Nationwide Permit, 4-36
New Jersey Avenue, ES-4, ES-12, 1-4, 2-7, 2-11, 2-24, 2-25, 2-26, 2-30, 3-6, 3-11, 3-12, 3-17, 3-20, 3-47, 3-48, 3-51, 4-5, 4-19, 4-34, 4-51, 4-52, 4-69, 4-70, 5-2, 5-7, 5-13, 5-14, 5-19, 5-22
No Build Alternative, ES-7, 13, 4-6, 4-13, 4-20, 5-15, 5-18, 5-20, 5-23, 9-2
Notice of Availability, 1-10
Notice of Intent, 1-10, 1-11, 8-1, 9-11

O

Old National Capitol Pumphouse, 4-45, 5-15

P

Parklands, ES-17
Parks, 5-5, 5-14
Particulate Matter
PM, 9-11
Pedestrian, ES-7, ES-12, ES-14, 2-18, 2-20, 2-22, 2-24, 3-9, 3-50, 4-5, 4-7, 4-20, 4-71, 4-73, 4-86, 4-106, 4-107, 4-115, 5-15, 6-1, 8-6, 8-9
Permits, 4-14, 4-104
Plan of the City of Washington, ES-12, ES-15, 1-4, 2-27, 4-5, 4-8, 4-39, 5-1, 5-7, 5-9, 5-16, 5-17, 5-18, 5-19, 5-21, 5-22, 5-23
Poplar Point, 2-15, 2-19, 2-20, 3-5, 3-7, 3-16, 3-34, *3-38*, 3-43, 3-44, 3-46, 3-48, 3-49, 4-9, 4-16, 4-43, 4-45, 4-63, 4-64, 4-74, 4-107, 5-7, 5-10, 5-11, 5-14
Population, 3-18, 3-24, 3-25, 3-26, 3-27, 3-29, 3-32, 3-66
Potomac Avenue, 1-4, 2-6, 2-7, 2-17, 2-30, 3-12, 3-15, 3-47, 3-53, 3-57, 3-59, 3-62, 4-34, 4-39, 4-45, 4-53, 4-81, 4-82, 4-83, 4-84, 4-109, 5-7, 5-9, 5-16, 5-17, 5-19, 5-22
Preferred Alternative, 4-20
Programmatic Agreement
PA, 3-40, 9-12
Project Area, ES-3, ES-7, ES-8, 1-8, 1-12, 2-7, 2-15, 2-20, 2-27, 2-28, 2-30, 2-32, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-10, 3-11, 3-12, 3-14, 3-15, 3-16, 3-17, 3-19, 3-20, 3-22, 3-24, 3-25, 3-26, 3-27, 3-28, 3-29, 3-30, 3-31, 3-32, 3-33, 3-34, 3-36, *3-38*, 3-45, 3-48, 3-50, 3-51, 3-53, 3-55, 3-57, 3-58, 3-59, 3-60, 3-62, 3-63, 3-64, 3-65, 4-8, 4-10, 4-15, 4-16, 4-17, 4-18, 4-19, 4-21, 4-24, 4-32, 4-33, 4-34, 4-37, 4-40, 4-41, 4-42, 4-43, 4-44, 4-45, 4-46, 4-47, 4-48, 4-51, 4-56, 4-59, 4-67, 4-70, 4-74, 4-75, 4-76, 4-77, 4-78, 4-79, 4-80, 4-81, 4-82, 4-83, 4-85, 4-97, 4-98, 4-99, 4-103, 4-106, 5-7, 5-8, 5-9, 5-13, 5-14, 5-15, 8-2, 8-12, 8-13, 9-12, 9-16
Public Hearing, 9-12, 9-16
Public Meeting, 4-31, 9-11, 9-12, 9-16
Purpose and Need, ES-3, ES-7, 1-11, 2-6, 5-4, 5-6, 5-15, 5-18, 5-20, 6-2, 8-13

R

Record of Decision
ROD, ES-1, 1-8, 9-13
Retractile Bridge, 9-13
Revised Preferred Alternative, ES-8, 2-13, 4-13, 4-74

S

Safety, ES-3, 9, 1-12, 3-10, 4-2, 4-12, 4-106, 4-115, 5-6
Schools, 3-20
Section 401 Water Quality Certification, ES-16, 4-36, 9-14
Skyline Inn, 3-43, 5-15
Soils, ES-11, 14, 3-5, 4-4, 4-7, 4-19, 4-38, 4-105, 4-113
Southwest Rowhouse Historic District, 4-41, 5-14
Specimen Trees, ES-11, 4-4, 6-3

St. Vincent de Paul Church, 4-41, 5-14
Streetscape, ES-4, 2-19, 2-20, 2-24, 2-25, 5-2, 5-22, 9-15
Suitland Parkway, ES-1, ES-4, ES-11, ES-12, ES-15, 1-4, 1-5, 2-6, 2-7, 2-10, 2-11, 2-18, 2-20, 2-21, 2-22, 2-31, 2-33, 3-3, 3-6, 3-10, 3-50, 3-53, 3-55, 3-56, 3-57, 3-59, 3-62, 4-4, 4-5, 4-8, 4-11, 4-13, 4-15, 4-19, 4-20, 4-21, 4-33, 4-35, 4-38, 4-39, 4-43, 4-51, 4-52, 4-62, 4-63, 4-64, 4-65, 4-66, 4-67, 4-69, 4-73, 4-77, 4-81, 4-82, 4-83, 4-84, 4-91, 4-92, 4-93, 4-96, 4-116, 5-1, 5-2, 5-7, 5-9, 5-10, 5-11, 5-16, 5-17, 5-18, 5-21
Synchro, 4-75

T

Topography, ES-11, 14, 3-5, 4-4, 4-7, 4-19, 4-38, 4-105, 4-113
Traffic, ES-13, ES-14, 2-17, 2-19, 2-29, 3-3, 3-9, 3-10, 3-53, 3-55, 3-56, 3-58, 3-59, 4-6, 4-7, 4-12, 4-15, 4-20, 4-26, 4-54, 4-63, 4-64, 4-74, 4-77, 4-78, 4-79, 4-80, 4-84, 4-107, 4-116, 6-1, 6-2, 6-3
Transportation System Management
TSM, ES-7, 9-16

V

VISSIM, 3-57, 4-75, 4-79, 4-80
visual quality, 2-21, 2-24, 2-25
Visual Quality, ES-12, ES-16, 2-26, 2-27, 2-29, 3-6, 4-5, 4-19, 4-50, 4-51, 4-52, 4-54, 4-56, 4-57, 4-62, 4-65, 4-67, 4-68, 4-70, 4-71, 4-115, 6-2, 8-8

W

Water Quality, ES-10, ES-14, 3-3, 4-3, 4-7, 4-17, 4-36, 4-102, 4-112, 6-3
Water Transportation, 3-65, 4-93
Wetlands, ES-10, 3-7, 3-34, 3-35, 4-3, 4-16, 4-112, 9-17
William Syphax School, 4-42, 5-14

chapter 12.0

references

The following is a list of references used to update and collect new information for this Supplemental DEIS.

16 USC 470 et seq. National Historic Preservation Act (NHPA) of 1966.

16 USC 703-712. Migratory Bird Treaty Act of 1918.

16 USC 1531 et seq. Endangered Species Act of 1973 (Endangered Species Act).

23 USC 138 and 49 USC 303. Section 4(f) of the US Department of Transportation Act of 1966 (US Department of Transportation Act of 1966), as amended.

23 CFR 771.130. *Environmental Impact and Related Procedures; Supplemental Environmental Impact Statements.*

23 CFR 772. Procedures for Abatement of Highway Traffic Noise and Construction Noise.

23 CFR 774. Parks, Recreation Areas, Wildlife and Waterfowl Refuges and Historic Sites (Section 4(f)).

33 USC 401. Section 9 of the Rivers and Harbors Appropriation Act of 1899.

33 USC 403. Section 10 of the Rivers and Harbors Appropriation Act of 1899.

33 USC 1251 et seq. Clean Water Act (CWA).

33 USC 1341. Section 401 of the Clean Water Act (CWA).

33 USC 1344. Section 404 of the Clean Water Act (CWA).

36 CFR 67. The Secretary of the Interior's Standards for Rehabilitation (The Standards for Rehabilitation).

36 CFR 800. Section 106 of the National Historic Preservation Act.

42 USC 103. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986.

42 USC 2000d et seq. Title VI of the Civil Rights Act of 1964 (Title VI).

42 USC 4601. Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs (Uniform Relocation Assistance and Real Property Acquisition Policies).

42 USC 6901 et seq. Resource Conservation and Recovery Act.

42 USC 7401 et seq. National Ambient Air Quality Standards (NAAQS).

54 DCR 7390. National Capital Revitalization Corporation and Anacostia Waterfront Corporation Reorganization Clarification Emergency Act of 2007.

H.R. 3699 (109th). 2006. Federal and District of Columbia Government Real Property Act of 2006.

Advisory Council on Historic Preservation (ACHP) et al. *The Memorandum of Agreement Among the Federal Highway Administration, the District of Columbia State Historic Preservation Office, the National Capital Planning Commission, the Advisory Council on Historic Preservation, and the District Department of Transportation, Regarding the South Capitol Street Project within the District of Columbia*. 2011

CH2M Hill. 2013. *Anacostia River Hydraulic Analysis and Bridge Scour Evaluation for the Replacement of Frederick Douglass Memorial Bridge*.

CH2M HILL. 2011. Site Inspection Report, Former Experimental Battery.

Council on Environmental Quality. 1997. Environmental Justice Guidance under the National Environmental Policy Act.

District of Columbia Water and Sewer Authority (DC Water formerly known as WASA). 2012. WASA's Recommended Combined Sewer Overflow (CSO) Long-Term Control Plan (CSO Long-Term Control Plan).

District of Columbia, Department of Consumer and Regulatory Affairs. 1996. DC FMP DCRA - Environmental Control Division/Fisheries Management Program). 1993-97. *Biological Sampling of Anadromous and Resident Fishes of Potomac and Anacostia Rivers*. Annual reports prepared by DC DCRA ERA Fisheries Management Program, Washington, D.C.

District of Columbia Department of Transportation (DDOT). 2014. Anacostia River Navigation Evaluation Final Report.

DDOT. 2014. Anacostia Waterfront Initiative: Transportation Master Plan 2014 Update.

DDOT. 2014. Biological Assessment (BA) for the Atlantic Sturgeon (Acipenser oxyrinchus).

DDOT. 2014. Modified Phase 1 Environmental Site Assessment (ESA).

DDOT. 2014. M Street Southeast-Southwest Special Events Study Final Report.

DDOT. 2014. Section 106 Assessment of Effects to Historic Properties Report.

DDOT. 2013. Anacostia River Hydraulic Analysis and Bridge Scour Evaluation for the Replacement of Frederick Douglass Memorial Bridge.

DDOT. 2013. DC Circulator Route Map http://www.dccirculator.com/Home/BusRoutesandSchedules.aspx. Accessed online: August 2013.

DDOT. 2013. Draft Air Quality Technical Report.

DDOT. 2013. *South Capitol Street Project Frederick Douglass Memorial Bridge Alternative Alignments Study Report.*

DDOT. 2013. Traffic Safety Report Statistics (2009-2011).

DDOT. 2012. M Street SE/SW Transportation Study Final Report.

DDOT. 2011. Noise Policy.

DDOT. 2011. *South Capitol Street Final Environmental Impact Statement/Section 4(f) Evaluation.*

DDOT. 2011. *South Capitol Street Final Environmental Impact Statement/Section 4(f) Evaluation.*

DDOT. 2010. Traffic Safety Report Statistics (2007-2009).

DDOT. 2008. Anacostia Waterfront Initiative: Transportation Master Plan 2008 Update.

DDOT. 2008. *Phase 2 Environmental Site Assessment for South Capitol Street Protective Buying.*

DDOT. 2007. Anacostia Waterfront Initiative: Transportation Master Plan 2007 Update.

DDOT. 2007. Metrorail Stations Ridership Data for Anacostia, Capitol South, and Navy Yard Stations.

DDOT. 2007. Phase 1(b) Archaeological Survey, South Capitol Street Corridor – Washington, DC.

DDOT. 2007. *Section 106 Assessment of Effects Report, Proposed Improvements to the South Capitol Street Corridor.*

DDOT. 2007. South Capitol Street Draft Environmental Impact Statement (DEIS) and Section 4(f) Evaluation.

DDOT. 2007. South Capitol Street Hydrology/Hydraulics Technical Memorandum.

DDOT. 2007. *South Capitol Street Noise Technical Report.* DDOT. 2014. *South Capitol Street Noise Technical Report.*

DDOT. 2006. Biological Assessment (BA) for the Shortnose Sturgeon.

DDOT. 2006. Phase 1(a) Archaeological Assessment of Proposed Improvements to South Capitol Street Corridor – Washington, DC.

DDOT. 2006. *Preliminary Environmental Screening Assessment Report.*

DDOT. 2005. Phase 1 Site Environmental Assessment (ESA) and Contaminated Materials Management Report.

DDOT. 2003. South Capitol Gateway and Corridor Improvement Study (Gateway Study).

DDOT. 1997. *Noise Policy Guidelines*.

District of Columbia Office of Planning (OP). 2010. Amendments to the 2006 Comprehensive Plan of the National Capital (Comprehensive Plan).

OP. 2006. 2006 Comprehensive Plan of the National Capital.

OP. 2003. Anacostia Waterfront Initiative Framework Plan.

OP. 2000. *Anacostia Waterfront Initiative Memorandum of Understanding*.

District of Columbia Office of Zoning. 2013. DC Zoning Maps. http://dcoz.dc.gov/info/zoningmapsummary.shtm. Accessed online: August 2013.

Donjon Marine Company, Inc. 2014. Display Ship (DS) Barry Removal Options (Donjon Report).

Executive Order (EO) 12898. 1994. Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. *Federal Register* 59(32), Wednesday, February 16, 1994.

EO 13166. 2000. Improving Access to Services for Persons with Limited English Proficiency. *Federal Register* 65(159), Wednesday, August 16, 2000.

EO 13045. 1997. Protection of Children from Environmental Health Risks. *Federal Register* 62(78), Wednesday, April 23, 1997.

Federal Emergency Management Agency (FEMA). 2010. Updated Flood Insurance Rate Map (FIRM).

FEMA. 2002. Flood Insurance Rate Map (FIRM) for the District of Columbia.

Federal Highway Administration (FHWA). 2012. Order 6640.23A, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

FHWA. 2010. Final Rule Amending the Federal Regulations on the Procedures for Abatement of Highway Traffic Noise and Construction Noise (2010 Final Rule).

FHWA. 2010. Highway Traffic Noise: Analysis and Abatement Guidance.

FHWA. 2005. Final Nationwide Programmatic Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property.

FHWA. 1995. *Highway Traffic Noise Analysis and Abatement Policy and Guidance.*

FHWA. 1981. V*isual Impact Assessment for Highway Projects.*

http://www.montgomeryplanning.org/historic/kensingtoncabin/documents/Parkwaysofthe NationalCapitalRegion.pdf. Accessed online: May 23, 2014.NCPC. 2001. Memorials and Museum Master Plan.

L'Enfant, Pierre-Charles. 1791. The L'Enfant Plan of the City of Washington (the L'Enfant Plan).

Malcolm Pirnie Inc. 2006. Preliminary Assessment (PA) for Washington Navy Yard (WNY).

Mikaila Milton. 2013. Personal communication via email correspondence on November 6, 2013.

MWCOG. 2013. 2013 Update to the Financially Constrained Long-Range Transportation Plan (CLRP) for the National Capital Region.

MWCOG. 2013. Transportation Improvement Program (TIP) for Washington Metropolitan Region FY 2013-2018.

MWCOG. 2007. State Implementation Plan – Plan to Improve Air Quality in the Washington, DC-MD-VA Region.

National Capital Planning Commission (NCPC). 1997. Extending the Legacy: Planning America's Capital for the 21st Century.

National Park Service (NPS). 2009. Parkways of the National Capital Region Multiple Property Submission (1913–1965).

National Park Service (NPS). 1997. How to Apply the National Register Criteria for Evaluation.

Naval History and Heritage Command (NHHC). 1950.

U.S. Census Bureau (U.S. Census). 2010. Housing Value/Homeownership Rates.

U.S. Census. 2010. The American FactFinder: Income and Poverty Levels.

U.S. Census. 2010. The American FactFinder: Selected Tracts in Washington, DC for Minority and Low-Income Populations within Project Area. http://www.census.gov/. Accessed online: August 2013.

U.S. Census. 2008-2012. American Community Survey (ACS) 5-Year Estimates.

U.S. Census. 2000. Selected Social Characteristics: Demographics and Income.

U.S. Department of Transportation (USDOT). 2012. Order 5610.2(a), Final DOT Environmental Justice Order.

USDOT. 2012. Order 5610.2(a), Sub-section 8, Actions to Address Disproportionately High and Adverse Effects.

U.S. Environmental Protection Agency (USEPA). 2015. Low Impact Development http://water.epa.gov/polwaste/green. Accessed online: June 2015.

USEPA. 2012. Transportation Conformity Regulations as of April 2012.

USEPA. 1986. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986 (42 U.S.C Chapter 103).

USEPA. 1976. Resource Conservation and Recovery Act (RCRA). (42 U.S.C. Chapter 82).

United States Fish and Wildlife Service (USFWS). 2014. Frequently Asked Questions about Endangered Species, Bald Eagles or Other Wildlife *http://www.fws.gov/chesapeakebay/FAQs.html*. Accessed online: May 20, 2014.

USFWS. 2013. Unpublished data provided by M. Mangold on January 9, 2013.

USFWS online resource: http://www.fws.gov/chesapeakebay/FAQs.html.

Washington Metropolitan Area Transit Authority (WMATA). 2013. Metrobus Timetables. http://www.wmata.com/bus/timetables/. Accessed online: August 2013.

WMATA. 2013. Metrorail Station Ridership Data (May-July 2013) for Anacostia, Capitol South, and Navy Yard Stations.

WMATA. 2012. FY 12 Metrobus Weekday Average Ridership. http://www.wmata.com/pdfs/planning/FY12_Bus. Accessed online: August 2013.

chapter 13.0

index of technical reports

1. *Anacostia River Navigation Evaluation Final Report, February 2014.* This report evaluates the potential for constructing a fixed bridge in the Revised Preferred Alternative, rather than the previously proposed arch bascule moveable span bridge in the FEIS Preferred Alternative. This report determined that a fixed-span bridge reduced the cost of reconstruction and maintenance, and minimizes impacts to current and future vessel traffic and existing maritime operations.

2. *Final SCS Air Quality Tech Report, February 2014.* This report presents the results of the updated air quality impact assessment performed for the Revised Preferred Alternative to be addressed in the Supplemental DEIS. This report presents a description of existing air quality conditions within the Project Area, and the results of the air quality assessments conducted for the Revised Preferred Alternative. The assessment determined impacts to air quality based on the changes to the Project, as described in the Supplemental DEIS. The Project is not expected to measurably affect project level emission burdens, including greenhouse gasses, or to cause a violation of the NAAQs. Construction-related effects of the Project would be limited to short-term increased fugitive dust and mobile-source emissions during construction, for which the Project will follow district regulations regarding dust control and air quality emission reduction controls.

3. *Final Noise Technical Report, February 2014.* This report updates the noise analysis to determine changes between the FEIS Preferred Alternative and the Revised Preferred Alternative. This noise analysis predicted future noise levels (design year 2040) for the Revised Preferred Alternative and compared those levels with existing noise levels, predicted FEIS Preferred Alternative noise levels, and the DDOT noise abatement criteria (NAC). This report presents the results of the noise assessment for the Revised Preferred Alternative, including potential impacts expected to occur for this Project, for construction and traffic operation.

   For the Revised Preferred Alternative, the noise analysis determined that noise barriers were the only preliminarily feasible and reasonable noise abatement measures for this project for three areas containing noise-sensitive receptors with design year noise levels that approached or exceeded the NAC. Three areas were identified where noise impacts occurred, but for which no noise abatement measures would not be cost reasonable.

4. *Modified Phase I ESA Report, January 2014.* This report updates the 2011 Final Environmental Impact Statement (FEIS) and helps identify known or potential sources of contamination that exist within or in close proximity to the Project Area. This report identifies any previously unidentified properties, and lists properties of potential environmental concern. It identifies recognized environmental conditions (RECs) and determines the existence of additional RECs since the completion of the FEIS.

5. *South Capitol Street Natural Resources Technical Report, August 2014.* This report describes the updated natural resource analysis for the Revised Preferred Alternative. This report describes the methodology and results for geology and soils, groundwater and hydrogeology, surface water resources and water quality, wetlands, floodplains, vegetation, wildlife, and endangered species, and the affects of the Revised Preferred Alternative. In general, impacts to the Anacostia River from the Revised Preferred Alternative would be associated with construction of the new fixed bridge and demolition of the existing bridge. The Revised Preferred Alternative would decrease impervious surfaces to a greater extent that the FEIS Preferred Alternative, further reducing the amount of stormwater runoff entering the Anacostia River. This report also included a preliminary hydraulic analysis and bridge scour evaluation for the new fixed bridge, a new wetland delineation, results of specimen/special tree re-evaluations, and updates to the migratory bird reporting.

   Differences between the FEIS Preferred Alternative and the Revised Preferred Alternative are minimal with respect to potential impacts to terrestrial and aquatic habitat and wildlife. As noted for the FEIS Preferred Alternative, most impacts would be the result of widening or extending existing roadways, and these impacts would be mostly to disturbed forested or shrubby habitat or managed lawns. Impacts to aquatic biota, primarily fish, would be expected to be minimal, as the Project proposes to use specific conservation measures during construction of the new bridge. Protective measures will be used during bridge pier construction to minimize any disturbance to natural resources in the Project Area.

6. *Biological Assessment of Impacts to the Atlantic Sturgeon, July 2014*. This report includes information on the status of the Atlantic sturgeon within the Project Area. The assessment addresses potential impacts to Atlantic sturgeon, using a similar methodology as performed for the Shortnose sturgeon. This report determined that direct effects of the Project on Atlantic sturgeon are unlikely since the Atlantic sturgeon's presence in the area is extremely low. Nevertheless, conservation measures will be used in the bridge design and construction phase of the Revised Preferred Alternative to reduce the chance of impacts to the Atlantic sturgeon.

7. *Draft Section 106 Assessment of Effects for Historic Properties, July 2014 and Section 106 Assessment of Effects for Historic Properties, October 2014.* This report reassesses the FEIS documentation of effects of the South Capitol Street alternatives on historic resources based on a Revised Area of Potential Effects (APE). Due to the adverse effect

on the L'Enfant Plan, an overall finding of a Section 106 adverse effect by FHWA is anticipated for the South Capitol Street Corridor Project.

8. *South Capitol Street Traffic and Transportation Technical Report, July 2014.* This report provides supporting documentation for the decisions and conclusions made in the Supplemental DEIS and the South Capitol Street Interchange Modification Report (IMR). The primary purpose of this report is to summarize differences in impacts to transportation resources between the 2011 FEIS Preferred Alternative and the 2014 Supplemental DEIS Preferred Alternative. It also provides more detailed traffic operational results to support the justification for modifying interstate access at the interchange of I-295 and Suitland Parkway and the interchange of I-395, I-695, and South Capitol Street.

   The traffic operation analysis conducted for the Traffic and Transportation Report (TTR) compared opening year (2020) and design year (2040) for the No Build Alternative, the FEIS Preferred Alternative, and the Revised Preferred Alternative. The design refinements to the FEIS Preferred Alternative that resulted in the Revised Preferred Alternative do not substantially degrade traffic operations. In general, the Revised Preferred Alternative either improves traffic operations, when compared to the FEIS Preferred Alternative, or provides similar traffic operational results.

9. *2011-2013 Crash Summary Statistics for Selected Freeway Segments in the District of Columbia, April 2014.* This report summarizes crashes for the three-year period from 2011 to 2013 based on data obtained from MPD's PD-10s for four freeway segments in the southwestern and southeastern quadrants of the District.

District Department of Transportation

appendix A

anacostia river navigation evaluation final report

District Department of Transportation

South Capitol Street Corridor Project
Frederick Douglass Memorial Bridge Replacement

Anacostia River Navigation Evaluation Final Report

February 27, 2014
FAP# 1501 (41)
DC Contract Number: POKA-2013-T-0115

Prepared By:

PARSONS BRINCKERHOFF

District Department of Transportation

Department of Transportation United States of America

ONE CITY

Executive Summary

Anacostia River Navigation Evaluation

As a part of the Anacostia Waterfront Initiative, which pledges to restore and revitalize the Anacostia River and surrounding neighborhoods, the District of Columbia is preparing to replace the Frederick Douglass Memorial Bridge (FDMB) and upgrade the South Capitol Street corridor. The existing bridge is a moveable span bridge. Built in 1949, the existing bridge has been rehabilitated as an interim solution to address the immediate structural deficiencies; however, replacement of the bridge is necessary to address long-term structural needs and safety issues. By transitioning from a moveable span bridge to a fixed bridge, the District would save an additional $100,000 per year on operations and maintenance required for a drawbridge. Additionally, the fixed-span bridge design reduces cost of reconstruction by an estimated $140 million.

Replacement of the 63-year-old bridge supports economic development, improves multi-modal transportation options, optimizes community accessibility, and increases pedestrian and vehicular safety. Additionally, new drainage and storm water management will provide further opportunities for sustainable development. Parsons Brinckerhoff was retained to perform a Navigation Channel Evaluation to support a US Coast Guard Section 9 Bridge Permit Application for the replacement bridge.

The Frederick Douglass Memorial Bridge is located at the southeast quadrant of the District of Columbia and immediately northeast of the confluence of the Potomac and Anacostia Rivers. The Washington US Navy Yard is directly upstream from the existing bridge. The ballpark for the Washington Nationals Major League Baseball team is directly north of the bridge. South of the bridge is the Joint Base Anacostia-Bolling, and east of the bridge is Poplar Point. Constructed in 1949, and dedicated to Frederick Douglass in October 1964, the existing bridge carries South Capitol Street over the Anacostia River.

An initial ("Phase 1") Navigation Evaluation was conducted and the results and conclusions summarized in a report entitled *Anacostia River Navigation Evaluation*, dated September 20, 2013. This report summarized the existing vessel population, clearances of other bridge structures on the Anacostia and

Potomac Rivers, environmental and land use considerations affecting future vessel traffic, projected future vessel populations, impacts of the proposed replacement bridge on future vessel traffic and existing infrastructure, and recommended design build contract provisions for vessel impact protection design.

Under Phase 1 of the Navigation Evaluation Report, the current vessel population was documented from surveys of river users and review of bridge opening logs for the existing bridge. Phase 2 of the study consisted of collection of actual vessel transit volume from July 7, 2013 until October 6, 2013 using an EarthCam video camera. The existing vessel population developed as part of the Phase 1 study has been revised based on the additional monitoring data. Future vessel traffic was projected based on research of environmental and land use considerations and future plans of existing users and property owners along the river. This report summarizes the results of the Phase 1 evaluation, the additional data collected under Phase 2, and the effect of the additional data on the conclusions drawn from Phase 1. Final recommendations for the replacement structure are presented, considering the data gathered in both phases.

The resulting vessel population overwhelmingly consists of recreational vessels, comprising approximately 90 percent of the transits under the bridge documented during the Phase 2 data collection period. The proposed 42-foot vertical clearance and 150-foot horizontal clearance for the replacement bridge is expected to accommodate 99.9 percent of the existing and projected vessel traffic on the waterway. During Phase 1, the following vessels/operations were identified as those which might be adversely affected by the proposed clearance:

- A US Coast Guard buoy tender whose mission may be discontinued
- US Coast Guard patrol vessels with a most recent documented transit in 2005
- Three sailing ships, each with one recorded round-trip transit, most recently in 2012
- One tug with a last recorded transit in 2004
- A Merchant Marine training ship with one documented transit in 2003
- The *Cherry Blossom* vessel operated by Potomac River Company
- A future one-time transit of the Display Ship (DS) *Barry* from the US Navy Yard for disposal
- A future one-time transit of a replacement display ship to the US Navy Yard, and
- The sailing vessel *American Spirit* with one documented transit in 2006.

The *American Spirit* and *Cherry Blossom* were previously estimated to collectively account for 73 annual vessel transits. However, it has been verified that this is not the case. The *Cherry Blossom* has been removed from the existing vessel population and average annual transits associated with the *American Spirit* have been reduced from 48 to 0.1.

Impacts to projected future vessel traffic are expected to be minimal with the construction of a fixed Frederick Douglass Memorial Bridge (FDMB). While recreational and passenger vessel traffic is projected to increase, the vessel sizes expected will be accommodated by the proposed 42-foot vertical clearance. Based on the new data gathered in the Phase 2 evaluation, the number of average annual bridge transits potentially impacted by a fixed bridge with a 42-foot vertical clearance has been reduced

from 77, reported under the Phase 1 evaluation, to 4.1. Three of these transits are attributable to US Coast Guard patrol craft and the buoy tender *James Rankin*, none of which has been recorded transiting the bridge since 2005. The remaining potentially impacted vessels are included in the vessel population by virtue of their appearance in the bridge opening logs for one round-trip transit in the 12-year period covered by the logs. Plans for future transits are unknown.

In addition to the above, installation of a fixed bridge may impact infrequent tall-ship visits to the US Navy Yard, replacement of the *DS Barry* at the US Navy Yard, and Earth Conservation Corps' planned installation of a replica of the schooner *Pearl*. If the *DS Barry* is removed after FDMB construction, its superstructure will have to be removed while at dock at the US Navy Yard to allow transit under the bridge. Installation of a similar size display vessel at the US Navy Yard will need to be coordinated and accomplished with the US Navy prior to the construction of the FDMB.

The intended use of the replica *Pearl* is not clear. If it is intended as a display ship, conceivably, it could be transported to the site with its masts removed and reinstalled in-situ.

The location of the proposed replacement bridge was evaluated for effects on existing maritime infrastructure. Construction of the new bridge will result in demolition of a pier structure on the west bank of the Anacostia south of the bridge, but this structure is not currently in use. The position of the new bridge may result in some expense to revise the existing pier used by the bunkering company, Vane Line Bunkering, Inc., which delivers fuel for Andrews Air Force Base; and those costs would become a South Capitol Street project cost. These infrastructure impacts will occur for any bridge on the proposed alignment, whether fixed or movable.

As the existing bridge has a charted horizontal clearance of 149 feet, it is recommended that the existing clearance be maintained, and the current design accommodates that easily. This horizontal clearance would have no impact on projected vessel traffic.

The additional data obtained in Phase 2 of the evaluation has resulted in a reduction in the number of vessel transits potentially impacted by a fixed bridge. Impacts to projected future vessel traffic and existing maritime infrastructure are minimal. Therefore, a fixed bridge with 42-foot vertical clearance remains the recommended alternative.

Contract provisions for the American Association of State Highway and Transportation Officials Load and Resistance Factor Design (AASHTO LRFD) of the ship impact protection system were developed for inclusion in the Design-Build contract and are included in Appendix B. The bridge's operational classification has been assumed to be "Critical." The model vessel for structural design of the bridge piers and protection system will be governed by the AASHTO minimum design load of drifting empty hopper barge. This is due to the large number of recreational craft, and the lack of commercial shipping in the vessel population.

Table of Contents

Executive Summary ES-1
Introduction 1
Section 1.0: Existing Conditions 3
1.1. Existing Bridge Operations 3
1.2. Existing Vessel Population 3
1.3. Existing Anacostia River Clearances 7
1.4. Potomac River Downstream Clearances 7
1.5. Potomac River Upstream Clearances 8
Section 2.0: Environmental and Land Use Considerations 9
2.1. Existing Environment and Land Use 9
2.2. Future Development and Vessel Population 11
Section 3.0: Impacts on Vessels 14
3.1. Impacts on Future Vessel Traffic 14
3.2. Impacts on Existing Maritime Infrastructure 17
3.3. Design-Build Contract Provisions for Vessel Impact Protection 18
Conclusion and Recommendations 19
Appendix A: FDMB Vessel Transits from 7/6/2013 to 10/6/2013 ..... A-1
Appendix B: Proposed Design Build Contract Provisions for Vessel Impact Protection B-1
Appendix C-1: Daily Draw Bridge Openings 2008 - 2013 (Tabulated) C-1
Appendix C-2: Daily Draw Bridge Openings 2002 – 2012 (Handwritten Logs) C-5
Appendix D: Minutes from DDOT Meeting with US Coast Guard (12.17.2013) D-1
Appendix E: Preliminary Public Notice 5-1317 ..... E-1

List of Figures

Figure 2.1: Land Use along the Anacostia River 10
Figure 2.2: Potential Development Projects along the Anacostia River 12
Figure 3.1: Vessel Transits for a Fixed or Movable Bridge in the Closed Position as a Function of Vertical Clearance 15

List of Tables

Table 1.1: Summary of FDMB Vessel Transits (7/6/2013 to 10/6/2013) 5
Table 1.2 Existing Vessel Population 6
Table 1 3: Existing Upriver Clearances 7
Table 3.1: Vessels Impacted by the Proposed Clearance 16
Table A.1: FDMB Vessel Transits - (7/6/2013 to 7/31/2013) A-2
Table A.2: FDMB Vessel Transits - (8/1/2013 to 8/31/2013) A-5
Table A.3: FDMB Vessel Transits - (9/1/2013 to 9/30/2013) A-8
Table A.4: FDMB Vessel Transits - (10/1/2013 to 10/6/2013) A-11
Table B.1: Small Vessel Characteristics B-2
Table C.1: Daily South Capitol Street Bridge Draw Openings - 2008 ..... C-2
Table C.2: Daily South Capitol Street Bridge Draw Openings - 2009 ..... C-2
Table C.3: Daily South Capitol Street Bridge Draw Openings - 2010 ..... C-2
Table C.4: Daily South Capitol Street Bridge Draw Openings - 2011 ..... C-3
Table C.5: Daily South Capitol Street Bridge Draw Openings - 2012 ..... C-3
Table C.6: Daily South Capitol Street Bridge Draw Openings - 2013 ..... C-4

Introduction

As a part of the Anacostia Waterfront Initiative, which pledges to restore and revitalize the Anacostia River and surrounding neighborhoods, the District of Columbia is preparing to replace the Frederick Douglass Memorial Bridge (FDMB) and upgrade the South Capitol Street corridor. Built in 1949, the existing bridge has been rehabilitated as an interim solution to address the immediate structural deficiencies; however, replacement of the bridge is necessary to address long-term structural needs and safety issues.

The Frederick Douglass Memorial Bridge is located at the southeast quadrant of the District of Columbia and immediately northeast of the confluence of the Potomac and Anacostia Rivers. The Washington US Navy Yard is directly upstream from the existing bridge. The ballpark for the Washington Nationals Major League Baseball team is directly north of the bridge. South of the bridge is the Joint Base Anacostia-Bolling, and east of the bridge is Poplar Point. Constructed in 1949, and dedicated to Frederick Douglass in October 1964, the existing bridge carries South Capitol Street over the Anacostia River.

Replacement of the 63-year-old bridge supports economic development, improves multi-modal transportation options, optimizes community accessibility, and increases pedestrian and vehicular safety. Additionally, new drainage and storm water management will provide further opportunities for sustainable development.

Parsons Brinckerhoff was retained to perform a Navigation Channel Evaluation to support a US Coast Guard Section 9 Bridge Permit Application for the replacement bridge. The existing bridge is a moveable span bridge. A fixed-span bridge design reduces cost of reconstruction by an estimated $140 million. Transitioning from a moveable span bridge to a fixed bridge would save the District an additional $100,000 per year on operations and maintenance typically required for a drawbridge. The Navigation Channel Evaluation assesses the impact of fixed and movable bridges on river users.

An initial ("Phase 1") Navigation Evaluation was conducted; the results and conclusions are summarized in a report entitled *Anacostia River Navigation Evaluation* dated September 20, 2013. This report summarized the existing vessel population, clearances of other bridge structures on the Anacostia and Potomac Rivers, environmental and land use considerations affecting future vessel traffic, projected future vessel populations, impacts of the proposed replacement bridge of future vessel traffic and existing infrastructure, and recommended design build contract provisions for vessel impact protection design.

Under Phase 1 of the Navigation Evaluation Report, the current vessel population was documented from surveys of river users and review of bridge opening logs for the existing bridge. Phase 2 of the study consisted of collection of actual vessel transit volume from July 7, 2013 until October 6, 2013 using an EarthCam video camera. The existing vessel population developed as part of the Phase 1 study has been revised based on the additional monitoring data. Future vessel traffic was projected based on research of environmental and land use considerations and future plans of existing users and property owners along the river.

This report summarizes the results of the Phase 1 evaluation, the additional data collected under Phase 2, and the effect of the additional data on the conclusions drawn from Phase 1. Final recommendations for the replacement structure are presented, considering the data gathered in both phases.

Section 1.0: Existing Conditions

1.1. Existing Bridge Operations

Tabulated and handwritten records of daily Frederick Douglass Memorial Bridge opening logs covering the period from September 2008 until November 2013 and from September 2002 until January 2012 are available in Appendices C-1 and C-2, respectively. The bridge opening logs, which were obtained from DDOT, are categorized by year.

A total of 21 bridge openings for passage of vessels (excluding openings for test purposes) are documented during the 11-year period of the available logs. All but four of these openings occurred prior to 2007.

1.2. Existing Vessel Population

The existing vessel population was generated in two phases. Under Phase 1 of the evaluation, the existing vessel population was derived from a combination of bridge opening logs provided by DDOT, and a survey of potential waterway users. The survey on annual bridge transits and vessel dimensions was conducted by Parsons Brinckerhoff in April 2013, as a part of the initial phase of this study. Fifty-six participants including various local marinas, recreational teams, clubs, and associations, yacht clubs, and independent operators were selected to contribute. To supplement survey responses, an in-person meeting was arranged for significant parties, including the US Navy and US Coast Guard, to gather additional information.

Data from survey forms and bridge opening logs were assembled into a single database. Additional vessel characteristics required for the development of vessel impact protection requirements were calculated or estimated from the available data and similar vessels were grouped by vessel type and size. Each vessel group or class typically consists of multiple vessels with multiple owners and points of origin/destination.

Phase 2 of the evaluation consisted of the collection of video footage, which was used to monitor and document vessel transit under the FDMB. The transit footage was collected using an EarthCam camera system and the Control Center 7 comprehensive webcam management service. Archived, time-lapsed video recordings were captured from a live stream of the vessels travelling along the Anacostia River and under the FDMB for approximately 3 months from July 7, 2013 until October 6, 2013.

The live, 24-hour video recordings were compressed into time-lapsed clips ranging from approximately 2½ to 3½ hours per day. Parsons Brinckerhoff reviewed footage and collected the volume of transits which occurred between the hours of 5:00 AM and 9:00 PM, a time frame which provided the greatest visibility of vessel traffic.

The camera's location was not close enough to record specifics for certain vessel characteristics, including vessel name and registration/documentation numbers, vessel dimensions, and docking location. Each vessel was classified by its visual appearance. The following classification categories were selected based on the types of vessels which appeared in the video footage: rowing shell, tug, barge, power boat, kayak, water taxi, police boat, fire boat, canoe, sailboat, and paddle boat. The majority of the boat traffic consisted of small to medium-sized recreational vessels, such as rowing shells and power boats. The *Baseball Boat*, a water taxi managed by the Potomac Riverboat Company, and the American River Water Taxi were some of the larger vessels with consistent transit under the bridge. No openings of the FDMB were observed during review of the 3 months of archived video footage.

Approximately 5,238 vessels were observed transiting the FDMB from July 7, 2013 until October 6, 2013. Table 1.1 shows vessel traffic arranged by its time of transit. A more comprehensive record of the vessels transits under the FDMB collected from 7/7/2013 until 10/6/2013 is available in Appendix A.

The video monitoring data was extrapolated to obtain average annual vessel transits for each category. This vessel population was then compared with the original database formulated from bridge opening logs and user surveys during Phase 1. Several observations resulted from this comparison:

- Recreational power boats, which made up over 90 percent of the vessel population in the original analysis, made about one quarter of the transits that would be expected during this time period based on data from the surveys.
- The large number of human-powered craft (e.g., rowboats and kayaks) had not been captured in the original survey.

Table 1.1: Summary of FDMB Vessel Transits (7/7/2013 to 10/6/2013)

		Row	Police	Motor Yacht	Tug	Barge	Power	Kayak	Canoe	Water Taxi	Sailboat	Paddle	Fire	Total
July (7/7/2013-7/31/2013)	AM	253	20	15	16	8	235	19	1	2	1	0	0	570
	PM	167	30	122	13	6	392	37	2	48	16	0	0	833
July Total								1403						
August (8/1/2013-8/31/2013)	AM	245	17	21	53	1	242	31	0	7	0	0	0	617
	PM	166	28	190	59	1	619	235	1	57	4	0	0	1360
August Total								1977						
September (9/1/2013-9/30/2013)	AM	108	14	24	19	12	173	79	0	3	8	0	0	440
	PM	229	24	65	9	8	401	123	0	54	17	2	1	933
September Total								1373						
October (10/1/2013-10/6/2013)	AM	49	2	3	7	4	58	32	0	0	1	0	0	156
	PM	74	2	12	9	2	123	101	0	2	4	0	0	329
October Total								485						
Overall	AM	655	53	63	95	25	708	161	1	12	10	0	0	1783
	PM	636	84	389	90	17	1535	496	3	161	41	2	1	3455
Overall Total								5238						

- There is much more tug and barge traffic than what was originally assumed though these vessels generally do not require bridge openings. All tug traffic included in the original analysis was obtained from bridge opening logs (i.e.: a bridge opening was required). The video monitoring revealed that a substantial number of tug and barge transits occurs without bridge openings. All tug and barge transits during the time of the video monitoring were conducted without a bridge opening.
- There is considerably less police and fire boat traffic than was estimated from the surveys.
- There is more recreational sail traffic than was included in the original analysis, but it is composed of smaller vessels that do not require a bridge opening.

The original vessel population was revised incorporating the new monitoring data. New vessel groups were added for human-powered craft and barges. Existing vessel groups for tugs and recreational sailing vessels were split to separate vessels requiring a bridge opening from the rest of the vessels in the group. For vessel types observed during the monitoring period, the number of transits was adjusted (up or down) using the values extrapolated from the monitoring data. In addition, transits originally mistakenly attributed to the sailing vessel *American Spirit* and passenger vessel *Cherry Blossom* in the Phase 1 evaluation were eliminated (see section 3.1 for further discussion).

Table 1.2 shows the resulting vessel population by vessel group. The "Average Annual Trips" column represents the number of recorded transits divided by the time period of the source data set (one year for the survey, 0.252 years (3 months) for the video monitoring, and 11 years for the bridge logs). The "Max Air Gap" column indicates the largest required air gap for vessels within the vessel group. Generally there are vessels within each group requiring smaller clearances than the maximum vessel for the group, Therefore, not all transits for a vessel group with a Max Air Gap greater than the existing closed bridge clearance necessarily required an opening.

Table 1.2 Existing Vessel Population

Group No.	Vessel Type	Max Air Gap (ft)	Average Annual Trips
1	US Coast Guard Buoy Tender	70	2
2	US Coast Guard Patrol Craft	60	1
3.a	Tug Boat	>40	0.8
3.b	Tug Boat	<40	734
4	Naval Vessel	140	0.2
5	Fire/Police Boats	26	548
6	Small Recreational (Power Boats)	22	10692
7	Passenger Vessel (Non-Sail)	18	694

8.a	Recreational Sail	>40	0.2
8.b	Recreational Sail	28	201
9	Tall Ships/Large Sail	107	0.4
10	Barge	<40	167
11	Human-Powered Craft	<5	7745

1.3. Existing Anacostia River Clearances

Under the Phase 1 investigation, clearances for existing bridge structures were obtained from National Oceanographic and Atmospheric Administration (NOAA) navigation chart 12285, updated to March 1, 2013. No field verification was performed. Published river mile-points were available for the FDMB (mile-point 1.2) and the CSX Railroad Bridge (mile-point 3.4). Mile-points for the remaining structures were obtained by scaling the distance to the structure from these known mile-points. Bridge clearances for the Anacostia River to the head of navigation are presented in Table 1.3.

Table 1 3: Existing Anacostia River Clearances

Name of Bridge	Bridge Type	Mile Point	Horizontal Clearance (ft)	Vertical Clearance (ft)
Frederick Douglass Memorial Bridge	Swing	1.2	149	40
11th St Bridge	Fixed	2.1	200	28
John Phillip Sousa Bridge	Fixed	2.8	114	35
CSX Railroad Bridge	Lift	3.4	33	5 (down) 29 (up)
Whitney Young Memorial Bridge	Fixed	4.1	90	23
Benning Bridge	Fixed	4.6	40	16
Metro Bridge	Fixed	4.6	40	16
Railroad Bridge	Fixed	6.6	69	12
Route 50 Bridge	Fixed	6.7	76	16

Existing vertical clearances on the Anacostia from the beginning of the study area to the Benning Bridge exceed those on the adjacent reach of the Potomac.

1.4. Potomac River Downstream Clearances

Downstream of the confluence of the Potomac and Anacostia Rivers, there are two crossings of the Potomac River. The following clearance information for these bridges is included for informational purposes:

- Woodrow Wilson Memorial Bridge (Bascule) Horizontal Clearance 175 feet, Closed Vertical Clearance 76 feet, Open Unlimited.
- Harry W. Nice Bridge (Fixed) Horizontal Clearance 700 feet, Vertical Clearance 105 feet (135 feet for middle 480-foot-width).

1.5. Potomac River Upstream Clearances

Crossing the Potomac River, upstream of the confluence of the Potomac and Anacostia Rivers are a number of bridges that are regularly transited by local river users. The following clearance information for these bridges is presented for informational purposes:

- Key Bridge (Fixed) Horizontal Clearance 207 feet, Vertical Clearance 61 feet (for 80-foot-width).
- Theodore Roosevelt Bridge (Fixed) Horizontal Clearance 198 feet, Vertical Clearance 24 feet (29 feet at center of main span).
- Arlington Memorial Bridge (Fixed) Horizontal Clearance 142 feet, Vertical Clearance 30 feet (for 80-foot-width).
- George Mason, 14th Street Bridges, WMATA and Long Bridge (five bridges) (Fixed) Horizontal Clearance 104 feet, Vertical Clearance 18 feet.

Section 2.0: Environmental and Land Use Considerations

2.1. Existing Environment and Land Use

Existing environment and land use were investigated under the Phase 1 evaluation. The majority of the existing land use along the Anacostia River was found to be park land (Figure 2.1). On the east side of the river, park land is present throughout the entire river bank starting just north of the existing FDMB. East and south of the FDMB is occupied by other parks, recreation, and open space use, and public and federal uses (e.g., Bolling Air Force Base). On the west side of the river, the land along the river north of the 11th Street Bridge is occupied by park land. Between the 11th Street Bridge and FDMB, the land is occupied by the Capitol Riverfront neighborhood, a 500-acre, mixed-use neighborhood that includes the US Navy Yard, the US Department of Transportation Headquarters, Nationals Park, Capitol Quarter Townhouse community, Diamond Teague Park, Half Street entertainment district, and The Yards.

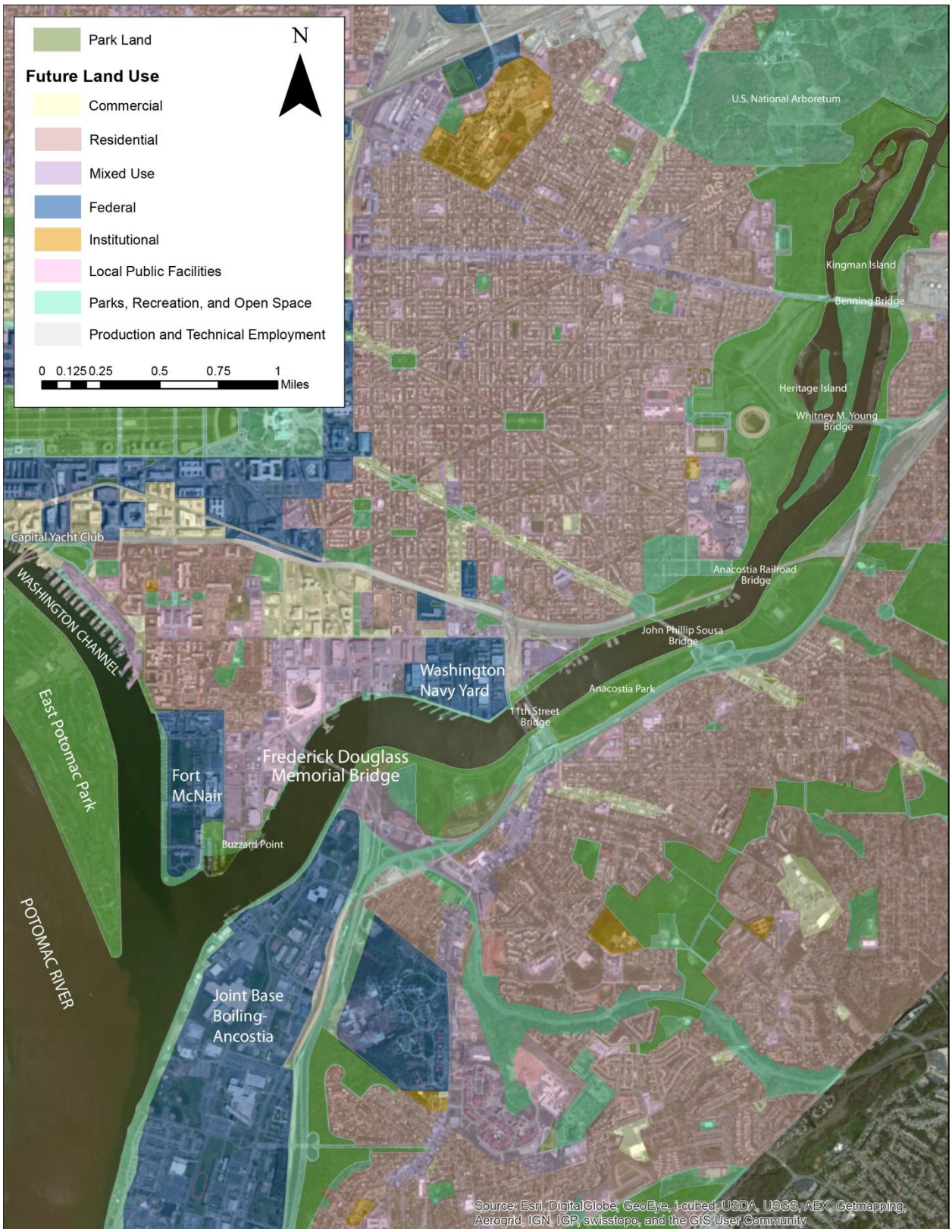


Figure 2.1: Land Use along the Anacostia River

2.2. Future Development and Vessel Population

The potential for future development and its effects on river traffic were examined in the Phase 1 evaluation. It was found that a number of planned developments will likely, directly or indirectly, increase the number of recreational and passenger (i.e.; water taxi, and tour boat) craft using the Anacostia. These additional craft are expected to follow the same distribution of vessel sizes as the vessel population currently using the river and are not expected to be impacted by a fixed bridge meeting or exceeding the clearance of the current bridge.

Increase in the number of commercial/industrial vessels was deemed unlikely, especially upriver of FDMB, because:

- The existing land use along the Anacostia River is mostly designated as park land and for recreational use (with no anticipated changes to the land use that could attract commercial vessels other than passenger vessels along the Anacostia River).
- The Anacostia River navigational channel width and depth are substantially reduced north of the 11th Street Bridge, which prevents navigation of larger commercial vessels north of the 11th Street Bridge.

Development projects identified under the Phase 1 evaluation that may contribute to an increase in recreational or passenger craft include:

- The Yards Park, which includes a public marina,
- Boathouse Row Redevelopment, including an expanded boathouse, marina, dock and water recreation uses,
- Poplar Point, including a waterfront park,
- Capital Yacht Club has indicated plans for expansion, and
- American River Taxi and the Potomac River Boat Company have indicated plans for larger fleets.

Other commercial and residential projects may also increase recreational vessel users, due to their proximity to the Anacostia River, including:

- Hill East Waterfront Redevelopment and
- Enhancement of Marvin Gaye and Kingman and Heritage Islands Parks.

Figure 2.2 shows projected future land use along the Anacostia River. More detail regarding future development projects and their projected effects on future vessel traffic along and/or near the Anacostia River may be found in the Sections 2.2, 2.3 and Appendix D of the *Phase 1 Anacostia River Navigation Evaluation* Report.

Figure 2.2: Potential Development Projects along the Anacostia River

Vessels resulting from the above developments are projected to have a similar size distribution to comparable vessels currently using the waterway and are not expected to be impacted by a fixed bridge meeting or exceeding the clearance of the current bridge. Therefore, the future vessel population is projected to be similar to the existing population (described in Section 1.2), but potentially with a greater number of small recreational and passenger craft.

Two future developments potentially impacted by construction of a fixed bridge have been identified in the Phase 1 evaluation:

- The Earth Conservation Corps has indicated plans, in partnership with the *Pearl* Coalition, to bring a replica of the schooner Pearl to Diamond Teague Park. It is still unclear whether this is intended to be a display ship or an active sailing vessel, and the proposed timeline has not been established. If it is a display ship, the masts could be installed after the vessel is upriver of the FDMB. If it is an active sailing ship, it would need to be moored downriver of the FDMB.
- The US Navy has indicated that the DS Barry will eventually be relocated or possibly scrapped, then possibly replaced with another display ship. When this happens, each vessel (DS Barry and its replacement) would need to transit the bridge once.

Section 3.0: Impacts on Vessels

3.1. Impacts on Future Vessel Traffic

The existing vertical clearance of the FDMB is 40 feet in the closed position and unlimited in the open position. The proposed replacement of the FDMB will primarily affect users transiting to destinations located between FDMB and the 11th Street Bridge (with a fixed vertical clearance of 28 feet). Figure 3.1 shows that a vertical clearance greater than 30 feet for a fixed bridge or movable bridge in the closed position accommodates 96.7 percent of the projected vessel traffic. The current fixed design for the new FDMB provides a clearance of 42 feet, comparable to the existing bridge in the closed position, and will accommodate 99.9 percent of the projected vessel population.

As the existing bridge has a charted horizontal clearance of 149 feet, it is recommended that the existing clearance be maintained, and the current design accommodates that easily. This horizontal clearance would have no impact on projected vessel traffic.

Based on a meeting with US Navy representatives on May 23, 2013, with exception of the disposal/replacement of the *DS Barry*, the US Navy has no current requirement for Naval Vessels to transit the Potomac River north of Robinson Terminal in Alexandria, VA and the Naval Research Lab in Washington, DC. Additionally, operational naval vessels have no current requirement to enter the Anacostia River. The maximum size vessel assigned to US Fleet Forces that is authorized to transit the Anacostia River is the Patrol Ship, which would fit under a 42-foot bridge height. The US Navy Yard must have boat access, at least 67 feet horizontally and 35 feet vertically, to accommodate critical military traffic. The US Navy representatives also noted that tall-ships occasionally visit the US Navy Yard. A fixed bridge with 42-foot vertical clearance would limit or eliminate the potential for these visits.

As previously noted in the Phase 1 study results, the proposed clearance would be inadequate for the following vessels: *James Rankin,* US Coast Guard Patrol Craft, *Triton,*

Captain Nelson, Kings Pointer, Minnie V , and *Pride of Baltimore II,* and for the eventual removal and replacement of the *DS Barry.*

The buoy tender *James Rankin* and US Coast Guard patrol craft, which were not included in US Coast Guard's survey response, are reported to account for one annual round trip, and one annual transit for maintenance of aids to navigation (ATONS), respectively. No transits are recorded in the bridge opening logs for the *James Rankin* since 2003. Discontinuance of the ATONS serviced by this vessel is under consideration by the US Coast Guard. No additional transits by US Coast Guard patrol craft were recorded since 2005. Neither the *James Rankin*, nor US Coast Guard patrol craft, will be able to pass under a bridge with 42-foot clearance at any stage of the tide.

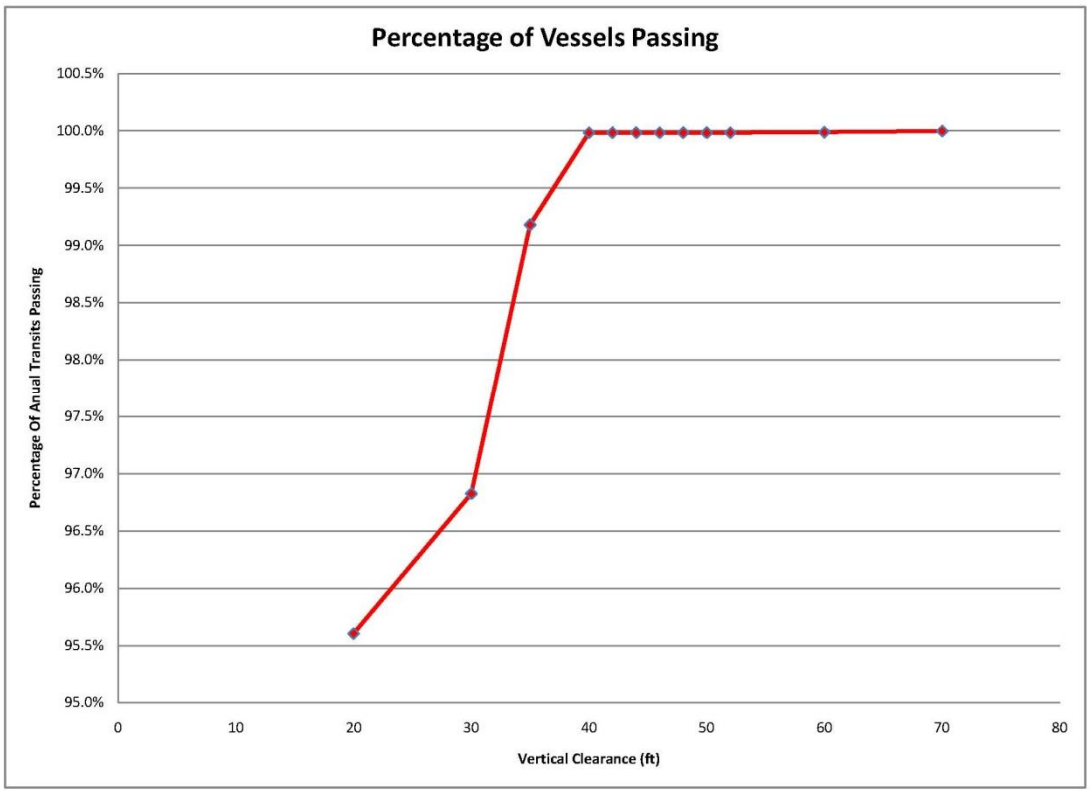


Figure 3.1: Vessel Transits for a Fixed or Movable Bridge in the Closed Position as a Function of Vertical Clearance

Exact required air gap values for *Kings Pointer* and the privately-owned sailing vessel *Triton* could not be determined, but are assumed to exceed 40 feet since a bridge opening was required for transit. Passage of the *Triton* was recorded in the bridge logs in 2001. No passages have been recorded since, though it is noted that four transits by unidentified sailing vessels are recorded in the bridge logs before 2005. The vessel *Kings Pointer*, now operated as a training ship by the US Merchant Marine Academy, was

recorded transiting the bridge in 2003. No passage by this vessel has been recorded since, though it is noted that five transits by unidentified "US Navy Ships" are recorded in the logs prior to 2005. The *Cherry Blossom*, estimated to account for 25 annual transits in the Phase 1 evaluation, is no longer included in the existing vessel population, as it is has been verified by the Potomac Riverboat Company that this vessel does not transit the bridge. The *Cherry Blossom* was not observed transiting the bridge during the review of the EarthCam video footage, and no transits by this vessel are documented in the bridge opening logs.

Similarly, transits for the *American Spirit*, estimated to account for 48 average annual transits in the Phase 1 study report based on interpretation of the survey results, have been significantly reduced. The vessel operator, DC Sail, reports that the vessel does not regularly transit the bridge. One transit by this vessel is recorded in the bridge logs in 2006.

Based on the vessel population described in Section 1.1, vessels potentially impacted by construction of a fixed FDMB replacement bridge with a clearance of 42 feet are presented in Table 3.1. A total of 4.1 average annual vessels transits are potentially impacted by construction of a fixed span.

Table 3.1: Vessels Impacted by the Proposed Clearance

Name of Vessel	Vessel Type	Owner	Air Gap (ft)	Last Recorded Transit	Average Annual Transit
James Rankin	Buoy Tender	US Coast Guard	70	2003	2
YP-684; YP-676; YP-682; YP-688; YP-679	Patrol Craft	US Coast Guard	60	2005	1
Triton	Recreational Sail	Shawn P. Callaghan	> 40	2001	0.2
Capt. Nelson	Tug	Smith Brothers, Inc.	> 40	2004	0.2
Kings Pointer	Training Vessel		140	2003	0.2
American Spirit	Sail Boat/Tall Ship	DC Sail (NMHF)	78	2006	0.1

Minnie V	Passenger Vessel (Sail)	Living Classrooms Foundation, Inc.	65	2012	0.2
Pride of Baltimore II	Passenger Vessel (Sail)	Pride of Baltimore, Inc.	107	2012	0.2
				Total Average Transits	4.1

Impacts to projected future vessel traffic are expected to be minimal. While recreational and passenger vessel traffic is projected to increase in volume, the vessel sizes expected will be accommodated by the proposed 42-foot vertical clearance.

The only exceptions are expected to be tall-ship visits and replacement of the *DS Barry* at the US Navy Yard, and Earth Conservation Corps' planned installation of a replica of the schooner *Pearl*. If the DS *Barry* is removed after FDMB construction, its superstructure will have to be removed while at dock at the US Navy Yard to allow transit under the bridge. Installation of a similar size display vessel at the US Navy Yard will need to be coordinated and accomplished with the US Navy prior to the construction of the FDMB.

As discussed in Section 2.2, the intended use of the replica *Pearl* is not clear. If it is intended as a display ship, it could conceivably be transported to the site with its masts removed and reinstalled in-situ.

3.2. Impacts on Existing Maritime Infrastructure

The replacement bridge is proposed to be located south of the existing FDMB; therefore, operation of existing maritime infrastructure north of the existing bridge will not be adversely affected.

A fuel transfer pier exists on the east bank of the Anacostia River approximately 310 feet downstream of the existing bridge's south fascia. This pier is used to transfer fuel from barges for storage and use at Andrews Air force Base via a fuel pipeline along Suitland Parkway. The proposed configuration of the new bridge will locate the face of a bridge pier approximately 165 feet upstream of the fuel pier. Given that the tug and barge typically extend 130 to 165 feet upstream of the fuel pier in the current mooring configuration, it is likely that changes to the barge approach path and mooring arrangement will be required for safe operation, particularly on approach to the fueling pier.

Two additional piers and associated mooring and breasting structures, located on the west bank of the Anacostia to the south of the existing bridge, may be impacted. These

are remnants of an earlier fuel storage facility previously located south of the bridge and removed circa 2007 and are no longer in use. Therefore, demolition of the northern pier structure and associated mooring structures are not expected to have any significant impact.

These impacts will occur for any bridge on this alignment, whether fixed or movable. Additional detail regarding the potentially impacted existing maritime infrastructure south of the Frederick Douglass Memorial Bridge is available in Section 3.2 of the *Phase 1 Anacostia River Navigation Evaluation Report.*

3.3. Design-Build Contract Provisions for Vessel Impact Protection

During the Phase 1 evaluation, transits by towing vessels (tugs) documented in the bridge opening logs were omitted from the vessel population because tug transits occurred prior to 2006 with an annual frequency of less than one and were thought to have been related to past construction activity.. The video monitoring conducted in Phase 2 revealed that there was a substantial number of tug and/or barge transits during the monitoring period. Review of the video suggests that all of the barge transits are attributable to a single barge believed to be associated with the adjacent construction at the 11th Street Bridge and considered a temporary occurrence. Since tugs transiting without a vessel in tow will have displacements too small to be of concern for vessel impact purposes and documented barges are associated with construction that will be complete before construction of the new bridge, towing vessels and barges remain excluded from the vessel population for ship impact design purposes.

Conclusion and Recommendations

The proposed vertical clearance of 42 feet and horizontal clearance of 150 feet for the fixed bridge option will accommodate approximately 99.9 percent of the current and projected future vessel traffic.

The number of average annual vessel transits potentially impacted by a fixed span has been reduced from 77 reported in the Phase 1 study report, to 4.1. Three of these transits are attributable to US Coast Guard patrol craft and the buoy tender *James Rankin*, none of which have been recorded transiting the bridge since 2005. The remaining potentially impacted vessels are included in the vessel population by virtue of their appearance in the bridge opening logs for one round-trip transit in the 12-year period covered by the logs. Plans for future transits are unknown.

Therefore, selection of the fixed bridge alternative with a vertical clearance of 42 feet is still recommended.

Appendix A: FDMB Vessel Transits from 7/6/2013 to 10/6/2013

Table A.1: FDMB Vessel Transits - (7/6/2013 to 7/31/2013)

			Row	Police	Motor Yacht	Tug	Barge	Power	Kayak	Canoe	Water Taxi	Sail boat
Sun	7-Jul	AM	13	2	-	-	-	5	-	-	-	-
		PM	1	-	9	-	-	35	-	-	6	2
Mon	8-Jul	AM	14	-	1	-	-	1	-	-	-	-
		PM	9	-	5	-	-	4	-	-	-	-
Tues	9-Jul	AM	17	-	-	-	-	9	8	-	-	-
		PM	6	-	-	-	-	13	-	-	2	-
Wed	10-Jul	AM	-	-	-	-	-	-	-	-	-	-
		PM	-	-	-	-	-	-	-	-	-	-
Thu	11-Jul	AM	12	-	-	1	-	12	-	-	-	-
		PM	13	-	6	2	-	16	-	-	-	2
Fri	12-Jul	AM	5	1	-	-	-	12	-	-	-	-
		PM	8	-	5	1	-	12	1	-	3	-
Sat	13-Jul	AM	-	-	-	-	-	2	-	-	-	-
		PM	-	-	11	1	-	33	-	1	5	-
Sun	14-Jul	AM	12	1	3	-	-	10	1	1	-	-
		PM	-	1	13	-	-	30	-	-	2	2
Mon	15-Jul	AM	10	1	-	6	-	15	-	-	-	-
		PM	4	3	1	-	-	16	-	-	-	-
Tues	16-Jul	AM	17	-	-	-	-	25	-	-	-	-
		PM	24	-	-	3	-	23	2	1	-	-
Wed	17-Jul	AM	20	-	-	2	-	25	-	-	-	-
		PM	8	-	2	2	-	20	1	-	6	-

Thu	18-Jul	AM	20	-	-	2	-	20	1	-	-	-
		PM	8	-	2	-	-	10	-	-	-	-
Fri	19-Jul	AM	6	2	1	-	-	11	-	-	-	-
		PM	-	-	4	1	-	29	-	-	3	-
Sat	20-Jul	AM	-	-	-	1	-	7	-	-	-	-
		PM	-	4	9	-	-	24	4	-	3	2
Sun	21-Jul	AM	17	4	-	-	-	4	-	-	-	-
		PM	1	3	8	2	-	27	1	-	-	-
Mon	22-Jul	AM	7	1	3	4	-	9	-	-	-	-
		PM	5	4	-	-	-	12	-	-	3	-
Tues	23-Jul	AM	14	-	0	-	3	9	-	-	-	-
		PM	11	-	2	1	1	17	-	-	2	-
Wed	24-Jul	AM	18	-	1	-	4	14	-	-	-	-
		PM	16	2	3	-	0	9	-	-	-	2
Thu	25-Jul	AM	10	2	0	-	0	5	-	-	2	-
		PM	20	-	5	-	2	7	-	-	2	1
Fri	26-Jul	AM	9	-	3	-	0	3	-	-	-	-
		PM	8	3	14	-	0	17	4	-	5	-
Sat	27-Jul	AM	2	2	1	-	0	7	8	-	-	-
		PM	0	1	10	-	0	7	14	-	3	2
Sun	28-Jul	AM	11	-	0	-	0	8	1	-	-	-
		PM	0	6	5	-	0	9	5	-	3	-
Mon	29-Jul	AM	4	-	1	-	0	3	-	-	-	-
		P	6	1	3	-	0	6	3	-	-	-

		M										
Tues	30-Jul	AM	9	4	0	-	0	6	-	-	-	-
		PM	14	-	2	-	0	11	2	-	-	1
Wed	31-Jul	AM	6	-	1	-	1	4	-	-	-	1
		PM	5	2	3	-	3	5	-	-	-	2
Total			420	50	137	29	14	627	56	3	50	17

Table A.2: FDMB Vessel Transits - (8/1/2013 to 8/31/2013)

			Row	Police	Motor Yacht	Tug	Barge	Power	Kayak	Canoe	Water Taxi	Sail boat
Thu	1-Aug	AM	14	-	-	2	-	7	-	-	-	-
		PM	-	-	6	2	-	2	-	-	-	-
Fri	2-Aug	AM	10	-	6	2	-	10	-	-	3	-
		PM	1	-	12	5	-	33	-	-	-	-
Sat	3-Aug	AM	5	-	-	-	-	5	1	-	-	-
		PM	2	-	10	2	-	14	10	-	2	-
Sun	4-Aug	AM	18	-	-	-	-	18	6	-	-	-
		PM	1	2	9	4	-	73	30	-	2	-
Mon	5-Aug	AM	15	-	-	5	1	14	-	-	-	-
		PM	11	3	3	3	-	30	1	-	3	-
Tues	6-Aug	AM	5	-	1	2	-	6	-	-	-	-
		PM	12	6	5	6	-	14	-	-	4	-
Wed	7-Aug	AM	6	2	-	2	-	7	-	-	-	-
		PM	9	-	8	-	-	18	-	-	4	-
Thu	8-Aug	AM	3	4	1	4	-	11	-	-	-	-
		PM	1	5	8	-	-	13	-	-	2	-
Fri	9-Aug	AM	2	8	-	-	-	5	2	-	-	-
		PM	-	4	8	2	-	10	2	-	3	-
Sat	10-Aug	AM	15	-	-	-	-	10	3	-	-	-
		PM	-	1	12	5	-	46	25	-	3	2
Sun	11-Aug	AM	13	2	2	1	-	11	-	-	-	-
		PM	2	-	18	-	-	38	51	-	3	2

Mon	12-Aug	AM	8	1	-	2	-	7	-	-	-	-
		PM	13	1	3	3	-	30	-	-	6	-
Tues	13-Aug	AM	-	-	-	2	-	2	1	-	2	-
		PM	14	-	2	2	-	14	1	-	4	-
Wed	14-Aug	AM	-	-	-	6	-	5	-	-	-	-
		PM	14	-	2	2	-	32	-	-	3	-
Thu	15-Aug	AM	6	-	-	7	-	15	2	-	-	-
		PM	4	-	-	-	-	16	-	-	8	-
Fri	16-Aug	AM	4	-	-	-	-	8	1	-	-	-
		PM	1	3	7	-	1	39	12	-	2	-
Sat	17-Aug	AM	-	-	-	-	-	-	-	-	-	-
		PM	-	-	-	-	-	-	-	-	-	-
Sun	18-Aug	AM	11	-	-	-	-	5	1	-	-	-
		PM	-	-	4	-	-	6	6	-	-	-
Mon	19-Aug	AM	1	-	-	1	-	7	-	-	-	-
		PM	11	1	-	-	-	18	-	-	-	-
Tues	20-Aug	AM	4	-	-	-	-	9	-	-	2	-
		PM	12	-	4	-	-	12	-	-	-	-
Wed	21-Aug	AM	12	-	1	-	-	9	2	-	-	-
		PM	8	-	2	4	-	14	2	-	-	-
Thu	22-Aug	AM	13	-	2	2	-	9	-	-	-	-
		PM	11	-	9	4	-	20	-	-	1	-
Fri	23-Aug	AM	11	-	-	2	-	8	-	-	-	-

		PM	-	3	6	2	-	4	1	-	-	-
Sat	24-Aug	AM	4	-	2	-	-	9	3	-	-	-
		PM	2	-	15	1	-	58	53	-	2	-
Sun	25-Aug	AM	20	-	6	1	-	12	15	-	-	-
		PM	8	1	21	3	-	95	71	-	2	-
Mon	26-Aug	AM	13	-	-	3	-	11	-	-	-	-
		PM	2	-	4	3	-	7	-	-	-	-
Tues	27-Aug	AM	15	-	-	9	-	6	-	-	-	-
		PM	16	-	3	6	-	12	-	-	1	-
Wed	28-Aug	AM	14	-	-	-	-	9	-	-	-	-
		PM	-	-	-	-	-	-	-	-	-	-
Thu	29-Aug	AM	9	-	-	-	-	13	-	-	-	-
		PM	5	-	9	2	-	13	-	1	2	-
Fri	30-Aug	AM	12	-	-	-	-	12	-	-	-	-
		PM	7	-	9	2	-	11	-	-	2	-
Sat	31-Aug	AM	-	-	-	-	-	11	-	-	-	-
		PM	2	-	8	4	-	51	26	-	3	-
Total			432	47	228	120	2	1014	328	1	69	4

Table A.3: FDMB Vessel Transits - (9/1/2013 to 9/30/2013)

			Row	Police	Motor Yacht	Tug	Barge	Power	Kayak	Canoe	Water Taxi	Sail boat
Sun	1-Sep	AM	8	-	1	1	-	13	4	-	-	-
		PM	-	4	1	-	2	49	48	-	8	-
Mon	2-Sep	AM	19	-	-	-	-	18	3	-	-	-
		PM	-	2	4	-	-	28	10	-	2	-
Tue	3-Sep	AM	2	-	-	-	2	2	2	-	-	-
		PM	7	3	-	-	-	14	-	-	-	-
Wed	4-Sep	AM	8	-	-	-	-	4	2	-	-	-
		PM	10	-	-	-	-	11	1	-	-	-
Thu	5-Sep	AM	-	-	-	-	-	-	-	-	-	-
		PM	-	-	-	-	-	-	-	-	-	-
Fri	6-Sep	AM	5	-	2	-	-	3	-	-	-	-
		PM	16	-	5	-	-	14	-	-	8	-
Sat	7-Sep	AM	9	-	3	2	1	16	10	-	-	-
		PM	-	-	4	-	-	10	12	-	-	-
Sun	8-Sep	AM	4	-	2	-	-	9	14	-	-	-
		PM	1	-	2	-	-	6	9	-	4	3
Mon	9-Sep	AM	3	-	2	-	-	6	-	-	-	-
		PM	20	-	2	-	2	18	-	-	-	-
Tue	10-Sep	AM	-	-	-	-	3	3	-	-	-	1
		PM	9	-	2	-	-	11	-	-	4	-
Wed	11-Sep	AM	2	-	-	-	1	5	-	-	-	-
		PM	13	-	2	-	-	14	-	-	-	-

Thu	12-Sep	AM	9	-	5	-	3	14	-	-	-	-
		PM	23	-	2	-	-	4	-	-	-	-
Fri	13-Sep	AM	4	-	1	-	-	3	-	-	-	1
		PM	6	-	4	-	-	14	7	-	2	3
Sat	14-Sep	AM	-	-	-	-	-	-	-	-	-	-
		PM	-	-	-	-	-	-	-	-	-	-
Sun	15-Sep	AM	7	-	-	-	-	13	-	-	-	-
		PM	-	-	8	2	1	34	5	-	2	-
Mon	16-Sep	AM	-	2	3	-	1	4	-	-	-	-
		PM	-	3	1	-	2	-	-	-	-	1
Tue	17-Sep	AM	-	-	-	-	-	-	-	-	-	-
		PM	15	1	-	-	1	15	-	-	1	-
Wed	18-Sep	AM	5	2	-	-	-	7	-	-	-	1
		PM	20	5	3	2	-	17	-	-	2	1
Thu	19-Sep	AM	-	2	-	1	-	7	-	-	1	-
		PM	11	-	2	-	-	20	-	-	1	1
Fri	20-Sep	AM	2	1	-	-	-	3	-	-	-	-
		PM	10	1	-	2	-	19	3	-	6	-
Sat	21-Sep	AM	9	1	-	-	-	11	20	-	2	-
		PM	-	-	3	-	-	10	12	-	5	-
Sun	22-Sep	AM	11	-	-	-	-	12	14	-	-	-
		PM	-	-	9	-	-	38	-	-	3	2
Mon	23-Sep	AM	-	2	-	4	-	4	-	-	-	1
		PM	15	1	-	-	-	13	2	-	2	1

Tue	24-Sep	AM	3	1	-	2	-	2	-	-	-	3
		PM	24	1	-	-	-	15	6	-	2	1
Wed	25-Sep	AM	-	-	-	-	-	3	-	-	-	-
		PM	-	-	-	2	-	-	-	-	-	-
Thu	26-Sep	AM	-	-	1	5	-	2	5	-	-	-
		PM	23	1	-	-	-	20	2	-	2	3
Fri	27-Sep	AM	-	-	-	-	-	-	-	-	-	-
		PM	-	-	-	-	-	-	-	-	-	-
Sat	28-Sep	AM	-	-	-	-	-	-	-	-	-	-
		PM	-	-	-	-	-	-	-	-	-	-
Sun	29-Sep	AM	6	1	4	-	1	9	7	-	-	-
		PM	-	-	1	-	-	4	6	-	-	-
Mon	30-Sep	AM	-	2	-	4	-	4	-	-	-	1
		PM	16	2	1	1	-	14	1	-	-	1
	Total		355	38	80	28	20	589	205	0	57	25

Table A.4: FDMB Vessel Transits - (10/1/2013 to 10/6/2013)

			Row	Police	Motor Yacht	Tug	Barge	Power	Kayak	Canoe	Water Taxi	Sail boat
Sun	1-Oct	AM	4	0	0	1	2	7	4	-	-	-
		PM	10	0	1	2	-	19	1	-	-	-
Mon	2-Oct	AM	0	0	0	4	-	14	-	-	-	-
		PM	26	0	2	5	1	31	-	-	-	1
Tue	3-Oct	AM	0	0	0	2	2	9	-	-	-	1
		PM	25	0	1	2	1	41	-	-	-	1
Wed	4-Oct	AM	3	1	0	0	1	1	-	-	-	-
		PM	30	2	2	0	-	25	90	-	-	-
Thu	5-Oct	AM	43	2	3	0	-	23	6	-	-	-
		PM	13	0	5	0	-	16	56	-	-	-
Fri	6-Oct	AM	2	0	0	0	-	5	22	-	-	-
		PM	0	2	3	0	-	16	44	-	2	-
		Total	156	7	17	16	7	207	223	0	2	3

Appendix B: Proposed Design Build Contract Provisions for Vessel Impact Protection

Ship Impacts

The operational classification for the Crossing shall be "Critical."

All piers shall be designed for vessel impact. The impact forces shall be computed in accordance with AASHTO LRFD Section 3.14 based on the minimum design load of a drifting hopper barge as described in AASHTO LRFD Section 3.14.1. A site specific vessel traffic study and risk assessment will not be required.

Vessel Impact Loads shall be determined by the Design-Builder. The structure shall be designed in accordance with AASHTO LRFD Bridge Design Specifications to account for the effects of impact on the sub-structure and/or the fenders.

Fenders shall be provided at the first two piers adjacent to each side of the navigation span for the protection of small vessels from damage in the event of accidental collision. Fenders may be self-supporting or attached to the piers. Table B.1 presents the characteristics of small vessels using the waterway, which are to be considered in the design of fenders.

Table B.1: Small Vessel Characteristics

Vessel Type	Draft (ft)		LOA (ft)		Beam (ft)	
	Max	Min	Max	Min	Max	Min
Fire/Police Boats	6	2	71	33	21	8
Small Recreational Craft	6	1	68	18	22	5
Passenger Vessel	8	2	110	36	33	10

Protection from vessel impacts of the piers of the existing bridge shall be maintained or provided for during construction.

Appendix C-1: Daily Draw Bridge Openings 2008 - 2013 (Tabulated)

Table C.1: Daily South Capitol Street Bridge Draw Openings - 2008

Date	Event	Draw Opened	Draw Closed	Name of Vessel	Direction of Vessel	Remarks
9/7/2008	Test	Pass	Pass			
10/19/2008	Test	Pass	Pass			
11/9/2008	Test	Pass	Pass			
12/14/2008	Test	Pass	Pass			

Table C.2: Daily South Capitol Street Bridge Draw Openings - 2009

Date	Event	Draw Opened	Draw Closed	Name of Vessel	Direction of Vessel	Remarks
4/27/2009	Test	Pass	Pass			
5/5/2009	Test	Pass	Pass			
6/7/2009	Test	Pass	Pass			
8/2/2009	Test	Pass	Pass			
9/13/2009	Test	Pass	Pass			
10/4/2009	Test	Pass	Pass			
11/8/2009	Test	Pass	Pass			

Table C.3: Daily South Capitol Street Bridge Draw Openings - 2010

Date	Event	Draw Opened	Draw Closed	Name of Vessel	Direction of Vessel	Remarks
1/24/2010	Test	Pass	Pass			
2/28/2010	Test	Pass	Pass			
3/1/2010	Test	Pass	Pass			
3/21/2010	Test	Pass	Pass			
5/2/2010	Test	Pass	Pass			
6/6/2010	Test	Pass	Pass			
7/25/2010	Test	Pass	Pass			
9/12/2010	Test	Pass	Pass			
10/3/2010	Test	Pass	Pass			
11/14/2010	Test	Pass	Pass			
12/5/2010	Test	Pass	Pass			Delay due to equipment failure

Table C.4: Daily South Capitol Street Bridge Draw Openings - 2011

Date	Event	Draw Opened	Draw Closed	Name of Vessel	Direction of Vessel	Remarks
1/9/2011	Test	Pass	Pass			
2/6/2011	Test	Pass	Pass	Problem with the outbound gate		
3/6/2011	Test	Pass	Pass			
5/1/2011	Test	Pass	Pass			
6/5/2011	Test	Pass	Pass			
7/11/2011	Test	Pass	Pass	Delay due to Bridge Span Brake release.		
8/7/2011	Test	Pass	Pass			
9/19/2011	Test	Pass	Pass	Delay due to accident with Rope crew.		
11/21/2011	Test	Pass	Pass			
12/11/2011	Test	Pass	Pass			

Table C.5: Daily South Capitol Street Bridge Draw Openings - 2012

Date	Event	Draw Opened	Draw Closed	Name of Vessel	Direction of Vessel	Remarks
2/26/2012	Test	Pass	Pass			
4/22/2012	Test	Pass	Pass			
5/13/2012	Test	Pass	Pass			
6/3/2012	Test	Pass	Pass			
9/16/2012	Test	Pass	Pass			
9/20/2012	Test	Pass	Pass	Pride Baltimore II Boat	Dock at US Navy Yard	
9/22/2012	Test	Pass	Pass	Pride Baltimore II Boat	Departure from US Navy Yard	
11/18/2012	Test	Pass	Pass			
12/16/2012	Test	Pass	Pass	Minnie-V Boat	Dock at US Navy Yard	Departure from Diamond Teague Park

Table C.6: Daily South Capitol Street Bridge Draw Openings - 2013

Date	Event	Draw Opened	Draw Closed	Name of Vessel	Direction of Vessel	Remarks
1/13/2013	Test	Pass	Pass			
2/10/2013	Test	Pass	Pass			
3/17/2013	Test	Pass	Pass			Delay due to issue with the center wedges
4/21/2013	Test	Pass	Pass	Minnie-V Boat	Departure from US Navy Yard	Departure from the Diamond Teague Park
5/19/2013	Test	15 degrees				The Span failed to open b, power went out
1/13/2013	Test	Pass	Pass			
2/10/2013	Test	Pass	Pass			
3/17/2013	Test	Pass	Pass			Minor delay due to center wedge.
4/21/2013	Test	Pass	Pass	Minnie-V Boat	US Navy Yard	Departure from the Diamond Teague Park.
5/19/2013	Test	Fail				The Span failed to open as Power went out.
9/8/2013	Test	Fail				Operation aborted as span location Indicator gave false reading
11/17/2013	Test	Pass	Pass			Minor delay due to District side gate barrier

Appendix C-2: Daily Draw Bridge Openings 2002 – 2013 (Handwritten Logs)

DAILY REPORT OF DRAW OPENINGS

SOUTH CAPITOL ST. BRIDGE OVER ANACOSTIA RIVER, WASHINGTON, D. C.

DRAW OPERATORS	DATE	DRAW OPENED	DRAW CLOSED	NAME OF VESSEL OR VESSELS PASSING THROUGH (List each vessel separately)	CLASS OF VESSEL	LIGHT OR LOADED	NUMBER AND CLASS OF CRAFT IN TOW	LIGHT OR LOADED	DIRECTION OF TRAFFIC	REMARKS
MOODY	9-23-02	10:30 AM								TEST - FOUND SEVERAL PROBLEMS WITH GEMCO SW
MOODY	9-25-02	10:30AM	10:43 AM	TUG BOAT IRELAND					IN BOUND	
MOODY	9-27-02	7:50 AM	8:06 AM	TUG BOAT IRELAND					OUT BOUND	
MOODY	5-13-03	11:AM	11:10 AM							TEST NO RED LIGHTS ANC. SIDE
MOODY	5.20-03	11:20AM	11:55 AM	TUG BOAT					IN BOUND	
MOODY	5-23-03	3:25AM	3:45AM	TUG BOAT APPACHE					OUT BOUND	
LARRY MOODY	6-18-03	10:55AM	11:00AM	COAST GUARD SHIP TENDER					IN	
LARRY MOODY	6-18-03	11:37AM	11:45AM	JAMES RANKIN					OUT	
BILL MOODY	6-26-03	8:45PM	9:10PM	KING POINTER					IN BOUND	NAVY SHIP
BILL MOODY	6-29-03	8:55AM	9:10AM	" "					OUT BOUND	NAVY SHIP
LARRY MOODY	9-4-03	10:55AM	11:20AM	TUG BOAT					IN BOUND	
LARRY MOODY	9-5-03	10:45AM	10:50AM	CASEY CHURCH TUG BOAT					OUT BOUND	
MOODY	10-03-03	3AM	3:17AM	TALL SHIP					IN BOUND	OK
MOODY BILL	10-7-03	8:35AM	9:00PM	TALL SHIP					OUT BOUND	OK
BILL J CARPENTER	03-11-04	11:00AM	11:15AM	TEST						ON COMING SEMI FORE GATE NOT WORKING
" "	3-11-04	11:50AM	12:01PM	TEST						" " " "
BILL CARPENTER	3-15-04	10:00AM	10:15AM	CAPT. RABERSON						" " " "
Maryland carpenter central Bill	19-apr-04	9:58AM	10:14AM	capt. nelson					out Bound	on coming gate not going down
LEAN, CARP. MEEKLY CENTRAL	11/17/04	12:25PM	12:40PM	TEST						
LEAN, STEWART CENTRAL	11/22/04	12:30PM	12:42PM	TEST						
LEAN, STEWART CENTRAL	11/29/04	11:50AM	12:00PM	TEST						
LEAN, SMITH CENTRAL	11/29/04	12:15PM	12:30PM	TEST						
[illegible]	01/13/05	[illegible]	8:14AM	TEST						

DAILY REPORT OF DRAW OPENINGS

SOUTH CAPITOL ST. BRIDGE OVER ANACOSTIA RIVER, WASHINGTON, D. C.

DRAW OPERATORS	DATE	DRAW OPENED	DRAW CLOSED	NAME OF VESSEL OR VESSELS PASSING THROUGH (List each vessel separately)	CLASS OF VESSEL	LIGHT OR LOADED	NUMBER AND CLASS OF CRAFT IN TOW	LIGHT OR LOADED	DIRECTION OF TRAFFIC	REMARKS
[illegible], STEWART	3/26/05	7:45 AM	7:55 AM	TEST						CENTRAL
"		8:05 AM	8:15 AM	TEST						"
[illegible]RT, McNeely, Helton	4-30-05	8:01 AM	8:15 AM	TEST						CENTRAL
[illegible]N, Autrey										
[illegible]ewart, McNeely, Helton		12:05	12:09	Test						
[illegible]kson, Taylor Steve	5/18/05	12:10	12:20	Test						
[illegible]nday, Mark Schorder		12:29	12:39	"						
[illegible]trey " "	"									
[illegible]ewart, McNeely,										
[illegible]kson Steve, Taylor	5/19/05	1:47 AM	2:04 AM	YP 684 YP 682	YP 676 YP 688	Coast Guard				Good
[illegible]nday Mark Autrey										
[illegible]elton										
[illegible]ewart, McNeely, Helton	5/23/05	10:04 AM	10:18 AM	YP 684, YP 682,	YP 676, YP 688					
[illegible]kson, Steve, Taylor										
[illegible]nday Mark										
[illegible]wart McNeely Helton	6/11/05	8:40	8:52	Test						
[illegible], Steve Peteschorder										

DAILY REPORT OF DRAW OPENINGS

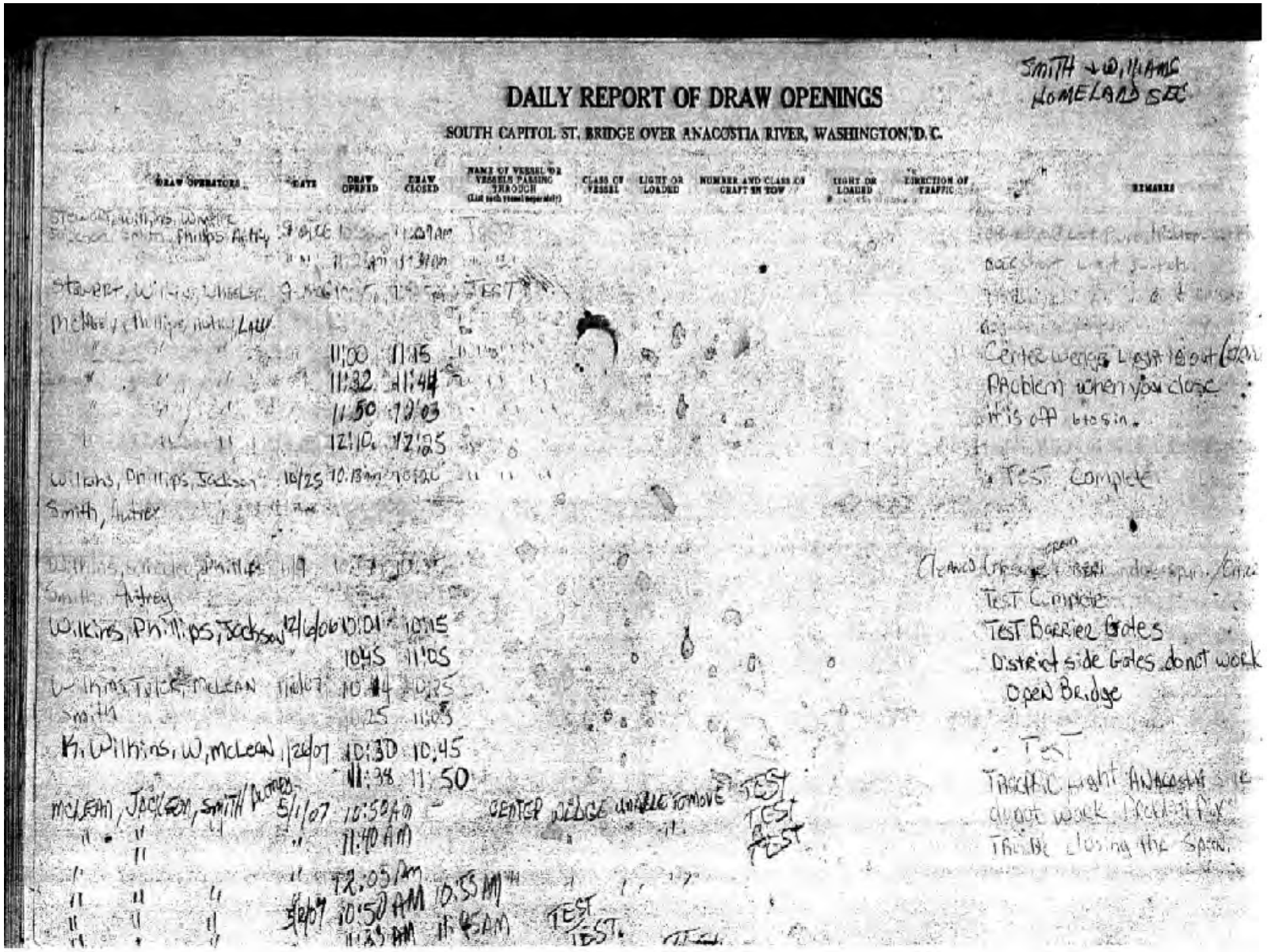
SOUTH CAPITOL ST. BRIDGE OVER ANACOSTIA RIVER, WASHINGTON, D.C.

DRAW OPERATORS	DATE	DRAW OPENED	DRAW CLOSED	NAME OF VESSEL OR VESSELS PASSING THROUGH (List each vessel separately)	CLASS OF VESSEL	LIGHT OR LOADED	NUMBER AND CLASS OF CRAFT IN TOW	LIGHT OR LOADED	DIRECTION OF TRAFFIC	REMARKS
Stewart, McNeely, Taylor	7-23-05	7:35	7:42	Test						Limit switch Problem
Wilkins, Helton, Baldwin,	" "	" "	" "							For Span Drive
Schroder	" "	7:59	8:13							
McNeely, Stewart, Taylor,	8-1-05	11:01	11:04	Test						Switch Span Drive From
Wilkins, Jackson, Helton,		11:23	11:28	" " "						A to B, Both Used
Monday, Schroder, Autry										
McNeely, Stewart, Taylor,	9/24/05	7:20A	7:33A	"Test"						Problem with Bridge
Wilkins, Jackson, Helton	9/24/05	7:43A	7:53A	"Test"						~~Gave~~ Did not open
Wheeler, Phillip, Autry.										
Stewart, Autry, Schroder	9/29/05	10:57A	11:05A	Test						Breaking and Testing Limit
" " " " "	" "	11:15A	11:26A	Test						switches - Used Both Drive
" " " " "	9-29-05	1:10P	1:20P	" "						Spans A+B. Checked for Broken
										Limit switch
Taylor, Stewart, Wilkins McNeely	10/29/05	7:34AM	7:36AM	Test						
Wheeler, Phillips, Helton Baldwin	10/29/05	7:36AM								No Power to Span Drive Motor
Stewart, Baldwin, Autry, Cox	11/3/05	11:16A	11:21A	Test						Did Not open
Helton, McNeely		12:13P	12:25P	" "						Bridge Did open
Helton, McNeely, Autry, Cox, Jones	11/3/05	9:36A	10:35A	Test						Removed Span Brake Motor for
Taylor										Repair

DAILY REPORT OF DRAW OPENINGS

SOUTH CAPITOL ST. BRIDGE OVER ANACOSTIA RIVER, WASHINGTON, D. C.

DRAW OPERATORS	DATE	DRAW OPENED	DRAW CLOSED	NAME OF VESSEL OR VESSELS PASSING THROUGH (List each vessel separately)	CLASS OF VESSEL	LIGHT OR LOADED	NUMBER AND CLASS OF CRAFT IN TOW	LIGHT OR LOADED	DIRECTION OF TRAFFIC	REMARKS
Stewart, Helton, McNeely, Autry, Jim	2/02/07	11:19		Test						
Helton, Stewart, Taylor, Phillips, Autry	5/31/06			TEST						Could Not OPEN Bridge problem with Control mechanism
Stewart, Baldwin, Autry	6-2-06	11:27am	11:37am	TEST						Limit control arm was not set properly. switched to Both sparks A+B
Taylor, Wilkins, Phillips	" "	12:09pm	12:21pm	TEST						(opened with no problem)
Jackson	" "	1:24pm	1:33pm	TEST						
Stewart, Helton, Wilkins, Baldwin, Autry	6-3-06	6:40 Am	6:47 Am	TEST						OPENED with no problem
Stewart, McNeely, Autry, Helton, Baldwin, Blevins, Taylor, Wilkins	6-4-06	3:22pm	3:42pm	AMERICAN SPIRIT						OPENED with no problem
Stewart, Wilkins, Phillips, Taylor, Jackson, Taylor, Autry, Schrader	6-8-06	11:55am	12:05	TEST						
Stewart, Wilkins, Taylor, Phillips, Autry	8-30-06	10:24Am 10:50	10:36Am 11:06Am	TEST " " "						Railroad Gates did not work Put in Bypass. No power to the Toggles. SAME problem.



SMITH + WILLIAMS
HOMELAND SEC

DAILY REPORT OF DRAW OPENINGS

SOUTH CAPITOL ST. BRIDGE OVER ANACOSTIA RIVER, WASHINGTON, D.C.

DRAW OPERATORS	DATE	DRAW OPENED	DRAW CLOSED	NAME OF VESSEL OR VESSELS PASSING THROUGH (List each vessel separately)	CLASS OF VESSEL	LIGHT OR LOADED	NUMBER AND CLASS OF CRAFT IN TOW	LIGHT OR LOADED	DIRECTION OF TRAFFIC	REMARKS
Stewart, Wilkins, Wheeler, Smith, Phillips, Autrey	9/6/06		11:09AM							
		11:31AM	11:31AM							
Stewart, Wilkins, Wheeler	9/6/06			TEST						
McNee, Phillips, Autrey, Lally		11:00	11:15							
		11:32	11:44							
		11:50	12:03							
		12:10	12:25							
Wilkins, Phillips, Jackson	10/25	10:13am	10:52AC							
Smith, Autrey										
Wilkins, Wheeler, Phillips	11/9									
Smith, Autrey										
Wilkins, Phillips, Jackson	12/6/06	10:01	10:15							
		10:45	11:05							
Wilkins, Jack, McLean	11/6/07	10:14	10:25							
Smith		11:25	11:03							
K. Wilkins, W. McLean	12/6/07	10:30	10:45							
		11:38	11:50							
McLean, Jackson, Smith, Phillips	5/1/07	10:50AM		CENTER WEDGE UNABLE TO MOVE						TEST TEST TEST
		11:40AM								
		12:05pm								
	5/8/07	10:50AM	10:55AM							
		11:35AM	11:45AM	TEST TEST.						

Center wedge left about 6 inch
Problem when you close
it is off 6 to 8 in.

TEST Complete

Cleared (from TRAFFIC) drawspan, Circ
Test Complete
Test Barrier Gates
District side Gates donot work
Open Bridge

TEST
Traffic light Anacostia side
donot work Pick-up Pax
Trouble closing the Span.

DAILY REPORT OF DRAW OPENINGS

SOUTH CAPITOL ST. BRIDGE OVER ANACOSTIA RIVER, WASHINGTON, D. C.

DRAW OPERATORS	DATE	DRAW OPENED	DRAW CLOSED	NAME OF VESSEL OR VESSELS PASSING THROUGH (List each vessel separately)	CLASS OF VESSEL	LIGHT OR LOADED	NUMBER AND CLASS OF CRAFT IN TOW	LIGHT OR LOADED	DIRECTION OF TRAFFIC	REMARKS
MCLEAN/AUTREY	5/02/07	1230AM	1238AM	TEST						DACOMING GATE BUIB-UP TEP 2 RAILROAD GATE

DAILY REPORT OF DRAW OPENINGS

SOUTH CAPITOL ST. BRIDGE OVER ANACOSTIA RIVER, WASHINGTON, D.C.

DRAW OPERATORS	DATE	DRAW OPENED	DRAW CLOSED	NAME OF VESSEL OR VESSELS PASSING THROUGH (Use each vessel separately)	CLASS OF VESSEL	LIGHT OR LOADED	NUMBER AND CLASS OF CRAFT IN TOW	LIGHT OR LOADED	DIRECTION OF TRAFFIC	REMARKS
Cornelious Phillips, Keith Wilkins, Robert McNeely, Keane Wheeler, Robert Taylor	4-26-09	5 AM	5:23 AM							Test Complete
Keane Wheeler, Robert Taylor, Keith Wilkins, Robert McNeely, Gregory Smith	5/17/09	5:14 AM	5:16 AM							Brakes problem. Barriers Automatic & D.C. Barriers would not closed. Bridge Closed 5:23 AM
Keith Wilkins, R. Taylor, R. McNeely, L. Smith	6/2/09	4 AM	5:35 AM							Brake problem. District toggles no light for drive-pull Fill line / [illegible]
K. Wheeler, K. Wilkins, R. McNeely, G. Jackson	6/21/09	4:00 AM	4:29 AM							Test Complete
K. Wilkins, K. Wheeler, R. Taylor, R. McNeely, C. Phillips	7/12/09	4:00 AM	4:20 AM							Test Complete
K. Wilkins, R. Taylor, R. McNeely, K. Wheeler, M. Dawkins	8/2/09	4:00 AM	4:20 AM							
K. Wilkins, R. Taylor, K. Wheeler, L. Jackson	9/3/09	4 AM	-							TEST COMPLETE

DAILY REPORT OF DRAW OPENINGS

SOUTH CAPITOL ST. BRIDGE OVER ANACOSTIA RIVER, WASHINGTON, D. C.

DRAW OPERATORS	DATE	DRAW OPENED	DRAW CLOSED	NAME OF VESSEL OR VESSELS PASSING THROUGH (List each vessel separately)	CLASS OF VESSEL	LIGHT OR LOADED	NUMBER AND CLASS OF CRAFT IN TOW	LIGHT OR LOADED	DIRECTION OF TRAFFIC	REMARKS
[illegible]										
[illegible]										
[illegible]										
Kenne Wrelin										
Robert Taylor, Michael Parking, Julius Taylor	10-3-16									
Robert Taylor, Larry Smith, Julius Taylor, Robert Mcneely, Gary Jackson	11-14-16									
[illegible]										

DAILY REPORT OF DRAW OPENINGS

SOUTH CAPITOL ST. BRIDGE OVER ANACOSTIA RIVER, WASHINGTON, D. C.

DRAW OPERATORS	DATE	DRAW OPENED	DRAW CLOSED	NAME OF VESSEL OR VESSELS PASSING THROUGH (Use each vessel separately)	CLASS OF VESSEL	LIGHT OR LOADED	NUMBER AND CLASS OF CRAFT IN TOW	LIGHT OR LOADED	DIRECTION OF TRAFFIC	REMARKS
[illegible]	[illegible]	[illegible]	[illegible]							Did not close [illegible] to let traffic at [illegible]
[illegible] Jackson Harry L. Jackson [illegible]	7-11-10	[illegible]	[illegible]							Had problem with the [illegible] gate [illegible] could not open to open span bridge did not open [illegible] [illegible]
7-25-10 5:12 PM	Larry R Smith Michael Dawkins Robert Taylor Robert McNally									
8-15-10	Robert Taylor Robert McNally Tensly Simpson									8-15-10 Gate No 5 Had a problem

DAILY REPORT OF DRAW OPENINGS

SOUTH CAPITOL ST. BRIDGE OVER ANACOSTIA RIVER, WASHINGTON, D. C.

DRAW OPERATORS	DATE	DRAW OPENED	DRAW CLOSED	NAME OF VESSEL OR VESSELS PASSING THROUGH (List each vessel separately)	CLASS OF VESSEL	LIGHT OR LOADED	NUMBER AND CLASS OF CRAFT IN TOW	LIGHT OR LOADED	DIRECTION OF TRAFFIC	REMARKS
Robert Taylor	12-5-10	4:34 AM	4:52 AM							Rolling barrier on dist side would not open had to go to bypass
~~Robert Taylor~~	~~1-1-11~~									Chain broken at dist side had to bypass
Robert Taylor	1-4-11	4:10 AM	4:25 AM							
C. Phillips, J. Taylor, L. Silva, Richard Kennedy	02-07-11	[illegible]	4:40 am							Anacostia barrier came up press on coming both 2 were by pass
[illegible]	3-6-11	4:10 am	5:03 am							
LARRY SMITH	4-3-11									Lower side interlock not working check all lights
Robert Taylor	4-3-11	4:50								
Michael Jenkins	[illegible]	[illegible]								

Appendix D: Minutes from DDOT Meeting with US Coast Guard (12.17.2013)

Meeting Minutes

Group Title: South Capitol Street Corridor		
Meeting Title: South Capitol Street - Navigation Study Next Steps - FAP 8888 (286)		
Date: December 17, 2013	**Time:** 11:00 AM	**Location:** Room 406
Attendees: Sanjay Kumar (DDOT); EJ Simie (DDOT); Konjit Eskender (DDOT); Stephanie Morrison (USCG); Waverly Gregory (USCG); Jessica Shea (USCG); Carolyn Washburn (CH2M HILL); Chris Conroy (CH2M HILL); Jim Moorcroft (CH2M HILL); Brian McMahon (PB); Said Cherifi (PB); Greer Gillis (PB)		
Toll-free dial-in number (U.S. and Canada): (866) 203-7023 **Conference code:** 641-380-3059		

Meeting Minutes

1. Meeting Purpose

The purpose of the meeting was to review the responses to the preliminary public notice, discuss comments on the phase 1 navigation study, provide the preliminary results of the phase 2 navigation study and discuss the next steps for a draft bridge permit application.

2. Status of Preliminary Public Notice

The USCG confirmed that they had not received any responses to the preliminary public notice. They noted that the US Navy had telephoned to confirm that the most recent letter from Admiral Ratti provides their current response. The USCG confirmed that this most recent letter sufficiently documented their current navigational needs for the waterway.

The USCG agreed to provide DDOT with a letter summarizing the status of the preliminary public notice.

The USCG noted that although the preliminary public notice is helpful as it can provide an early capture of issues to be addressed, it is not the final notice. The final notice will be tied into the bridge permit application.

The USCG stated that it is difficult to know if there would be any comment on a final public notice, they would expect that at a minimum the US Army Corps of Engineers, District Department of the Environment and US Navy would all comment.

3. Preparation and Review of Bridge Permit Application

The USCG confirmed that they are able to provide an early review of draft bridge permit application, however noted that this would be incomplete until after issue of the ROD. Also, the 10 month window for the bridge permit application will only start once all documentation is complete.

4. Comments on Phase 1 Navigation Study Report

The USCG noted that the phase 1 Navigation Study provided a very thorough analysis, and they considered it sufficient to support a final bridge permit application. The USCG asked that further analysis be included in the report to include the future development needs of marinas, and adja-

cent land development upstream of the bridge. DDOT confirmed this would be included in the Phase 2 report. The USCG would provide any additional comments through Jessica Shea.

5. Status of Phase 2 Navigation Study Report

PB provided a summary of the results of the phase 2 navigation study. 5000 vessel transits were recorded by the real time video monitoring, all of which supported the results of the phase 1 navigation study. DDOT confirmed that during the period of the study the bridge had been opened only once for maintenance purposes.

6. Next Steps

See action items below.

USCG requested that DDOT discuss the draft bridge permit application with FHWA so that they understand its status as a draft, awaiting the completion/approval of the environmental documentation.

ACTION ITEMS

	Date	Action	Action by	Status
1.	12/17/2013	Provide a letter summarizing the responses to the preliminary public notice	USCG	Complete - attached
2.	12/17/2013	Compile draft bridge permit application for review by USCG	DDOT	First quarter 2014
3.	12/17/2013	Review/clarify land use and future marina developments upstream of the bridge in the phase 2 navigation study report.	DDOT	To be issued January 2014
4.	12/17/2013	Provide Phase 2 Navigation Study to USCG	DDOT	To be issued January 2014

Attachments: USCG Letter to DDOT (Dated December 19, 2013)

Appendix E: Preliminary Public Notice 5-1317

U.S. Department of Homeland Security
United States Coast Guard

Commander
United States Coast Guard
Fifth Coast Guard District

431 Crawford Street
Portsmouth, VA 23704-5004
Staff Symbol: dpb
Phone: (757) 398-6422
Fax: (757) 398-6334
Email: jessica.c.shea2@uscg.mil

16590
19 DEC 2013

Mr. Sanjay Kumar, P.E., Project Manager
District of Columbia Department of Transportation
55 M Street, SE, Suite 400
Washington, DC 20003

Dear Mr. Kumar:

The Fifth Coast Guard District issued a preliminary public notice regarding the proposed replacement of the Frederick Douglass Memorial Bridge (South Capitol Street) over the Anacostia River. The purpose of this notice was to notify mariners, adjacent property owners, and government agencies that the District of Columbia Department of Transportation may propose to replace the current movable drawbridge with a fixed bridge. A copy of this notice is enclosed.

There were no comments provided in response to this preliminary public notice. There will be another opportunity for the public to comment on the proposed bridge design after a bridge permit application is submitted. The requisite public notice that includes a location map and engineering plans will be issued once a complete bridge permit application is received.

I look forward to our continued coordination on this project. Please feel free to contact me or my staff if you have any questions regarding the Coast Guard bridge permit process.

Sincerely,

Waverly W. Gregory, Jr.

WAVERLY W. GREGORY, JR.
Bridge Program Manager
By direction of the Commander
Fifth Coast Guard District

Enclosure: Preliminary Public Notice 5-1317

Copy: Coast Guard Sector Baltimore, Waterways Management
Ms. Carolyn Washburn, CH2M
Mr. Michael Hicks, Federal Highway Administration

U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Fifth Coast Guard District

431 Crawford Street
Portsmouth, Va. 23704-5004
Staff Symbol: (dpb)
Phone: (757) 398-6422
Fax: (757) 398-6334
Email: jessica.c.shea2@uscg.mil

16591
4 NOV 2013

PRELIMINARY PUBLIC NOTICE 5-1317

TO WHOM IT MAY CONCERN:

The purpose of this notice is to notify mariners, adjacent property owners, and government agencies that the District of Columbia Department of Transportation (DDOT) proposes plans to replace the Frederick Douglass Memorial Bridge (South Capitol Street) over the Anacostia River.

WATERWAY AND LOCATION: Across the Anacostia River, at mile 1.2, upstream of the confluence with the Potomac River in Washington, D.C. NOAA Chart # 12285.

CHARACTER OF WORK: DDOT is proposing to replace the existing swing-type Frederick Douglass Memorial Bridge (South Capitol Street) over the Anacostia River, with a new fixed bridge at essentially the same location. The replacement project will modify the existing vertical and horizontal clearance of the bridge. Presently, in the closed position to vessels, the charted vertical clearance of the existing swing-type bridge is 40 feet above mean high water (MHW), with unlimited vertical clearance in the full open position. The existing horizontal clearance is two channels of 149 feet each. The proposed replacement will be a fixed bridge that will provide a vertical clearance of 42 feet above MHW, with a proposed horizontal clearance of 150 feet.

It is requested that the Coast Guard be provided with navigational information such as the sizes and types of vessels presently owned and operated on the Anacostia River as they relate to the proposed vertical and horizontal clearances. Please submit the attached form in response to this preliminary public notice.

SOLICITATION OF COMMENTS:

It is further requested that mariners and adjacent property owners express their views from a navigational standpoint, in writing, on the proposed project giving sufficient detail to establish a clear understanding of their reasons for support of or opposition to this project. Comments will be received for the record at the office of Commander (dpb), Fifth Coast Guard District, 431 Crawford Street, Portsmouth, VA 23704-5004 through **3 DEC 2013**.

Waverly W. Gregory, Jr.

WAVERLY W. GREGORY, JR.
Bridge Program Manager
By direction of the Commander
Fifth Coast Guard District

Frederick Douglass Memorial Bridge (South Capitol Street) over the Anacostia River

Preliminary Public Notice

Response Form

It is requested that anyone having an interest in this proposed project, from the standpoint of navigation, submit vessel information, comments, and recommendations on this form to the Office of Commander (dpb), Fifth Coast Guard District, 431 Crawford Street, Portsmouth, VA 23704-5004 by **3 DEC 2013**.

Vessel Information	Please provide all requested information:
Vessel Type	
Use – Commercial or Recreational	
Vessel Height	
Draft	
Length	
Beam	
Tonnage	
Mooring Location	

Name (Optional): _____

Address (Optional): _____

Phone (Optional): _____

Comments and Recommendations: _____

_____

_____

_____

_____

THIS PAGE INTENTIONALLY LEFT BLANK.

District Department of Transportation

appendix B

federal notices

that is permitted only in the appropriate narrow circumstances contemplated by FINRA rules, the Commission notes the high number of cases where arbitrators grant brokers' expungement requests. When information is expunged from the CRD, it is no longer available to regulators, broker-dealers, or the investing public. Both regulators and the investing public are disadvantaged when factual information is removed from the CRD.[54] The Commission encourages FINRA to conduct a comprehensive review of its expungement rules and procedures to determine whether additional rulemaking is necessary or appropriate to assure that expungement in fact is treated as an extraordinary remedy that is permitted only where the information to be expunged has no meaningful investor protection or regulatory value.

For the reasons discussed above, the Commission finds that the proposed rule change is consistent with the Act.

V. Conclusion

It is therefore ordered, pursuant to Section 19(b)(2) of the Act,[55] that the proposed rule change (SR–FINRA–2014–020), be, and hereby is, approved.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[56]

Kevin M. O'Neill,

Deputy Secretary.

Exhibit A—List of Comment Letters Received for SR–FINRA–2014–020

1. Steven B. Caruso, Maddox Hargett Caruso, P.C., dated April 21, 2014 (''Caruso'')
2. Nicole Iannarone, Assistant Clinical Professor, Tim Guilmette, Student Intern, and Nataliya Obikhod, Student Intern, Georgia State University College of Law, dated May 1, 2014 (''GSU'')
3. Philip M. Aidikoff, Aidikoff, Uhl and Bakhtiari, dated May 1, 2014 (''Aidikoff'')
4. Ryan K. Bakhtiari, Aidikoff, Uhl and Bakhtiari, dated May 5, 2014 (''Bakhtiari'')
5. Richard P. Ryder, dated May 5, 2014 (''Ryder'')
6. Leonard Steiner, Steiner & Libo, PC, dated May 6, 2014 (''Steiner'')
7. Barry D. Estell, dated May 7, 2014 (''Estell'')
8. George H. Friedman, George H. Friedman Consulting, LLC, dated May 13, 2014 (''Friedman'')
9. Jason Doss, President, Public Investors Arbitration Bar Association, dated May 13, 2014 (''PIABA'')
10. David T. Bellaire, Executive Vice President and General Counsel, Financial Services Institute, dated May 14, 2014 (''FSI'')
11. Andrea Seidt, North American Securities Administrators Association (''NASAA'') President and Ohio Securities Commissioner, dated May 14, 2014 (''NASAA'')
12. Jill Gross, Director, Elissa Germaine, Supervising Attorney, and Michelle N. Robinson, Student Intern, John Jay Legal Services, Inc., Pace University School of Law, dated May 14, 2014 (''Pace'')
13. Kevin M. Carroll, Managing Director and Associate General Counsel, Securities Industry and Financial Markets Association, dated May 14, 2014 (''SIFMA'')
14. Ronald M. Amato, Amato Law Firm, LLC, dated May 15, 2014 (''Amato'')
15. Harry A. Jacobowitz, Database Manager, Securities Arbitration Commentator, Inc., dated May 16, 2014 (''Jacobowitz'')

[FR Doc. 2014–17614 Filed 7–25–14; 8:45 am]

BILLING CODE 8011–01–P

[54] Indeed, Section 15A(i) of the Act requires FINRA to collect and make available ''information reported in connection with the registration or licensing of brokers and dealers and their associated persons, including disciplinary actions, regulatory, judicial, and arbitration proceedings, and other information required by law or exchange or association rule, and the source and status of such information. *See* 15 U.S.C. 78*o*–3(i)(5).

[55] 15 U.S.C. 78s(b)(2).

[56] 17 CFR 200.30–3(a)(12).

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Supplemental Final Environmental Impact Statement; Washington, DC

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Intent to Prepare a Supplemental Final Environmental Impact Statement (SFEIS).

SUMMARY: The U.S. Federal Highway Administration (FHWA) in coordination with the District of Columbia Department of Transportation (DDOT) in Washington, DC is issuing this notice to advise agencies and the public that a Supplemental Final Environmental Impact Statement (SFEIS) will be prepared for the South Capitol Street Project (the Project). The Project proposes to make major changes to the South Capitol Street Corridor from Firth Sterling Avenue SE to Independence Avenue and the Suitland Parkway from Martin Luther King, Jr. Avenue SE., to South Capitol Street, including replacing the existing Frederick Douglass Memorial Bridge over the Anacostia River.

FOR FURTHER INFORMATION CONTACT: Federal Highway Administration, District of Columbia Division: Mr. Michael Hicks, Environmental/Urban Engineer, 1990 K Street NW., Suite 510, Washington, DC 20006–1103, (202) 219–3513, email: *michael.hicks@dot.gov*; or the District of Columbia Department of Transportation: Mr. E.J. Simie, PE, Project Manager, 55 M Street SE., Suite 400, Washington, DC 20003, (202) 671–2800, email: *ej.simie@dc.gov*.

SUPPLEMENTARY INFORMATION: In March 2011, the FHWA in conjunction with DDOT approved release of the Final Environmental Impact Statement (FEIS) for the Project. The availability of the FEIS was announced in the April 8, 2011 **Federal Register**. The alternatives examined in detail in the FEIS included a No Build Alternative and three build alternatives: Build Alternatives 1 and 2 and the Preferred Alternative, which was a modification of Build Alternative 2. A movable arched bascule was selected for the new Frederick Douglass Memorial Bridge. The alignment of the new bridge would be at an angle from the existing bridge to allow the swing span on the existing bridge to remain operational during construction, which meant that right-of-way would be needed from Joint Base Anacostia-Bolling (JBAB). Build Alternatives 1 and 2 were eliminated from consideration in the FEIS and, therefore, will not be considered in the SFEIS.

Since publication of the FEIS, FHWA and DDOT have considered major changes regarding the design of the FEIS Preferred Alternative. Most notably, DDOT reconsidered the need to obtain right-of-way from JBAB, which resulted in changing the alignment of the proposed new Frederick Douglass Memorial Bridge to a location immediately south of and parallel to the existing bridge. In addition, new information about current and planned navigation along the Anacostia River, including the navigation requirements of the U.S. Navy (USN), led to the decision to make the new bridge a fixed span structure instead of a movable span structure. Other notable design revisions made to the FEIS Preferred Alternative include the conversion of the east side traffic circle to a traffic oval similar in size to the proposed west traffic oval, and changes to the proposed ramps or ramp modifications between South Capitol Street and I–695, Suitland Parkway and I–295, and Martin Luther King, Jr. Avenue SE. and Suitland Parkway. Due to these and other design changes, a Revised Preferred Alternative was developed.

The SFEIS will be prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4371, *et seq.*), Council on Environmental Quality (CEQ) regulations (40 CFR parts 1500–1508), FHWA Code of Federal Regulations (23 CFR 771.101–771.137, *et seq.*), and all

applicable Federal, State, and local government laws, regulations, and policies. The SFEIS will describe the proposed changes to the FEIS Preferred Alternative, update the affected environment, and describe the anticipated environmental impacts of the Revised Preferred Alternative in comparison to the anticipated environmental impacts disclosed in the FEIS for the FEIS Preferred Alternative. The Purpose and Need of the Project did not change from the FEIS. The U.S. Navy; U.S. Army Corps of Engineers; U.S. Coast Guard; the National Park Service; and the District of Columbia Department of the Environment will continue to serve as Cooperating Agencies for the Project.

A 30-day review period will be provided following the Notice of Availability of the SFEIS in the **Federal Register**, and a public meeting will be held within this review period. The public meeting will be conducted by DDOT and announced a minimum of 15 days in advance of the meeting. DDOT will provide information for the public meeting, including date, time and location through a variety of means including the Project Web site (*http://www.southcapitoleis.com*) and by newspaper advertisement.

To ensure that the full range of issues is identified early in the process, comments are invited from all interested and/or potentially affected parties. Comments or questions concerning this Notice should be directed to the FHWA and DDOT at the addresses provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205 Highway Planning and Construction. The regulations and implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

Authority: 23 U.S.C. 315; 49 CFR 1.48.

Issued on: July 23, 2014.

Joseph C. Lawson,

Division Administrator, District of Columbia Division, Federal Highway Administration.

[FR Doc. 2014–17679 Filed 7–25–14; 8:45 am]

BILLING CODE 4910–22–P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

Reports, Forms and Record Keeping Requirements; Agency Information Collection Activity Under OMB Review

AGENCY: National Highway Traffic Safety Administration (NHTSA), U.S. Department of Transportation (DOT).

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.), this notice announces that the Information Collection Request (ICR) abstracted below has been forwarded to the Office of Management and Budget (OMB) for review and comment. The ICR describes the nature of the information collections and their expected burden. The **Federal Register** Notices with a 60-day and a 30-day comment period were published on February 27, 2012 (77 FR 11626) and on December 23, 2013 (78 FR 77554), respectively. No comments were received on this matter.

This document describes the collection of information for which NHTSA intends to seek OMB approval. The collection of information described is the ''Consolidated Child Restraint System Registration, Labeling and Defect Notification.'' (OMB Control Number: 2127–0576)

DATES: Comments must be submitted on or before August 27, 2014.

FOR FURTHER INFORMATION CONTACT: Ms. Cristina Echemendia at U.S. Department of Transportation, NHTSA, 1200 New Jersey Avenue SE., West Building Room W43–447, NVS–113, Washington, DC 20590. Mrs. Cristina Echemendia's telephone number is (202) 366–6345 and fax number is (202) 366–7002.

SUPPLEMENTARY INFORMATION:

National Highway Traffic Safety Administration

Title: Consolidated Child Restraint System Registration, Labeling and Defect Notifications.

OMB Control Number: 2127–0576.

Type of Request: Label revision of a currently approved collection.

Abstract: A final rule published on February 27, 2012 (77 FR 11626) amended the Federal motor vehicle safety standard for child restraint systems (CRSs) to expand its applicability to child restraints sold for children weighing up to 80 pounds (lb). The final rule also added a sentence to the printed instructions and labeling of certain CRSs (those that have internal harnesses, and that are recommended for older children). Currently, child restraint manufacturers are required to provide printed instructions with step by-step information on how the restraint is to be used. Without proper use, the effectiveness of these systems is greatly diminished. Each CRS must also have a permanent label.[1] A permanently attached label gives ''quicklook'' information on whether the restraint meets the safety requirements, recommended installation and use, and warnings against misuse. The requested revision is to add a sentence to the existing instructions brochure and labeling that will inform the consumer that the lower anchors of a Lower Anchors and Tethers for Children (LATCH) system may only be used for children weighing ''x'' lb or less, where the ''x'' value depends on the weight of the CRS. The purpose of this label is to reduce consumer confusion about using LATCH, and to assure that the lower anchors will be able to withstand the forces generated by the child and CRS in virtually all crashes.

Under the final rule, CRSs equipped with internal harnesses to restrain the child and with components to attach to a child restraint anchorage system, will be required to be labeled with a child weight limit for using the lower anchors to attach the child restraint to the vehicle. The child weight limit depends on the weight of the CRS.

On February 25, 2014 the agency published a final rule responding to petitions for reconsideration (79 FR 10396) of the February 2012 final rule. The petitions stated, among other things, that the label that was required by the 2012 rule was unclear and could be misunderstood. In response, NHTSA made minor adjustments to the labeling requirement to make it clearer and more reader friendly.

NHTSA anticipates a change to the hour burden or costs associated with the revised child restraint labels and written instructions. Child restraint manufacturers produce, on average, a total of approximately 4,500,000 child restraints per year. The label would apply to approximately 50 percent of the total annual production (2,250,000 units). The hour burden associated with the revised label consists of the child restraint manufacturer: (1) Determining the maximum allowable child weight when using the lower anchor attachments as a means of installation and (2) adding this information on an existing label and instruction manual. We estimate 2 seconds of additional burden per child restraint for the determination of the maximum allowable weight and the addition of the information on the existing label and instruction manual (2 seconds × 2,250,000 units = 4,500,000 seconds = 1,250 hours).

[1] FMVSS No. 213 also requires child restraint manufacturers to provide owner-registration cards and to keep records relating to owner registration information, so that owners can be notified about noncompliance or defect recall campaigns. These owner registration requirements are not affected by the final rule (77 FR 11626).

affect small businesses during and upon termination of the franchise agreement?

(4) Should 13 CFR 121.103(i) be modified to specifically address the provisions SBA has determined evidence excessive control by the franchisor?

(5) Should 13 CFR 121.103(i) be modified to incorporate a reference to ''Loan Program Requirements, as defined in 13 CFR 120.10,'' because SBA's policies in this area are explained in the Loan Program Requirements, and more particularly in SBA's SOP 50 10?

(6) Should SBA develop a process to accept a certification of non-affiliation from a franchisor and/or its counsel, based on standards established by SBA, in lieu of SBA or lender review of the franchise agreement and related documents?

(7) If so, should that process be available only with respect to ''renewal requests''—*i.e.,* only for franchisors that have had franchise agreements reviewed and approved by SBA in a prior year?

(8) If an applicant is not a franchisee but has an affiliate that is a franchisee, should SBA continue to review the affiliate's franchise agreement and related documents as part of the small business size determination of the applicant?

(9) Should SBA continue to list agreements on a central registry and, if so, where should that registry be maintained and by whom?

(10) If there is a cost associated with the maintenance of the registry, who should bear that cost? Should there be a charge for listing of agreements on a registry and, if so, who should bear the cost for such listing? SBA notes that there are statutory limitations on SBA's current authority to charge, retain and use fees.

(11) In light of the fact that SBA lists approved franchises on its Web site, is there a need to continue to post the Franchise Findings List as well?

(12) Should the franchise agreement review process be streamlined and/or simplified and, if so, in what way?

(13) Should the franchise appeal process be changed and, if so, in what way?

Dated: December 2, 2014.

Linda S. Rusche,

Director, Office of Financial Assistance.

[FR Doc. 2014–28698 Filed 12–5–14; 8:45 am]

BILLING CODE 8025–01–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Supplemental Draft Environmental Impact Statement; Washington, DC

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Revised Notice of Intent (NOI).

SUMMARY: FHWA is issuing this revised NOI as a correction to advise agencies and the public that a Supplemental Draft Environmental Impact Statement (SDEIS) will be prepared for the South Capitol Street Project (the Project). The Project proposes to make major changes to the South Capitol Street Corridor from Firth Sterling Avenue SE. to Independence Avenue and the Suitland Parkway from Martin Luther King, Jr. Avenue SE. to South Capitol Street, including replacing the existing Frederick Douglass Memorial Bridge over the Anacostia River. This notice revises the NOI that was published in the **Federal Register** on July 28, 2014

FOR FURTHER INFORMATION CONTACT: Federal Highway Administration, District of Columbia Division: Mr. Michael Hicks, Environmental/Urban Engineer, 1990 K Street NW., Suite 510, Washington, DC 20006–1103, (202) 219–3513, email: *michael.hicks@dot.gov;* or the District of Columbia Department of Transportation: Mr. E.J. Simie, PE, Project Manager, 55 M Street SE., Suite 400, Washington, DC 20003, (202) 671–2800, email: *ej.simie@dc.gov.*

SUPPLEMENTARY INFORMATION: In March 2011, the FHWA in conjunction with the District Department of Transportation (DDOT) approved release of the Final Environmental Impact Statement (FEIS) for the Project. The availability of the FEIS was announced in the April 8, 2011 **Federal Register**. The alternatives examined in detail in the FEIS included a No Build Alternative and three build alternatives: Build Alternatives 1 and 2 and the Preferred Alternative, which was a modification of Build Alternative 2. A movable arched bascule was selected for the new Frederick Douglass Memorial Bridge. The alignment of the new bridge would be at an angle from the existing bridge to allow the swing span on the existing bridge to remain operational during construction, which meant that right-of-way would be needed from Joint Base Anacostia-Bolling (JBAB). Build Alternatives 1 and 2 were eliminated from consideration in the FEIS and, therefore, will not be considered in the SDEIS.

Since publication of the FEIS, FHWA and DDOT have considered major changes regarding the design of the FEIS Preferred Alternative. Most notably, DDOT reconsidered the need to obtain right-of-way from JBAB, which resulted in changing the alignment of the proposed new Frederick Douglass Memorial Bridge to a location immediately south of and parallel to the existing bridge. In addition, new information about current and planned navigation along the Anacostia River, including the navigation requirements of the U.S. Navy (USN), led to the decision to make the new bridge a fixed span structure instead of a movable span structure. Other notable design revisions made to the FEIS Preferred Alternative include the conversion of the east side traffic circle to a traffic oval similar in size to the proposed west traffic oval, and changes to the proposed ramps or ramp modifications between South Capitol Street and I–695, Suitland Parkway and I–295, and Martin Luther King, Jr. Avenue SE. and Suitland Parkway. Due to these and other design changes, a Revised Preferred Alternative was developed.

The SDEIS will be prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4371, *et seq.*), Council on Environmental Quality (CEQ) regulations (40 CFR parts 1500–1508), FHWA Code of Federal Regulations (23 CFR 771.101–771.137, *et seq.*), and all applicable Federal, State, and local government laws, regulations, and policies. The SDEIS will describe the revised preferred alternative, update the affected environment, and describe the anticipated environmental impacts of the Revised Preferred Alternative in comparison to the anticipated environmental impacts disclosed in the FEIS for the FEIS Preferred Alternative. The Purpose and Need of the Project did not change from the FEIS. The U.S. Navy; U.S. Army Corps of Engineers; U.S. Coast Guard; the National Park Service; and the District of Columbia Department of the Environment will continue to serve as Cooperating Agencies for the Project.

A 45-day review period will be provided following the Notice of Availability of the SDEIS in the **Federal Register**, and a public meeting will be held within this review period. The public meeting will be conducted by DDOT and announced a minimum of 15 days in advance of the meeting. DDOT will provide information for the public meeting, including date, time and location through a variety of means including the Project Web site (*http://www.southcapitoleis.com*) and by newspaper advertisement.

To ensure that the full range of issues is identified early in the process, comments are invited from all interested and/or potentially affected parties. Comments or questions concerning this Notice should be directed to the FHWA and DDOT at the addresses provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205 Highway Planning and Construction. The regulations and implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

Authority: 23 U.S.C. 315; 49 CFR 1.48.

Issued on: November 17, 2014.

Joseph C. Lawson,

Division Administrator, District of Columbia Division, Federal Highway Administration.

[FR Doc. 2014–28720 Filed 12–5–14; 8:45 am]

BILLING CODE 4910–22–P

DEPARTMENT OF TRANSPORTATION

Federal Motor Carrier Safety Administration

[Docket No. FMCSA–2014–0296]

Qualification of Drivers; Exemption Applications; Vision

AGENCY: Federal Motor Carrier Safety Administration (FMCSA), DOT.

ACTION: Notice of final disposition.

SUMMARY: FMCSA announces its decision to exempt 33 individuals from the vision requirement in the Federal Motor Carrier Safety Regulations (FMCSRs). They are unable to meet the vision requirement in one eye for various reasons. The exemptions will enable these individuals to operate commercial motor vehicles (CMVs) in interstate commerce without meeting the prescribed vision requirement in one eye. The Agency has concluded that granting these exemptions will provide a level of safety that is equivalent to or greater than the level of safety maintained without the exemptions for these CMV drivers.

DATES: The exemptions were granted October 31, 2014. The exemptions expire on October 31, 2016.

FOR FURTHER INFORMATION CONTACT: Elaine M. Papp, R.N., Chief, Medical Programs Division, (202) 366–4001, *fmcsamedical@dot.gov,* FMCSA, Department of Transportation, 1200 New Jersey Avenue SE., Room W64–224, Washington, DC 20590–0001. Office hours are from 8:30 a.m. to 5 p.m., Monday through Friday, except Federal holidays. If you have questions on viewing or submitting material to the docket, contact Docket Services, telephone (202) 366–9826.

SUPPLEMENTARY INFORMATION:

I. Electronic Access

You may see all the comments online through the Federal Document Management System (FDMS) at *http://www.regulations.gov.*

Docket: For access to the docket to read background documents or comments, go to *http://www.regulations.gov* and/or Room W12–140 on the ground level of the West Building, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Privacy Act: In accordance with 5 U.S.C. 553(c), DOT solicits comments from the public to better inform its rulemaking process. DOT posts these comments, without edit, including any personal information the commenter provides, to *www.regulations.gov,* as described in the system of records notice (DOT/ALL–14 FDMS), which can be reviewed at *www.dot.gov/privacy.*

II. Background

On September 30, 2014, FMCSA published a notice of receipt of exemption applications from certain individuals, and requested comments from the public (79 FR 58856). That notice listed 33 applicants' case histories. The 33 individuals applied for exemptions from the vision requirement in 49 CFR 391.41(b)(10), for drivers who operate CMVs in interstate commerce.

Under 49 U.S.C. 31136(e) and 31315, FMCSA may grant an exemption for a 2-year period if it finds ''such exemption would likely achieve a level of safety that is equivalent to or greater than the level that would be achieved absent such exemption.'' The statute also allows the Agency to renew exemptions at the end of the 2-year period. Accordingly, FMCSA has evaluated the 33 applications on their merits and made a determination to grant exemptions to each of them.

III. Vision and Driving Experience of the Applicants

The vision requirement in the FMCSRs provides:

A person is physically qualified to drive a commercial motor vehicle if that person has distant visual acuity of at least 20/40 (Snellen) in each eye without corrective lenses or visual acuity separately corrected to 20/40 (Snellen) or better with corrective lenses, distant binocular acuity of a least 20/40 (Snellen) in both eyes with or without corrective lenses, field of vision of at least 70° in the horizontal meridian in each eye, and the ability to recognize the colors of traffic signals and devices showing red, green, and amber (49 CFR 391.41(b)(10)).

FMCSA recognizes that some drivers do not meet the vision requirement but have adapted their driving to accommodate their vision limitation and demonstrated their ability to drive safely. The 33 exemption applicants listed in this notice are in this category. They are unable to meet the vision requirement in one eye for various reasons, including amblyopia, macular scar, histoplasmosis, retinal detachment, glaucoma, complete loss of vision, refractive amblyopia, central serous retinopathy, enucleation, macular scar, central suppression consistent with amblyopia, strabismic amblyopia, end stage maculopathy from toxoplasmosis, central retinal artery occlusion, exotropia, prosthetic eye, and a cataract. In most cases, their eye conditions were not recently developed. Twenty-three of the applicants were either born with their vision impairments or have had them since childhood.

The 10 individuals that sustained their vision conditions as adults have had it for a range of two to 42 years.

Although each applicant has one eye which does not meet the vision requirement in 49 CFR 391.41(b)(10), each has at least 20/40 corrected vision in the other eye, and in a doctor's opinion, has sufficient vision to perform all the tasks necessary to operate a CMV. Doctors' opinions are supported by the applicants' possession of valid commercial driver's licenses (CDLs) or non-CDLs to operate CMVs. Before issuing CDLs, States subject drivers to knowledge and skills tests designed to evaluate their qualifications to operate a CMV.

All of these applicants satisfied the testing requirements for their State of residence. By meeting State licensing requirements, the applicants demonstrated their ability to operate a CMV, with their limited vision, to the satisfaction of the State.

While possessing a valid CDL or non-CDL, these 33 drivers have been authorized to drive a CMV in intrastate commerce, even though their vision disqualified them from driving in interstate commerce. They have driven CMVs with their limited vision in careers ranging from 2.5 to 50 years. In the past three years, two of the drivers were involved in crashes and one was convicted of a moving violation in a CMV.

The qualifications, experience, and medical condition of each applicant were stated and discussed in detail in

This filing is accessible on-line at *http://www.ferc.gov,* using the ''eLibrary'' link and is available for review in the Commission's Public Reference Room in Washington, DC. There is an ''eSubscription'' link on the Web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email *FERCOnlineSupport@ferc.gov,* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Comment Date: 5:00 p.m. Eastern Time on December 29, 2014.

Dated: December 8, 2014.

Kimberly D. Bose,

Secretary.

[FR Doc. 2014–29707 Filed 12–18–14; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER15–595–000]

Covanta Fairfax, Inc.; Supplemental Notice That Initial Market-Based Rate Filing Includes Request for Blanket Section 204 Authorization

This is a supplemental notice in the above-referenced proceeding of Covanta Fairfax, Inc.'s application for market-based rate authority, with an accompanying rate tariff, noting that such application includes a request for blanket authorization, under 18 CFR part 34, of future issuances of securities and assumptions of liability.

Any person desiring to intervene or to protest should file with the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Anyone filing a motion to intervene or protest must serve a copy of that document on the Applicant.

Notice is hereby given that the deadline for filing protests with regard to the applicant's request for blanket authorization, under 18 CFR part 34, of future issuances of securities and assumptions of liability, is December 29, 2014.

The Commission encourages electronic submission of protests and interventions in lieu of paper, using the FERC Online links at *http://www.ferc.gov.* To facilitate electronic service, persons with Internet access who will eFile a document and/or be listed as a contact for an intervenor must create and validate an eRegistration account using the eRegistration link. Select the eFiling link to log on and submit the intervention or protests.

Persons unable to file electronically should submit an original and 5 copies of the intervention or protest to the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426.

The filings in the above-referenced proceeding are accessible in the Commission's eLibrary system by clicking on the appropriate link in the above list. They are also available for electronic review in the Commission's Public Reference Room in Washington, DC. There is an eSubscription link on the Web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email *FERCOnlineSupport@ferc.gov.* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Dated: December 8, 2014.

Kimberly D. Bose,

Secretary.

[FR Doc. 2014–29706 Filed 12–18–14; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER15–612–000]

Moore Energy, LLC; Supplemental Notice That Initial Market-Based Rate Filing Includes Request for Blanket Section 204 Authorization

This is a supplemental notice in the above-referenced proceeding, of Moore Energy, LLC's application for market-based rate authority, with an accompanying rate schedule, noting that such application includes a request for blanket authorization, under 18 CFR part 34, of future issuances of securities and assumptions of liability.

Any person desiring to intervene or to protest should file with the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Anyone filing a motion to intervene or protest must serve a copy of that document on the Applicant.

Notice is hereby given that the deadline for filing protests with regard to the applicant's request for blanket authorization, under 18 CFR part 34, of future issuances of securities and assumptions of liability is January 2, 2015.

The Commission encourages electronic submission of protests and interventions in lieu of paper, using the FERC Online links at *http://www.ferc.gov.* To facilitate electronic service, persons with Internet access who will eFile a document and/or be listed as a contact for an intervenor must create and validate an eRegistration account using the eRegistration link. Select the eFiling link to log on and submit the intervention or protests.

Persons unable to file electronically should submit an original and 5 copies of the intervention or protest to the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426.

The filings in the above-referenced proceeding(s) are accessible in the Commission's eLibrary system by clicking on the appropriate link in the above list. They are also available for review in the Commission's Public Reference Room in Washington, DC. There is an eSubscription link on the Web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email *FERCOnlineSupport@ferc.gov.* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Dated: December 12, 2014.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2014–29700 Filed 12–18–14; 8:45 am]

BILLING CODE 6717–01–P

ENVIRONMENTAL PROTECTION AGENCY

[ER–FRL–9018–5]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564–7146 or *http://www.epa.gov/compliance/nepa/*

Weekly receipt of Environmental Impact Statements

Filed 12/08/2014 Through 12/12/2014

Pursuant to 40 CFR 1506.9.

Notice

Section 309(a) of the Clean Air Act requires that EPA make public its comments on EISs issued by other Federal agencies. EPA's comment letters on EISs are available at: *http://*

www.epa.gov/compliance/nepa/eisdata.html.

EIS No. 20140358, Draft EIS, HUD, CA, Sunnydale-Velasco HOPE SF Master Plan Project, Comment Period Ends: 02/17/2015, Contact: Eugene Flannery 415–701–5598.

EIS No. 20140359, Draft Supplement, FHWA, DC, South Capitol Street, Comment Period Ends: 02/02/2015, Contact: Michael Hicks 202–219–3513.

EIS No. 20140360, Draft EIS, USFWS, TX, Southern Edwards Plateau Habitat Conservation Plan, Comment Period Ends: 03/fxsp0;20/2015, Contact: Vanessa Burge 505–248–6420.

EIS No. 20140361, Final EIS, USFS, CO, White River National Forest Oil and Gas Leasing, Review Period Ends: 02/10/ 2015, Contact: Sarah Hankens 970–625–6840.

EIS No. 20140362, Final EIS, USFS, VA, Revised Land and Resource Management Plan for the George Washington National Forest, Review Period Ends: 01/20/2015, Contact: Karen Overcash 540–265–5175.

EIS No. 20140363, Draft EIS, FHWA, MN, US Highway 53 from Virginia to Eveleth, Comment Period Ends: 02/02/2015, Contact: Philip Forst 651–291–6100.

EIS No. 20140364, Draft EIS, APHIS, 00, Feral Swine Damage Management: A National Approach, Comment Period Ends: 02/02/2015, Contact: Kimberly K. Wagner 608–837–2727.

EIS No. 20140365, Final EIS, USACE, TX, Dallas Floodway Project, Review Period Ends: 01/20/2015, Contact: Marcia Hackett 817–886–1373.

EIS No. 20140366, Final EIS, NPS, DC, Anacostia Park Wetlands and Resident Canada Goose Management Plan, Review Period Ends: 01/20/2015, Contact: Robert Mocko 202–690–5170.

EIS No. 20140367, Draft EIS, USFS, OR, Antelope Grazing Allotments, Comment Period Ends: 02/02/2015, Contact: Lucas Phillips 541–947–2151.

EIS No. 20140368, Draft EIS, BLM, OR, Land use Plan Amendments for the Boardman to Hemingway Transmission Line Project, Comment Period Ends: 03/19/2015, Contact: Tamara Gertsch 307–775–6115.

EIS No. 20140369, Final EIS, NOAA, CA, Cordell Bank and Gulf of the Farallones National Marine Sanctuaries Expansion, Review Period Ends: 01/20/2015, Contact: Helene Scalliet 301–713–7281.

EIS No. 20140370, Draft Supplement, USN, WA, Northwest Training and Testing, Comment Period Ends: 02/02/2015, Contact: John Mosher 360–257–3234.

EIS No. 20140371, Draft EIS, USACE, CA, South San Francisco Bay Shoreline Phase I, Comment Period Ends: 02/02/2015, Contact: William DeJager 415–503–6866.

EIS No. 20140372, Draft EIS, DOE, 00, Plains and Eastern Clean Line Transmission Project, Comment Period Ends: 02/02/2015, Contact: Jane Summerson 505–845–4091.

Amended Notices

EIS No. 20140306, Draft EIS, USACE, CA, River Islands at Lathrop, Phase 2B, Comment Period Ends: 01/23/2015, Contact: William Guthrie 916–557–5269.

Revision to the FR Notice Published 10/24/2014; Extending Comment Period from 12/08/2014 to 01/23/2015.

Dated: December 16, 2014.

Dawn Roberts

Management Analyst, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 2014–29784 Filed 12–18–14; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OPP–2014–0763; FRL–9918–44]

Registration Review; Pesticide Dockets Opened for Review and Comment

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: With this notice, EPA is opening the public comment period for several registration reviews. Registration review is EPA's periodic review of pesticide registrations to ensure that each pesticide continues to satisfy the statutory standard for registration, that is, the pesticide can perform its intended function without unreasonable adverse effects on human health or the environment. Registration review dockets contain information that will assist the public in understanding the types of information and issues that the Agency may consider during the course of registration reviews. Through this program, EPA is ensuring that each pesticide's registration is based on current scientific and other knowledge, including its effects on human health and the environment. For flufenpyr-ethyl, EPA is seeking comment on the preliminary work plan, the ecological problem formulation, and the human health draft risk assessment. For Sodium Fluoride, Yellow Mustard Seed and Sulfonic Acid, EPA is seeking comment on the Combined Work Plan, Summary Document, and Proposed Interim Registration Review Decision, which includes the human health and ecological risk assessments. This notice also announces a registration review case closure for thiacloprid.

DATES: Comments must be received on or before February 17, 2015.

ADDRESSES: Submit your comments identified by the docket identification (ID) number for the specific pesticide of interest provided in the table in Unit III.A., by one of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute.
- *Mail:* OPP Docket, Environmental Protection Agency Docket Center (EPA/DC), (28221T), 1200 Pennsylvania Ave. NW., Washington, DC 20460–0001.
- *Hand Delivery:* To make special arrangements for hand delivery or delivery of boxed information, please follow the instructions at *http://www.epa.gov/dockets/contacts.html.* Additional instructions on commenting or visiting the docket, along with more information about dockets generally, is available at *http://www.epa.gov/dockets.*

FOR FURTHER INFORMATION CONTACT:

For pesticide specific information contact: The Chemical Review Manager for the pesticide of interest identified in the table in Unit III.A.

For general information contact: Richard Dumas, Pesticide Re-Evaluation Division (7508P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460–0001; telephone number: (703) 308–8015; fax number: (703) 308–8005; email address: *dumas.richard@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

This action is directed to the public in general, and may be of interest to a wide range of stakeholders including environmental, human health, farmworker, and agricultural advocates; the chemical industry; pesticide users; and members of the public interested in the sale, distribution, or use of pesticides. Since others also may be interested, the Agency has not attempted to describe all the specific

District Department of Transportation

appendix C

air quality technical report

FINAL AIR QUALITY TECHNICAL REPORT

October 2014

Table of Contents

1.0 INTRODUCTION 3
1.1 Setting 3
1.2 Purpose and Need 4
1.3 Project Area 5
1.4 No-Build and Preferred Alternative 5

2.0 AFFECTED ENVIRONMENT 9
2.1 Clean Air Act Amendments of 1990 10
2.2 National and State Ambient Air Quality Standards 10
2.3 Criteria Pollutants and Effects 12
2.4 Mobile Source Air Toxics 17
2.5 Greenhouse Gases 19
2.6 Attainment Status and Conformity with Regional Air Quality Planning 20
2.7 Ambient Air Quality in the Project Area 22

3.0 ENVIRONMENTAL CONSEQUENCES 25
3.1 Sources of Emissions 25
3.2 Analysis Methodology 26
3.3 Regional Emission Burden Assessment 37
3.4 Greenhouse Gas Analysis 38
3.5 $PM_{2.5}$ Assessment 38
3.6 MSAT Assessment 48
3.7 Microscale Assessment 50

4.0 CONSTRUCTION IMPACTS ON AIR QUALITY 53
4.1 Fugitive Dust Emissions 53
4.2 Mobile Source Emissions 54

5.0 CONCLUSIONS 55

6.0 REFERENCES 56

List of Tables

Table 1: National Ambient Air Quality Standards 11
Table 2: Attainment Classifications and Definitions 20
Table 3: Ambient Air Quality Monitor Data 2010-2012 24
Table 4: Air Quality Microscale Screening Analysis 30
Table 5: Regional Emission Burden Assessment 38
Table 6: Annual Average Daily Traffic (AADT) and Truck Percentage 40
Table 7: Predicted Worst-Case 1-hour 2020 and 2040 CO Concentrations (ppm) 51
Table 8: Predicted Worst-Case 8-Hour 2020 and 2040 CO Concentrations (ppm) 52

List of Figures

Figure 1: Project Study Area 6
Figure 2: Segments of the South Capitol Street Project 7
Figure 3: Ozone in the Atmosphere 12
Figure 4: Sources of VOCs – District of Columbia (2011) 13
Figure 5: Sources of NOx – District of Columbia (2011) 13
Figure 6: Relative Particulate Matter Size 14
Figure 7: Sources of PM2.5 – District of Columbia (2011) 15
Figure 8: Sources of PM10 – District of Columbia (2011) 15
Figure 9: Sources of CO – District of Columbia (2011) 16
Figure 10: National MSAT Emission Trends 2010 – 2050 for Vehicles Operating on Roadways Using USEPA's MOVES2010b Model 19
Figure 11: Air Quality Analysis Sites 35

Appendices

Appendices are located on attached CD.

Appendix A MOVES2010 Files
Appendix B CAL3QHC Files

1.0 Introduction

The District of Columbia Department of Transportation (DDOT), in cooperation with the Federal Highway Administration (FHWA), is proposing to replace the Frederick Douglass Memorial Bridge, reconstruct connecting roadways and interchanges, and add streetscape features in the South Capitol Street project area. This proposed action would improve safety, multimodal mobility, and accessibility, and support economic development.

A Supplemental Final Environmental Impact Statement (SFEIS) is being prepared to examine the proposed changes to the South Capitol Street Project (the Project) as described in the Final Environmental Impact Statement (FEIS) released in March 2011. Decisions about the Project made since approval of the 2011 FEIS resulted in major changes to the design of the project. The most notable decision was to reconsider obtaining right-of-way within the northernmost portion of the Joint Base Anacostia Bolling (JBAB) for the Project. This decision resulted in additional engineering to set the proposed new Frederick Douglass Memorial Bridge on an alignment immediately south of and parallel to the existing bridge. In addition, new information about current and planned navigation, including the navigation requirements of the U.S. Navy along the Anacostia River influenced the decision to include a fixed bridge among the Project alternatives.

As part of the Draft Environmental Impact Statement (DEIS) finalized in 2008, an Air Quality Technical Report was completed in 2007. The 2007 Air Quality Technical Report documented the evaluation of the Project's feasible alternatives and determined the project's impact on air quality based on those alternatives. Additionally, an air quality analysis was conducted in 2010 to support the findings of the 2011 FEIS.

This report presents the results of the updated air quality impact assessment performed for the Revised Preferred Alternative to be addressed in the SFEIS. This report:

- Describes the Project and project area.
- Identifies the air pollutants associated with motor vehicle exhaust.
- Reviews applicable standards, regulations, and local meteorology.
- Summarizes existing air quality monitored data that are representative of ambient conditions in the project area.
- Summarizes the Project's impact on local air quality.

1.1 Setting

South Capitol Street was a primary corridor in L'Enfant's 1791 Plan for the City of Washington and has always been envisioned as a symbolic gateway to the city and its Monumental Core. South Capitol Street connects downtown Washington to neighborhoods in the southeast and southwest quadrants of the District of Columbia and Prince George's County, Maryland.

Today, South Capitol Street lacks any characteristics of its historic function as a gateway and the street's present characteristics and conditions are not appropriate to its central

place and important function. South Capitol Street is an urban freeway that has become a conduit for through traffic at the expense of serving the immediate needs of the residents and businesses in the corridor. The transportation infrastructure is in deteriorating condition and fails to provide necessary connections to community destinations for pedestrians, bicyclists, transit riders, or motorists.

Despite the inadequacies of the transportation infrastructure in the corridor, new development is rapidly transforming former industrial and military uses into thriving mixed use communities and employment centers. Public investment is focused on new developments. This public investment has stimulated private investment in new residential, office, and retail developments throughout the corridor. The economic development of the South Capitol Street Corridor and along the Anacostia River is part of a District of Columbia and regional effort to revitalize the waterfront and clean up the river. The vision for the Anacostia Waterfront is an area that will unite the city economically, physically, and socially as the center of 21st century Washington and a cornerstone of the National Capital Region. South Capitol Street's transportation infrastructure must support and enhance this new vision of the Anacostia Waterfront.

With this vision in mind, DDOT in cooperation with FHWA is analyzing a range of alternatives for addressing safety, multimodal mobility, accessibility issues, and economic development in the South Capitol Street corridor.

1.2 Purpose and Need

The purpose of the South Capitol Street project is to improve safety, multimodal mobility, accessibility, and support economic development. Specifically, the project addresses the following needs:

- **Safety:** The design and deteriorating condition of the transportation infrastructure in the corridor creates safety concerns for motorists, bicyclists, pedestrians, and transit riders.
- **Mobility:** Missing critical regional roadway connections and the lack of facilities for bicyclists and pedestrians, establish the need to improve multimodal mobility in the South Capitol Street Corridor.
- **Accessibility:** There are several key destinations in or adjacent to the corridor, but these locations are difficult to reach using the existing transportation infrastructure. Grade separations, median barriers, and ramp and intersection configurations limit access to activity centers for motorists, bicyclists, pedestrians, and transit riders.
- **Economic Development:** The density of employment and residential development forecasted for the area demonstrate the need to support economic growth. Public-driven development will add jobs and create new residential neighborhoods.

1.3 Project Area

The South Capitol Street project area is located in the Southwest and Southeast quadrants of the District of Columbia adjacent to the Anacostia River (Figure 1). The northern boundary is at D Street at the US Capitol. The eastern boundary follows 2nd Street SE west of the Anacostia River and expands to the east of the Anacostia Metrorail station parking deck north of Interstate 295 east of the river. The western boundary is just west of 2nd Street from Independence Avenue SW from to T Street SW north of the Anacostia River and Mitscher Road SW in the Anacostia Naval Station. The southern boundary of the project area is just south of the Barry Farms neighborhood (near the intersection of Wade and Stevens Roads SE) and includes a portion of St. Elizabeths West Campus.

1.4 No-Build and Preferred Alternative

1.4.1 No Build Alternative

The No Build Alternative for the South Capitol Street Project consists of the existing street conditions and transportation projects that will be completed by the design year 2040 within the project area. The No Build Alternative does not meet the Project purpose and need and therefore is not evaluated in the SFEIS.

1.4.2 Overview of Build Alternatives in the FEIS

As described in Chapter 2 of the FEIS, the alternatives development process for the Project consisted of four iterations of alternatives: the Initial Build Alternatives; the Preliminary Build Alternatives; the Build Alternatives evaluated in the DEIS; and the Build Alternatives evaluated in the FEIS. Each iteration of alternatives development included consideration of planning, engineering, and environmental input with public and agency comments. All of the build alternatives included a new bridge to replace the existing Frederick Douglass Memorial Bridge, with an alignment that slanted or skewed from the existing bridge alignment. The rationale for this skewed bridge alignment, in part, was to provide adequate clearance for operating the swing-span on the existing bridge during the new bridge construction. The Build Alternatives of the FEIS only included a movable type bridge for the replacement.

1.4.3 Revised Preferred Alternative Description

The Revised Preferred Alternative presented in the SFEIS incorporates the design changes based on evaluations in the project area. For descriptive purposes, the proposed design changes to the Project are described by segments numbered 1 through 5 (Figure 2). Segment 1 includes the area over the Anacostia River, including the riverside areas immediately west and east of the river. Segment 2 includes I-295, but also the area where Suitland Parkway connects with South Capitol Street. Segment 3 includes Suitland Parkway east of Firth Sterling Avenue. Segment 4 includes South Capitol Street on the west side of the river from M Street to D Street, SE. Segment 5 encompasses the areas north of I-695 to Independence Avenue, but also includes New Jersey Avenue SE between M Street SE and D Street, SE.

Figure 1: Project Study Area

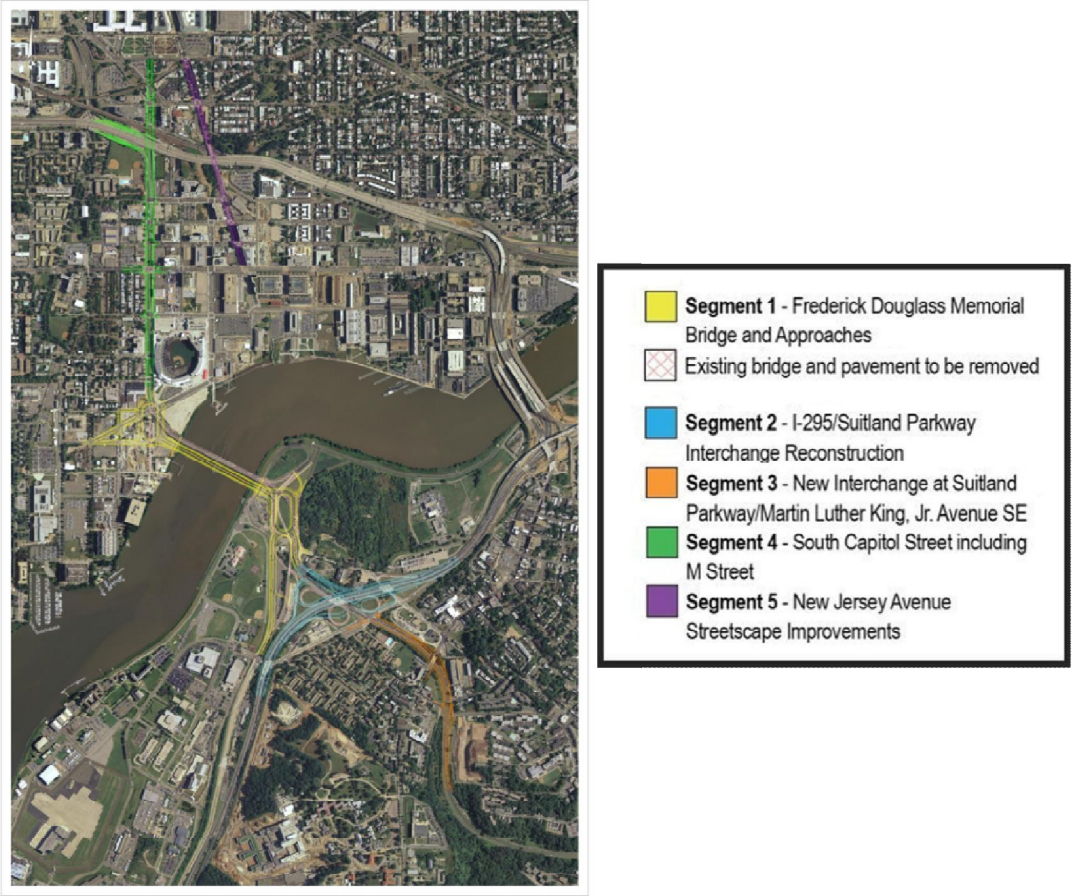


Figure 2: Segments of the South Capitol Street Project

1.4.4 Segment 1

Segment 1 encompasses the Anacostia River and the land areas immediately on both the west (near the Nationals Ballpark and Buzzard Point) and east (near Anacostia and Poplar Point) ends of the river. This segment includes the new Frederick Douglass Memorial Bridge.

The proposed new bridge alignment of the Revised Preferred Alternative would be located parallel to and approximately 30 feet from the south side or downstream from of the existing bridge superstructure. Similar to FEIS Preferred Alternative, the new proposed bridge under the Revised Preferred Alternative would support six travel lanes (three lanes in each direction), and bike/pedestrian paths. The bike/pedestrian paths would be located on opposite sides of the bridge, the same as what was proposed for the FEIS Preferred Alternative. However, each path would be approximately 18 feet wide, or two feet narrower than what was proposed in the FEIS. For each path, separate areas would be provided for cyclists and pedestrians. For cyclists, both paths would provide for two-way traffic.

The west end traffic oval was slightly reduced in size and would no longer require land from the Nationals Ballpark sidewalk and Reservation 245. The oval would still connect South Capitol Street, the new bridge, Potomac Avenue, G Street SW and R Street SW. On the west end of the bridge near the oval, the design could allow staircases to connect with the riverfront on both the north and south sides of the bridge.

The re-alignment of the proposed bridge necessitated a redesign of the traffic circle on the east end of the river to a traffic oval similar in size and scale to the traffic oval proposed on the west side of the river. The intention is to aesthetically match both the west and east end ovals. The east oval would be located completely within the DDOT right of way, and it would still allow connections between the new Frederick Douglass Memorial Bridge, and realigned South Capitol Street and Suitland Parkway.

Unlike the traffic circle proposed under the FEIS Preferred Alternative, the east traffic oval in the Revised Preferred Alternative would not directly connect~~ion~~ with Howard Road in the near term. Instead, the initial configuration of Howard Road would connect directly with Suitland Parkway. The east oval would sever the existing access roads into the Poplar Point section of Anacostia Park. To maintain park access, the northeast leg of the east oval would be used for both the park's ingress and egress at Poplar Point.

There are currently two design options for the Frederick Douglass Memorial Bridge. The first option is for a fixed span bridge and the second is for a moveable span.

1.4.5 Segment 2

Segment 2 encompasses I-295 and the area between this freeway and the proposed east traffic oval, including Suitland Parkway and South Capitol Street. The existing I-295 / Suitland Parkway Interchange would be modified from a partial cloverleaf interchange to an urban diamond interchange that would allow all movements between Suitland Parkway and I-295. The east side cloverleaf ramps would be removed and replaced with diamond ramps. A diamond ramp (Ramp B) would be provided for southbound I-295 to eastbound Suitland Parkway movements. The ramp would have a gradient of 6.5 percent to be within highway standards. The interchange modification would require replacing the I-295 bridge over Suitland Parkway and widening the southbound I-295 bridge over Howard Road SE for a ramp to Suitland Parkway. Suitland Parkway would be reconstructed from Firth Sterling Avenue SE to the proposed traffic circle. Firth Sterling Avenue would be reconstructed from Suitland Parkway to Howard Road SE.

Segment 2 will be completely built upon completion of Segment 3. The section of Suitland Parkway within Segment 2 will consist of three lanes in each direction when fully built. The eastbound side of Suitland Parkway will also have a sidewalk and bike path.

The I-295 bridges over Howard Road SE and Firth Sterling Avenue SE would also be replaced as they have been identified to be in poor condition. The bridge over Firth Sterling Avenue SE is also over an inactive railroad right-of-way owned by CSX Transportation, Inc. (CSX). Instead of bridging over the CSX right-of-way, the right-of-way would be replaced with earthen fill. Therefore, the new I-295 bridge over Firth Sterling Avenue SE would be shorter.

1.4.6 Segment 3

Segment 3 covers Suitland Parkway from Firth Sterling Avenue SE east to just south of Stanton Road SE. Suitland Parkway would be reconstructed from Firth Sterling Avenue SE to the segment of the Parkway just south of Stanton Road SE. This would include removing ramps connecting with Stanton Road SE and Sheridan Road SE. The Martin Luther King Jr. Avenue SE overpass would be converted into an urban diamond interchange where new ramps on both sides of the Suitland Parkway would provide for all possible movements between the Parkway and Martin Luther King Jr. Avenue SE. In addition, a sidewalk/bike path would be provided or upgraded along the north side of the reconstructed Suitland Parkway.

1.4.7 Segment 4

Segment 4 covers South Capitol Street, north of the Anacostia River, from Potomac Avenue to D Street, SE. The South Capitol Street and M Street interchange would be converted to an at-grade intersection with left-turn bays. The intersection work would include reconstruction of M Street SW roughly between Half Street SE and Half Street SW. South Capitol Street from M Street to I Street would be converted into an urban boulevard, with wider sidewalks and modified intersections with L and K Streets to allow cross-street movements. The ramp carrying northbound South Capitol Street traffic to westbound I-695 located just north of the I Street intersection would be removed and replaced with an urban interchange ramp from South Capitol Street that would be located underneath the I-695 Viaduct.

The segment of South Capitol Street north of I Street would be reconstructed due to the elimination of the northbound ramp. The eastbound Southeast-Southwest Freeway off-ramp to southbound South Capitol Street would be modified to an urban interchange ramp with South Capitol Street. The modified ramp would require a signalized intersection with South Capitol Street. It could allow right-of-way occupied by the old ramp to be used for slightly expanding the size of Randall Recreation Center. Other changes to the design include minor modifications to lane configurations along South Capitol Street. An enhanced streetscape, including pedestrian amenities, would be provided on South Capitol Street from I-695 to Independence Avenue.

1.4.8 Segment 5

Segment 5 New Jersey Avenue SE between M Street SE and D Street, SE. An enhanced streetscape would be provided along New Jersey Avenue SE between M Street SE and D Street, SE. Within the segment between M Street SE and I-695, the full 160-foot right-of-way would be restored.

2.0 Affected Environment

Air pollution is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere. Individual air pollutants degrade the atmosphere by reducing visibility, damaging property, reducing the productivity or vigor of crops or natural vegetation, or reducing human or animal health.

2.1 Clean Air Act Amendments of 1990

The Clean Air Act Amendments of 1990 (CAAA) and the Final Transportation Conformity Rule (40 CFR Parts 51 and 93) direct the US Environmental Protection Agency (USEPA) to implement environmental policies and regulations that will ensure acceptable levels of air quality.

The Clean Air Act and the Final Transportation Conformity Rule affect proposed transportation projects. According to Title I, Section 176 (c) 2:

> "No federal agency may approve, accept or fund any transportation plan, program or project unless such plan, program, or project has been found to conform to any applicable State Implementation Plan (SIP) in effect under this act."

The Final Conformity Rule defines conformity as follows:

> "Conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of such standards; and that such activities will not:
>
> - cause or contribute to any new violation of any NAAQS in any area;
> - increase the frequency or severity of any existing violation of any NAAQS in any area; or
> - delay timely attainment of any NAAQS or any required interim emission reductions or other milestones in any area."

2.2 National and State Ambient Air Quality Standards

As required by the Clean Air Act of 1970 (CAA), NAAQS have been established for six major air pollutants. These pollutants, known as criteria pollutants, are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb).

The federal standards are summarized in Table 1. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.

Table 1: National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide		primary	8-hour	9ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead		primary and secondary	Rolling 3 month average	0.15 $\mu g/m^3$ (1)	Not to be exceeded
Nitrogen Dioxide		primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		primary and secondary	Annual	53 ppb (2)	Annual Mean
Ozone		primary and secondary	8-hour	0.075 ppm (3)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution	$PM_{2.5}$	primary	Annual	12 $\mu g/m^3$	Annual mean, averaged over 3 years
		secondary	Annual	15 $\mu g/m^3$	Annual mean, averaged over 3 years
		primary and secondary	24-hour	35 $\mu g/m^3$	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24-hour	150 $\mu g/m^3$	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide		primary	1-hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: USEPA Office of Air and Radiation, http://www.epa.gov/air/criteria.html

(1) Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

(2) The official level of the annual NO2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

(3) Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard ("anti-backsliding"). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.

(4) Final rule signed June 2, 2010. The 1971 annual and 24-hour SO2 standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

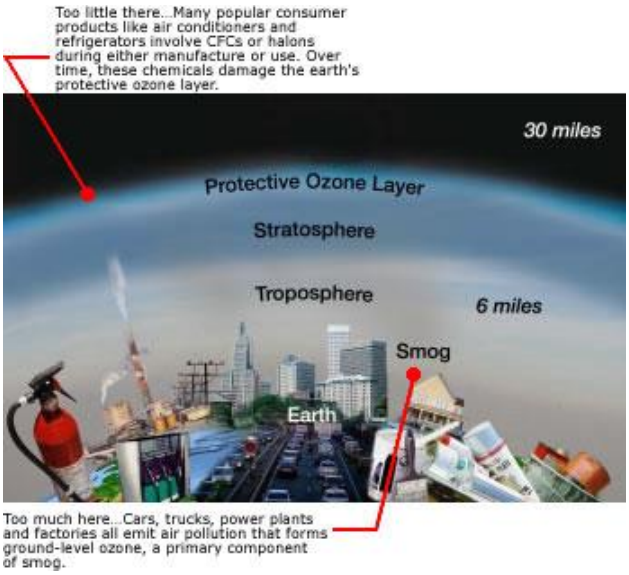
Abbreviations: ppm = parts per million, $\mu g/m^3$ = micrograms per cubic meter.

2.3 Criteria Pollutants and Effects

The sources of the criteria pollutants, their effects on human health and the nation's welfare, and their final deposition in the atmosphere vary considerably. A brief description of each of the six pollutants is given below.

2.3.1 Ozone

Ozone (O_3) is a colorless, toxic gas. As shown in Figure 3, O_3 is found in both the Earth's upper and lower atmospheric levels. In the upper atmosphere, O_3 is a naturally occurring gas that helps to prevent the sun's harmful ultraviolet rays from reaching the earth. In the lower layer of the atmosphere, O_3 is man-made. Although O_3 is not directly emitted, it forms in the lower atmosphere through a chemical reaction between reactive organic gases (ROG), also referred to as volatile organic compounds (VOCs), and nitrogen oxides (NOx), which are emitted from industrial sources and from automobiles. As shown in Figure 4 and Figure 5, mobile sources are primary significant source of O_3 precursors (VOCs and NOx) in the Washington D.C. area.



Source: www.epa.gov/oar/oaqps/gooduphigh/good.html

Figure 3: Ozone in the Atmosphere

Substantial O_3 formations generally require a stable atmosphere with strong sunlight, thus high levels of O_3 are generally a concern in the summer. O_3 is the main ingredient of smog. O_3 enters the blood stream through the respiratory system and interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen. O_3 also damages vegetation by inhibiting its growth.

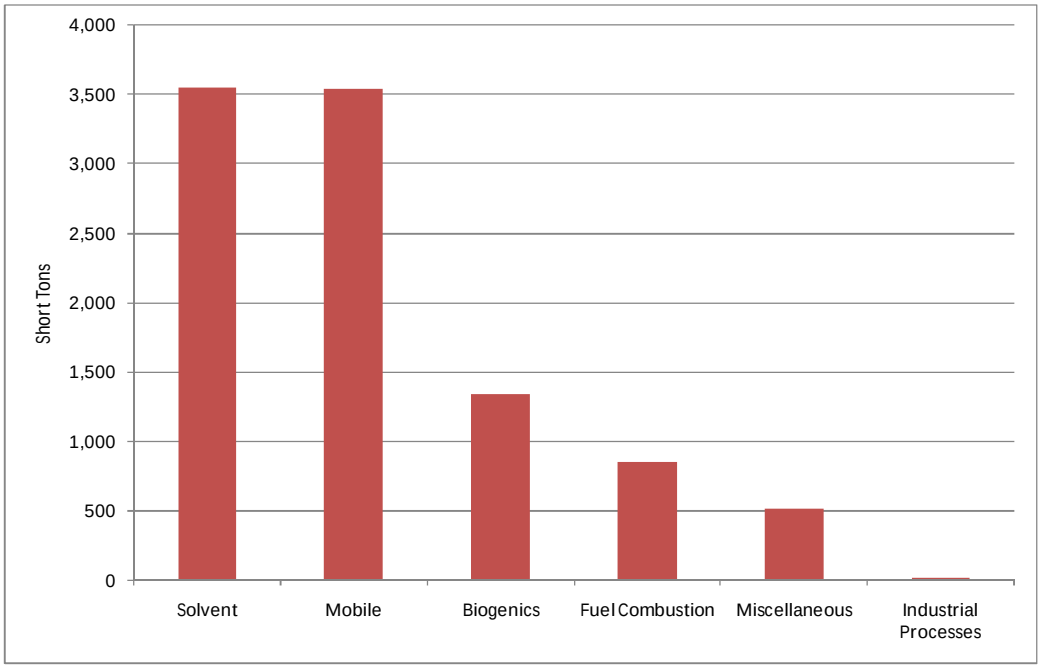


Figure 4: Sources of VOCs – District of Columbia (2011)

Source: http://www.epa.gov/air/emissions/index.htm

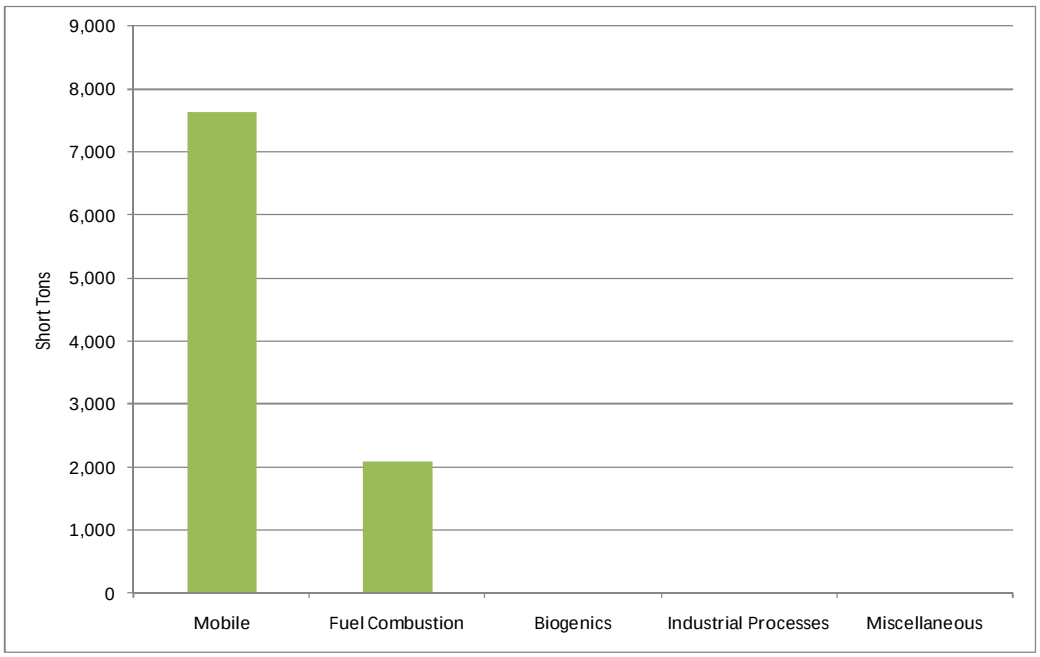


Figure 5: Sources of NOx – District of Columbia (2011)

Source: *http://www.epa.gov/air/emissions/index.htm*

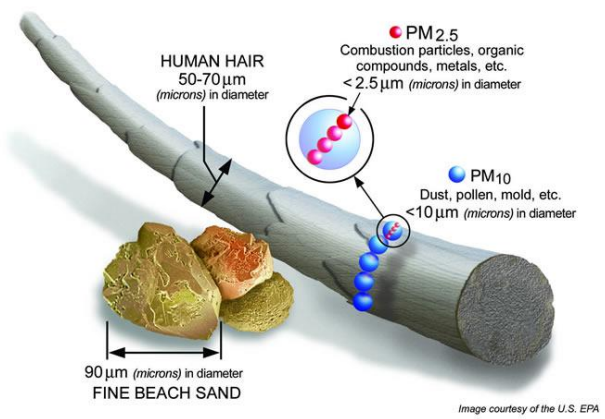
2.3.2 Particulate Matter

Particulate pollution is composed of solid particles or liquid droplets that are small enough to remain suspended in the air. In general, particulate pollution can include dust, soot, and smoke; these can be irritating but usually are not poisonous.

Particulate pollution also can include bits of solid or liquid substances that can be highly toxic. Of particular concern are those particles that are smaller than, or equal to, 10 microns (PM_{10}) and 2.5 microns ($PM_{2.5}$) in size.

PM_{10} refers to particulate matter less than 10 microns in diameter, about 1/7th the thickness of a human hair (Figure 6). Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when industry and gases emitted from motor vehicles undergo chemical reactions in the atmosphere. Major sources of PM_{10} include motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Suspended particulates produce haze and reduce visibility.

Data collected through numerous nationwide studies indicate most PM_{10} comes from fugitive dust, wind erosion, and/or agricultural and forestry sources. A small portion of particulate matter is the product of fuel combustion processes. In the case of $PM_{2.5}$, the combustion of fossil fuels accounts for a significant portion of this pollutant. The main health effect of airborne particulate matter is on the respiratory system. $PM_{2.5}$ refers to particulates that are 2.5 microns or less in diameter, roughly 1/28th the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur dioxide, nitrogen oxides, and volatile organic compounds. Like PM_{10}, $PM_{2.5}$ can penetrate the human respiratory system's natural defenses and damage the respiratory tract when inhaled. Whereas, particles 2.5 to 10 microns in diameter tend to collect in the upper portion of the respiratory system, particles 2.5 microns or less are small enough that they can penetrate deeper into the lungs and damage lung tissues. Figure 7 and Figure 8 show the sources of particulate matter in the Washington D.C area.



Source: EPA Office of Research and Development

Figure 6: Relative Particulate Matter Size

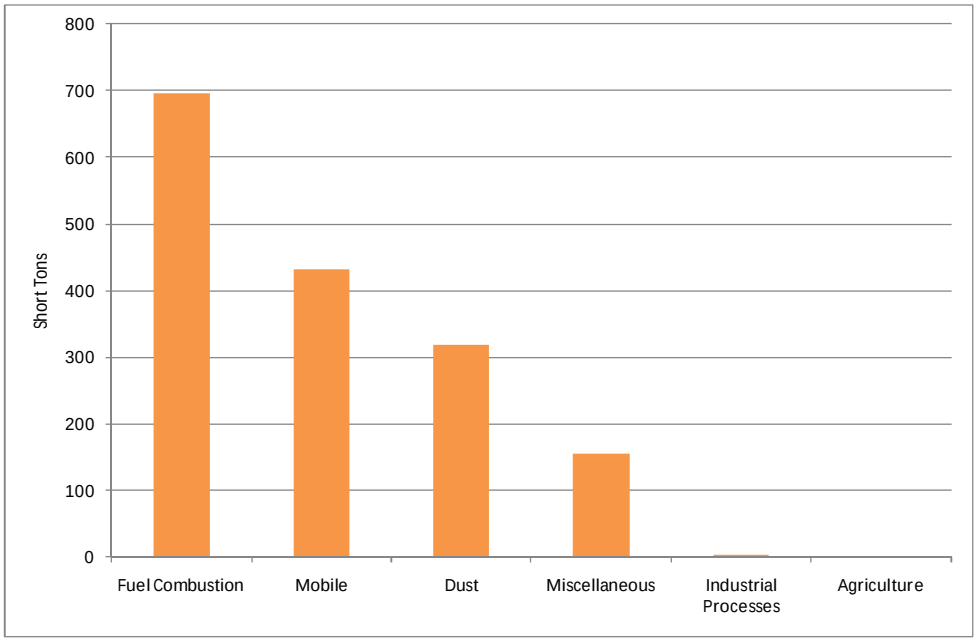


Figure 7: Sources of $PM_{2.5}$ – District of Columbia (2011)

Source: http://www.epa.gov/air/emissions/index.htm

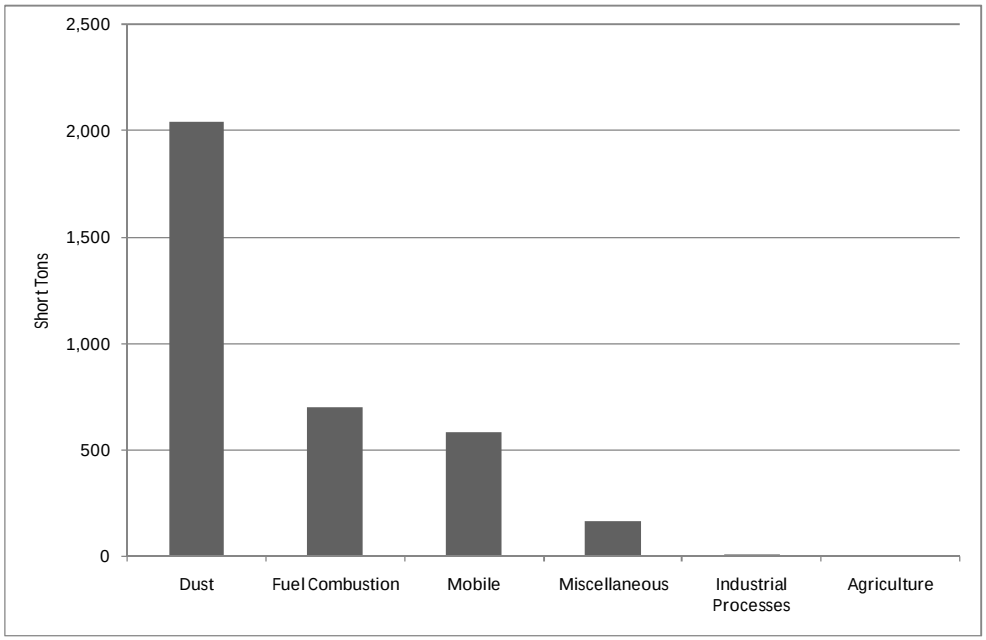


Figure 8: Sources of PM_{10} – District of Columbia (2011)

Source: *http://www.epa.gov/air/emissions/index.htm*

2.3.3 Carbon Monoxide

Carbon monoxide (CO), a colorless gas, interferes with the transfer of oxygen to the brain. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. As shown in Figure 9, on-road motor vehicle exhaust is the primary source of CO in the Washington D.C. area. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Prolonged exposure to high levels of CO can cause headaches, drowsiness, loss of equilibrium, or heart disease. CO levels are generally highest in the colder months of the year when inversion conditions (warmer air traps colder air near the ground) are more frequent. CO concentrations can vary greatly over relatively short distances. Relatively high concentrations of CO are typically found near congested intersections, along heavily used roadways carrying slow-moving traffic, and in areas where atmospheric dispersion is inhibited by urban "street canyon" conditions. Consequently, CO concentrations must be predicted on a localized, or microscale, basis.

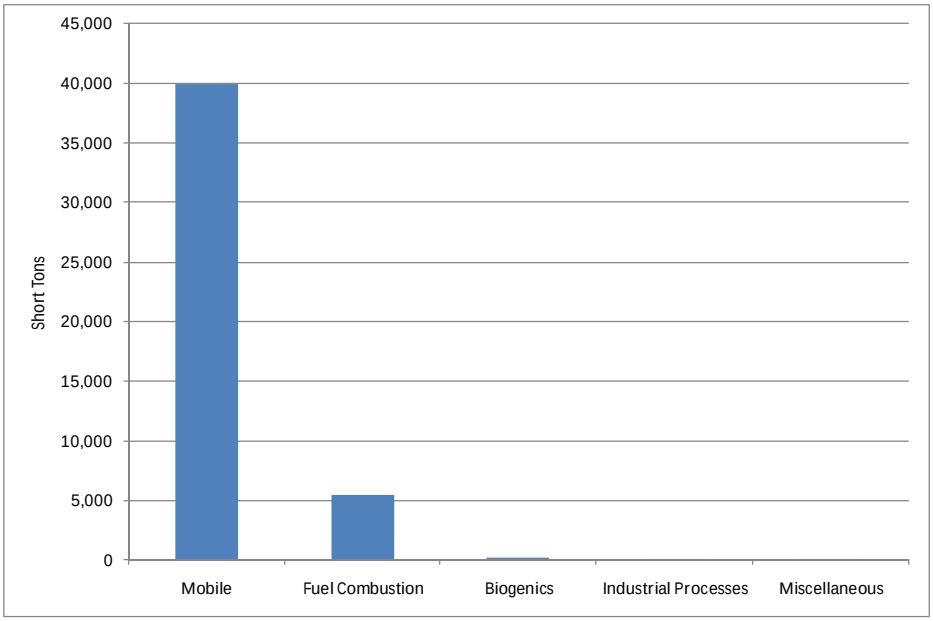


Figure 9: Sources of CO – District of Columbia (2011)

Source: http://www.epa.gov/air/emissions/index.htm

2.3.4 Nitrogen Dioxide

Nitrogen dioxide (NO_2), a brownish gas, irritates the lungs. It can cause breathing difficulties at high concentrations. Like O_3, NO_2 is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as nitrogen oxides (NOx) and are major contributors to ozone formation. NO_2 also contributes to the formation of PM_{10}, small liquid and solid particles that are less than 10 microns in diameter (see discussion of PM_{10} below). At atmospheric concentration, NO_2 is only potentially irritating. In high concentrations, the result is a brownish-red cast to the atmosphere and reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in

children (two and three years old) has also been observed at concentrations below 0.3 parts per million (ppm).

2.3.5 Lead

Lead (Pb) is a stable element that persists and accumulates both in the environment and in animals. Its principal effects in humans are on the blood-forming, nervous, and renal systems. Lead levels in the urban environment from mobile sources have significantly decreased due to the federally mandated switch to lead-free gasoline.

2.3.6 Sulfur Dioxide

Sulfur dioxide (SO_2) is a product of high-sulfur fuel combustion. The main sources of SO_2 are coal and oil used in power stations, industry and for domestic heating. Industrial chemical manufacturing is another source of SO_2. SO_2 is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and erode iron and steel.

2.4 Mobile Source Air Toxics

In addition to the criteria pollutants, USEPA also regulates air toxics. Most air toxics originate from human made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the CAA. The MSATs are compounds emitted from highway vehicles and non-road mobile equipment. Some toxic compounds are present in fuel and are emitted into the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The USEPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/ncea/iris/index.html). In addition, USEPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are:

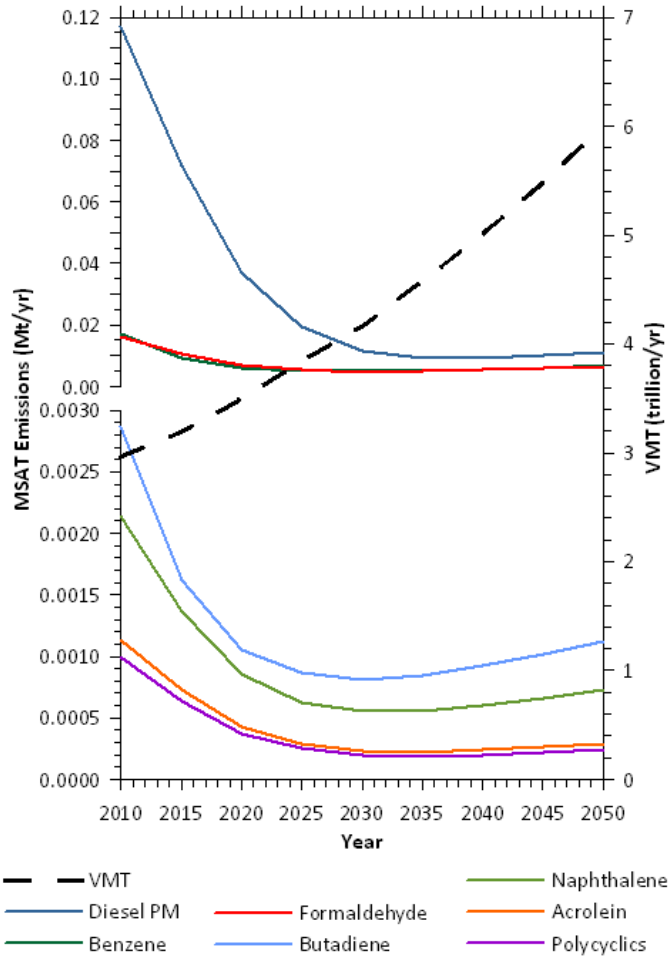
- **Benzene –** characterized as a known human carcinogen.
- **Acrolein –** the potential carcinogenicity of acrolein cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde –** a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.

- **1,3-butadiene –** characterized as carcinogenic to humans by inhalation.
- **Diesel Exhaust** (DE) **–** likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases. Diesel exhaust also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis.
- **Naphthalene –** the USEPA has classified naphthalene as a possible human carcinogen. Acute exposure of humans to naphthalene by inhalation, ingestion, and dermal contact is associated with hemolytic anemia, damage to the liver, and neurological damage. Cataracts have also been reported in workers acutely exposed to naphthalene by inhalation and ingestion.
- **Polycyclic Organic Matter (POM) –** defines a broad class of compounds that includes the polycyclic aromatic hydrocarbon compounds (PAHs), of which benzo[a]pyrene is a member. Cancer is the major concern from exposure to POM. The USEPA has classified seven PAHs (benzo[a]pyrene, benz[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]pyrene) as probable human carcinogens.

While FHWA considers these the priority MSATs, the list is subject to change and may be adjusted in consideration of future USEPA rules.

The USEPA is the lead federal agency for administering the CAA and has certain responsibilities regarding the health effects of MSATs. The USEPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources (66 Federal Register 17229, March 29, 2001). This rule was issued under the authority in Section 202 of the CAA. In its rule, USEPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline program, its national low emission vehicle standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel requirements. According to an FHWA analysis, future emissions likely would be lower than present levels as result of the USEPA's national control programs that are projected to reduce MSAT emission by 83 percent from 2010 to 2050, even if VMT increases by 102 percent, as shown in Figure 10.

On February 9, 2007 and under authority of CAA Section 202(l), USEPA signed a Final Rule, Control of Hazardous Air Pollutants from Mobile Sources, which sets standards to control MSATs from motor vehicles. Under this rule, USEPA is setting standards on fuel composition, vehicle exhaust emissions, and evaporative losses from portable containers. The new standards are estimated to reduce total emissions of MSATs by 330,000 tons in 2030, including 61,000 tons of benzene. Concurrently, total emissions of volatile organic compounds (VOCs) will be reduced by over 1.1 million tons in 2030 as a result of adopting these standards.



Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

Source: FHWA's *Interim Guidance Update on Air Toxic Analysis in NEPA Documents* (FHWA, 2012) - EPA MOVES2010b model runs conducted during May - June 2012 by FHWA.

Figure 10: National MSAT Emission Trends 2010 – 2050 for Vehicles Operating on Roadways Using USEPA's MOVES2010b Model

2.5 Greenhouse Gases

In 2007, the Supreme Court decided in *Commonwealth of Massachusetts v. Environmental Protection Agency* that carbon dioxide is a pollutant, subject to regulation under the Clean Air Act. Since then, the federal government has taken a number of steps to regulate carbon dioxide emissions as part of an overall program addressing greenhouse gases (GHG). Thus, for example, EPA has adopted a Greenhouse Gas Monitoring, Recordkeeping and Reporting Rule requiring certain suppliers of fossil fuels or

industrial greenhouse gases to report to EPA on emissions from particular facilities. That rule does not apply to the activities contemplated by this Project.

Also, a number of federal agencies have concluded that it is not possible to link a project's emissions to particular climatic effects in a NEPA review. In particular, the 2010 Draft Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions, authored by the Council on Environmental Quality, states that "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions, as such direct linage is difficult to isolate and to understand."

Some greenhouse gases, such as carbon dioxide, occur naturally and are emitted to the atmosphere through natural processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities include:

- Carbon Dioxide (CO_2);
- Methane (CH_4);
- Nitrous Oxide (N_2O); and
- Fluorinated Gases**.**

For transportation projects involving fossil fuel consumption, CO_2 is the predominant GHG emitted.

2.6 Attainment Status and Conformity with Regional Air Quality Planning

Section 107 of the 1977 CAAA requires that the USEPA publish a list of all geographic areas in compliance with the NAAQS, as well as those that are not in attainment of the NAAQS. The designation of an area is made on a pollutant-by-pollutant basis. The USEPA's area designations are shown in Table 2.

Table 2: Attainment Classifications and Definitions

Classification	Definition
Attainment	Area is in compliance with the NAAQS.
Unclassified	Area has insufficient data to make determination and is treated as being in attainment.
Maintenance	Area once classified as nonattainment but has since demonstrated attainment of the NAAQS.
Nonattainment	Area is not in compliance with the NAAQS.

The South Capitol Street project area is classified as a maintenance area for CO, a nonattainment area for $PM_{2.5}$ (for the 1997 standard), a marginal nonattainment area for O_3, and an attainment area for all other criteria pollutants.

The CAA requires that a State Implementation Plan (SIP) be prepared for each nonattainment area and a maintenance plan be prepared for each former nonattainment area that subsequently demonstrated compliance with the standards. A SIP is a compilation of a state's air quality control plans and rules that are approved by USEPA. Section 176(c) of the CAA provides that federal agencies cannot engage, support, or provide financial assistance for licensing, permitting, or approving any project unless the project conforms to the applicable SIP. The state and USEPAs' goals are to eliminate or reduce the severity and number of violations of the NAAQS and to achieve expeditious attainment of these standards.

The District of Columbia is part of the Metropolitan Washington Council of Governments (MWCOG), a regional organization of Washington area local governments. MWCOG is composed of 20 local governments surrounding the nation's capital, plus area members of the Maryland and Virginia legislatures, the US Senate and the US House of Representatives. Among other responsibilities, the MWCOG provides daily reports and forecasts of regional air quality. Through the MWCOG, the Metropolitan Washington Air Quality Committee (MWAQC) prepares the air quality plan for the District of Columbia, Maryland and Virginia metropolitan area as regulated under Section 174 of the CAA. The Transportation Planning Board (TPB), housed within the MWCOG, is the organization that brings together key decision makers to coordinate planning and funding for the region's transportation system. TPB members include local officials, representatives of state transportation agencies, the Washington Metropolitan Area Transit Authority (WMATA), state legislators, and others. The TPB is designated as a Metropolitan Planning Organization (MPO) and is therefore responsible for meeting federal metropolitan planning requirements for transportation. The TPB is staffed by the MWCOG.

The TPB produces two basic documents. The first is the *Financially Constrained Long-Range Transportation Plan* (CLRP) which includes all major transportation projects and programs that are planned in the Washington region over the next 25 years. The second document, the *Transportation Improvement Plan* (TIP), lists projects and programs that will be funded in the next six years. The CLRP and the TIP serve as the basis for the regional mobile source air quality analysis, which utilizes vehicle miles traveled (VMT) and emissions factors to determine emissions estimates for the entire transportation system. The analysis results, presented under the Transportation Conformity Rule, demonstrate that the plan and the TIP are consistent with the goals of the *State Implementation Plan* (SIP). The SIP includes a list of measures to reduce pollution in order for the area to become attainment by a designated date.

The South Capitol Street Project is listed in the 2010 CLRP (Project ID 1143), which was approved by TPB on November 17, 2010 and by the USDOT on February 9, 2011; the 2012 CLRP which was approved by TPB on July 18, 2012 and by the USDOT on May 30, 2013; and the 2013 CLRP, which was approved by TPB on July 17, 2013 and by the USDOT on January 22, 2014. The South Capitol Street Project is listed in the Washington Metropolitan Region's Fiscal Year 2005-2010 TIP (approved by TPB on November 17, 2004, USDOT on June 14, 2005), the FY 2006-2011 TIP (approved by TPB on October 19, 2005, USDOT on February 21, 2006), the FY 2007-2012 TIP (approved by TPB on October 18, 2006, USDOT on April 6, 2007), the FY 2008-2013 TIP (approved by TPB January 16, 2008, USDOT on June 11, 2008), and the FY 2009-2014 TIP (approved by TPB November 19, 2008, USDOT on February 17, 2009), the FY2010-2015 TIP

(approved by TPB on July 15, 2009, USDOT on January 28, 2010) and the FY 2011-2016 TIP (approved by TPB on November 17, 2010, USDOT on February 9, 2011) and the FY 2013-2018 TIP (approved by TPB on July 18, 2012, USDOT on May 30, 2013), where it is identified as TIP ID # 3423.

The Project comes from a conforming transportation plan and TIP that conforms with the SIP's purpose. MWAQC and TPB develop an Air Quality Conformity Report, which contains emissions ceilings (called "mobile emissions budgets") to which the TIP must conform. The analysis of the FY 2013-2018 TIP and the 2013 CLRP, which both include the South Capitol Street project. . The analysis in the Air Quality Conformity Report demonstrates that mobile source emissions, estimated for the TIP and for each analysis year of the long range plan, adhere to all carbon monoxide, ozone season volatile organic compound and nitrogen oxide, and fine particle (PM 2.5) pollutants (direct 2.5 and precursor nitrogen oxide) emissions budgets established by the Metropolitan Washington Air Quality Committee (MWAQC), which are either approved or under review by the USEPA. Additionally, the "action scenario" (forecast year) emissions for fine particles are not greater than the base year 2002 emissions, thus satisfying the requirement for pollutants without an established budget. These results provide a basis for a determination of conformity of the 2013 CLRP and the FY2013-2018 TIP.

2.7 Ambient Air Quality in the Project Area

2.7.1 Local Meteorology

The nature of the surrounding atmosphere is an important element in assessing the ambient air quality of an area. Summers in the District of Columbia area are warm and humid and winters are cold, but generally not severe. The summertime temperature is in the upper 80s and the winter is in the upper 20s. Thunderstorms can occur at any time but are most frequent during the late spring and summer. Annual precipitation has ranged from about 25 inches to more than 55 inches. Rainfalls of over 10 inches in a 24-hour period have been recorded during the passage of tropical storms. The seasonal snowfall is nearly 24 inches, but varies greatly from season to season. Snowfalls of 4 inches or more occur only twice each winter on average. Accumulations of over 20 inches from a single storm are extremely rare. Storm damage results mainly from heavy snows and freezing rains in winter and from hurricanes and severe thunderstorms during the other seasons.

Precipitation helps cleanse the atmosphere of pollutants. Very small particles in the atmosphere act as condensation nuclei, triggering the formation of raindrops, while larger particles are literally washed from the air during precipitation events. Precipitation also prevents the drying of the ground, alleviating the formation of fugitive dust; however, precipitation can combine with the oxides of sulfur and nitrogen to produce another form of pollution, namely acid rain.

Prevailing winds are from the south except during the winter months when they are from the northwest. The windiest periods are late winter and early spring. Winds are generally less during the night and early morning hours and increase to a high in the afternoon. Winds may reach 50 to 60 miles per hour or even higher during severe summer

thunderstorms, hurricanes, and winter storms. Wind speed direction and variability greatly influence on the dispersion of atmospheric pollutants.

2.7.2 Monitored Air Quality

MWCOG collects and distributes air quality data from monitors located throughout the District of Columbia. Five air quality monitors are located within the District of Columbia. The monitored air quality data collected from these locations for the years 2010-2012 is summarized and presented in Table 3.

Table 3: Ambient Air Quality Monitor Data 2010-2012

Pollutant		Verizon Phone Co. 2055 L St., NW			Riverside 420 34th St. NE			Takoma School, Piney Branch Road & Dahlia Street			2500 1st Street, N.W.			Park Services Office, 1100 Ohio Drive		
Carbon Monoxide (CO) [ppm]		**2010**	**2011**	**2012**	**2010**	**2011**	**2012**	**2010**	**2011**	**2012**	**2010**	**2011**	**2012**	**2010**	**2011**	**2012**
1-Hour	Maximum	2.8	5.0	2.5	3.7	2.7	2.9					3.1	2.5			
	2nd Maximum	2.7	4.2	2.2	3.7	2.7	2.9					3.0	2.4			
	# of Exceedences	0	0	0	0	0	0					0	0			
8-Hour	Maximum	2.4	2.2	2.0	3.5	2.5	2.8					2.5	1.9			
	2nd Maximum	2.0	1.9	1.9	3.1	2.3	2.5					2.4	1.8			
	# of Exceedences	0	0	0	0	0	0					0	0			
Particulate Matter [ug/m^3]																
PM_{10}	Maximum 24-Hour				91	52					99	45	42			
	# of Exceedences				0	0					0	0	0			
$PM_{2.5}$	98th Percentile				28	25	28				26	25	24	23	26	24
	Mean Annual				11.4	10.4	9.8				10.5	10.3	9.6	11.0	10.2	9.8
	# of Exceedences				0	0	0				0	0	0	0	0	0
Ozone (O_3) [ppm]																
8-Hour	Fourth Highest				0.086	0.080	0.076	0.079			0.082	0.085	0.087			
	# of Exceedences				15	6	4	6			16	11	11			
Nitrogen Dioxide (NO_2) [ppb]																
1-Hour	98th Percentile				59	55	51	55			57	52	50			
	# of Exceedences				0	0	0	0			0	0	0			
Sulfur Dioxide (SO_2) [ppb]																
1-Hour	99th Percentile				21	20						5				
	# of Exceedences				0	0						0				

Source: USEPA Office of Air Quality Planning and Standards (AIRSData); http://www.epa.gov/airquality/airdata/ad_reports.html
Note: Grey shaded blocks represent areas of no measurement.

3.0 Environmental Consequences

3.1 Sources of Emissions

Pollutants that can be traced principally to motor vehicles are relevant to the evaluation of the project impacts; these pollutants include carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NOx), ozone (O_3), particulate matter of 10 microns (PM_{10}) and 2.5 microns ($PM_{2.5}$) and MSATs. Transportation sources account for a small percentage of regional emissions of sulfur oxides (SOx) and lead (Pb); thus, a detailed analysis is not required.

HCs (also known as volatile organic compounds [VOCs]) and NO_x emissions from automotive sources are a concern primarily because they are precursors to the formation of ozone (O_3) and particulate matter (PM). Ozone is formed through a series of reactions that occur in the atmosphere in the presence of sunlight. Since the reactions are slow and occur as the pollutants diffuse downwind, elevated ozone levels often are found many miles from sources of the precursor pollutants. Therefore, the effects of HC and NO_x emissions generally are examined on a regional or "mesoscale" basis.

PM_{10} and $PM_{2.5}$ impacts are both regional and local. A substantial portion of particulate matter, especially PM_{10}, comes from disturbed vacant land, construction activity and paved road dust. $PM_{2.5}$ also comes from these sources. Motor vehicle exhaust, particularly from diesel vehicles, is also a source of PM_{10} and $PM_{2.5}$. PM_{10}, and especially $PM_{2.5,}$ can also be created by secondary formation from precursor elements such as SO_2, NO_X, VOCs, and ammonia (NH_3). Secondary formation occurs due to chemical reactions in the atmosphere, which are generally downwind some distance from the original emission source. Thus, it is appropriate to predict concentrations of PM_{10} and $PM_{2.5}$ on both a regional and a localized basis.

CO impacts are generally localized. Even under the worst meteorological conditions and most congested traffic conditions, high concentrations are limited within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle emissions are the major sources of CO. The South Capitol Street Project could change traffic patterns within the project area. Consequently, it is appropriate to predict concentrations of CO on both a regional and a localized or "microscale" basis.

The MSAT impacts are both regional and local. Through the issuance of USEPA's Final Rule regarding emission control of Hazardous Air Pollutants from Mobile Sources [66 FR 17229], it was determined that many existing and newly promulgated mobile source emission control programs would result in a reduction of MSATs. The USEPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline program, its national low emission vehicle standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel requirements. Future emissions likely would be lower than present levels as result of the USEPA's national control programs that are projected to reduce MSAT emission by 83 percent from 2010 to 2050 even if VMT increases by 102 percent.

3.2 Analysis Methodology

3.2.1 Regional Analysis

The regional or mesoscale analysis of a project determines a project's overall impact on air quality levels beyond the immediate project area. A transportation project is analyzed as part of a regional transportation network developed by the County or State. Projects included in this network are found in the *Financially Constrained Long-Range Transportation Plan* (CLRP) and the *Transportation Improvement Plan* (TIP). The CLRP and the TIP are the basis for the regional analysis which utilizes VMT and vehicle hours traveled (VHT) within the region to determine daily "pollutant burden" levels. The results of this analysis determine if an area is in conformity with regulations set forth in the USEPA's Final Conformity Rule.

This project comes from a conforming transportation plan and TIP that conforms with the SIP's purpose. MWAQC and TPB develop an Air Quality Conformity Report, which contains emissions ceilings (called "mobile emissions budgets") to which the TIP must conform. The analysis of the FY 2013-2018 TIP and the 2013 CLRP, which both include the South Capitol Street project, was approved by the TPB on July 18, 2012 and July 17, 2013, respectively; and by the USDOT on May 30, 2013 and January 22, 2014, respectively. The analysis in the Air Quality Conformity Report demonstrates that mobile source emissions, estimated for the TIP and for each analysis year of the long range plan, adhere to all carbon monoxide, ozone season, volatile organic compound, and nitrogen oxide, and fine particle (PM 2.5) pollutants (direct 2.5 and precursor nitrogen oxide) emissions budgets established by the MWAQC, which are either approved or under review by the USEPA. As such, the Project's regional air quality has been found to conform with the goals of the SIP. To demonstrate the Project's regional impact, a regional analysis based on overall regional VMT and VHT has been conducted.

3.2.2 Particulate Matter (PM_{10} & $PM_{2.5}$) Analysis

In March 10, 2006, the USEPA issued a Final Rule regarding the localized or "hot-spot" analysis of $PM_{2.5}$ and PM_{10} (40 CFR Part 93). This rule requires that a $PM_{2.5}$ and/or PM_{10} hotspot analysis be performed only for transportation projects with substantial diesel traffic in areas not meeting $PM_{2.5}$ and/or PM_{10} air quality standards. The project area is classified as an attainment area for $PM_{10.}$ As such, a hotspot analysis is not required. The project area is classified as a nonattainment area for $PM_{2.5}$. As such, it must be determined if the project is classified as one of air quality concern, thus requiring a quantitative analysis. This evaluation will be determined following the USEPA's November 2013 guidance "*Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (EPA420-B-13-053).

3.2.3 MSAT Analysis

On February 3, 2006, the FHWA released *Interim Guidance on Air Toxic Analysis in NEPA Documents.* This guidance was superseded on December 6, 2012 by FHWA's *Interim Guidance Update on Air Toxic Analysis in NEPA Documents.* The purpose of FHWA's guidance is to advise on when and how to analyze Mobile Source Air Toxics

(MSATs) in the NEPA process for highways. This guidance is interim, because MSAT science is still evolving. As the science progresses, FHWA will update the guidance.

A quantitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The quantitative assessment presented is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives* (FHWA, 2006b). The FHWA's Interim Guidance groups projects into the following tier categories:

1. No analysis for projects without potential for meaningful MSAT effects.
2. Qualitative analysis for projects with low potential MSAT effects.
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

3.2.4 Microscale CO Air Quality Analysis

Microscale air quality modeling was performed using the most recent version of the USEPA mobile source emission factor model (MOVES2010b) and the CAL3QHC (Version 2.0) air quality dispersion model to estimate future No Build Alternative and future Build Alternative CO levels at selected locations in the project area.

3.2.4.1. Dispersion Model

Mobile source models are the basic analytical tools used to estimate CO concentrations expected under given traffic, roadway geometry, and meteorological conditions. The mathematical expressions and formulations that comprise the various models attempt to describe an extremely complex physical phenomenon as closely as possible. The dispersion modeling program used in this project for estimating pollutant concentrations near roadway intersections is the CAL3QHC (Version 2.0) dispersion model developed by the USEPA and released in 1992.

CAL3QHC is a Gaussian model recommended in the *USEPA Guidelines for Modeling Carbon Monoxide from Roadway Intersections* (EPA-454/R-92-005). Gaussian models assume that the dispersion of pollutants downwind of a pollution source follow a normal distribution from the center of the pollution source.

Different emission rates occur when vehicles are stopped (idling), accelerating, decelerating, and moving at different average speeds. CAL3QHC simplifies these different emission rates into two components:

- Emissions when vehicles are stopped (idling) during the red phase of a signalized intersection.
- Emissions when vehicles are in motion during the green phase of a signalized intersection.

The CAL3QHC (Version 2.0) air quality dispersion model has undergone extensive testing by the USEPA and has been found to provide reliable estimates of inert (nonreactive) pollutant concentrations resulting from motor vehicle emissions. A complete description of the model is in the *User's Guide to CAL3QHC (Version 2.0): A Modeling Methodology for Predicting Pollutant Concentrations near Roadway Intersections* (EPA-454/R-92-006).

3.2.4.2. Vehicular Emissions

Emission factors were developed using the latest version of USEPA's Motor Vehicle Emission Simulator (MOVES), MOVES2010b. MOVES2010b is the USEPA's state-of-the-art tool for estimating emissions from highway vehicles. The model is based on analyses of millions of emission test results and considerable advances in the agency's understanding of vehicle emissions. Compared to previous tools, MOVES2010b incorporates the latest emissions data, more sophisticated calculation algorithms, increased user flexibility, new software design, and significant new capabilities. Input parameters for MOVES2010b were obtained from MWCOG.

3.2.4.3. Site Selection and Receptor Locations

A screening evaluation was performed to identify which intersections in the project area are most congested and would be most affected by the SEIS Preferred Alternative. Eighty-four locations, listed in Table 4, were screened based on changes in intersection volumes, delay, and Levels of Service (LOS) from No Build to the SEIS Preferred Alternative. Sites fail the screening evaluation if the Level of Service decreases below D in one of the Build Alternatives as compared to the No Build Alternative, or if the delay and/or volume increase from the No Build Alternative to Build Alternative along with a LOS below D.

Sixteen of the 84 locations failed the screening analysis, including:

1. West Oval and Southbound (SB) South Capitol St Entrance
2. West Oval and R St Entrance
3. West Oval and SB South Capitol St Exit
4. West Oval and Northbound (NB) South Capitol St Entrance
5. South Capitol St and N St SW
6. South Capitol St and M St
7. South Capitol St and Firth Sterling Ave
8. Suitland Pkwy and Firth Sterling Ave
9. Suitland Pkwy and Stanton Rd
10. 11th St and O St
11. 11th St and Southeast-Southwest (SE-SW) Freeway Blvd
12. Suitland Pkwy and I-295 SB Ramps

13. East Oval and NB South Capitol St
14. East Oval and SB South Capitol St Entrance
15. East Oval and NB Suitland Pkwy
16. East Oval and Poplar Point Access Rd

Based on the screening analysis, geographical representation and community concerns, 10 analysis locations were chosen for detailed analysis. Due to the proximity of locations that failed the screening analysis to each other, some of the 10 analysis locations include more than one intersection. The sites chosen for detailed analysis, as shown in Figure 11, are:

1. Southbound I-395 and Ramp to SE-SW Freeway
2. North Carolina Avenue SE and 1st Street SE
3. M Street and South Capitol Street
4. N Street and South Capitol Street
5. South Capitol Street West Oval at Potomac Avenue
6. South Capitol Street West Oval at bridge leg, including Q street Potomac Avenue, west leg and South Capitol Street
7. South Capitol Street at East Oval including Howard Road and Suitland Parkway
8. Defense Road, Firth Sterling Avenue, South Capitol Street (including Stevens Road in the Build scenario)
9. SB I-295 Off Ramp and Suitland Parkway
10. NB I-295 off ramp to Suitland Parkway, and Firth Sterling Avenue

Table 4: Air Quality Microscale Screening Analysis

#	Intersection	2040 SFEIS No Build						2040 SFEIS Build					
		AM			PM			AM			PM		
		Delay	LOS	Volume	Delay	LOS	Volume	Delay	LOS	Volume	Delay	LOS	Volume
1	7th St and Capitol Square Pl/ I-395 Ramp	7.6	A	1505	2.5	A	1300	7.6	A	1505	2.5	A	1300
2	7th St and Frontage Rd	20.0	B	1835	16.9	B	1355	20.0	B	1835	16.7	B	1355
3	7th St and E St	2.8	A	1785	2.9	A	980	2.8	A	1785	2.9	A	980
4	South Capitol St and Potomac Ave	64.2	E	6705	218.4	F	6390	N/A	N/A	N/A	N/A	N/A	N/A
5	West Oval and NB South Capitol St Exit	N/A	N/A	N/A	N/A	N/A	N/A	23.8	C	5245	3.2	A	4865
6	West Oval and SB South Capitol St Entrance	N/A	N/A	N/A	N/A	N/A	N/A	120.4	F	3145	206.4	F	4010
7	West Oval and WB Potomac Ave Exit	N/A	N/A	N/A	N/A	N/A	N/A	3.7	A	885	3.1	A	560
8	West Oval and R St Entrance	N/A	N/A	N/A	N/A	N/A	N/A	5.1	A	2460	92.8	F	4545
9	West Oval and SB South Capitol St Exit	N/A	N/A	N/A	N/A	N/A	N/A	114.0	F	6520	23.5	C	6725
10	West Oval and NB South Capitol St Entrance	N/A	N/A	N/A	N/A	N/A	N/A	234.2	F	4340	29.7	C	2670
11	West Oval and Potomac Ave	N/A	N/A	N/A	N/A	N/A	N/A	47.1	D	4700	14.1	B	3195
12	South Capitol St and P St SW	3.4	A	5715	12.6	B	5190	5.3	A	5320	9.0	A	5020
13	South Capitol St and O St SW	0.4	A	5650	0.2	A	4985	6.1	A	5355	6.8	A	4845
14	South Capitol St and N St SW	24.0	C	5745	29.6	C	5055	60.6	E	5590	16.8	B	4950
15	South Capitol St SB and M St	33.6	C	3240	25.7	C	3870	N/A	N/A	N/A	N/A	N/A	N/A
16	South Capitol St NB and M St	55.3	E	3500	46.0	D	3885	N/A	N/A	N/A	N/A	N/A	N/A
17	South Capitol St and M St	N/A	N/A	N/A	N/A	N/A	N/A	104.7	F	7590	117.2	F	7490

#	Intersection	2040 SFEIS No Build						2040 SFEIS Build					
		AM			PM			AM			PM		
		Delay	LOS	Volume	Delay	LOS	Volume	Delay	LOS	Volume	Delay	LOS	Volume
18	South Capitol St SB and L St SW	10.6	B	655	10.9	B	540	N/A	N/A	N/A	N/A	N/A	N/A
19	South Capitol St NB and L St SW	18.0	C	920	12.9	B	660	N/A	N/A	N/A	N/A	N/A	N/A
20	South Capitol St and L St SW	N/A	N/A	N/A	N/A	N/A	N/A	6.0	A	5130	7.5	A	4485
21	South Capitol St SB and K St SW	N/A	N/A	5330	N/A	N/A	4710	5.4	A	5105	9.0	A	4580
22	South Capitol St and I St SW	85.7	F	5945	20.0	C	5120	10.6	B	5415	14.3	B	4785
23	South Capitol St SB and I-395 Ramp	30.0	C	1995	26.9	C	2245	15.4	B	4845	10.5	B	3910
24	South Capitol St and Virginia Ave	8.0	A	1290	4.9	A	1885	7.1	A	1220	5.0	A	1795
25	South Capitol St and Washington Ave	13.0	B	1355	27.6	C	2040	25.0	C	1285	24.4	C	1950
26	South Capitol St and Canal St/Washington Ave	27.1	C	1185	25.1	C	855	31.7	C	1015	31.8	C	665
27	3rd St and I St/ I-695 Ramp	6.7	A	545	24.7	C	1050	12.3	B	545	24.7	C	1050
28	5th St and Virginia Ave/ I-695 Ramp	11.9	B	476	17.9	B	600	11.8	B	476	17.7	B	600
29	8th St and I-695 Ramp	17.7	B	550	14.8	B	935	15.9	B	550	15.2	B	935
30	8th St and Virginia Ave	12.8	B	725	12.5	B	880	12.8	B	725	12.5	B	880
31	8th St and I St	19.3	B	1155	8.2	A	1055	19.2	B	1155	7.1	A	1055
32	11th St and N St	22.3	C	2175	11.2	B	2810	22.4	C	2175	10.4	B	2830
33	11th St and M St	62.3	E	3745	92.2	F	4920	62.3	E	3745	79.7	E	4840
34	11th St and I St	17.6	B	1685	22.1	C	1820	18.4	B	1685	22.5	C	1800
35	12th St and M St	39.5	D	1885	27.5	C	1620	39.5	D	1885	28.8	C	1610
36	MLK Jr. Ave and South Capitol St	41.2	D	2995	17.4	B	3135	46.9	D	3090	19.6	B	3310

#	Intersection	2040 SFEIS No Build						2040 SFEIS Build					
		AM			PM			AM			PM		
		Delay	LOS	Volume	Delay	LOS	Volume	Delay	LOS	Volume	Delay	LOS	Volume
37	Malcolm X Ave and West Access Rd	31.8	C	1970	18.3	B	1740	31.8	C	1970	17.9	B	1740
38	Malcolm X Ave and 2nd St	44.7	E	1610	50.4	F	1520	44.7	E	1610	50.3	F	1520
39	MLK Jr. Ave and Gate 1 West Campus/ UCC Visitor East	N/A	N/A	N/A	18.5	B	2725	4.1	A	2465	18.5	B	2725
40	MLK Jr. Ave and Sumner Rd/ Stanton Rd	20.3	C	2190	18.9	B	2535	6.1	A	2380	8.9	A	2615
43	South Capitol St and Firth Sterling Ave	88.4	F	2982	77.8	E	2982	99.5	F	3077	61.7	E	3207
44	Firth Sterling Ave and West Access Rd	31.2	C	1450	43.0	D	2230	31.9	C	1350	39.2	D	2105
45	Firth Sterling Ave and Barry Rd	13.7	B	1300	18.1	B	2030	4.3	A	950	7.7	A	1615
46	Suitland Pkwy and Firth Sterling Ave	53.8	D	4785	262.0	F	5510	68.2	E	6530	91.0	F	6740
47	Howard Rd and Anacostia Metro Parking Garage	12.6	B	1070	28.5	C	1435	N/A	N/A	N/A	N/A	N/A	N/A
48	Howard Rd and Anacostia Metro Parking Garage	N/A	N/A	N/A	N/A	N/A	N/A	3.4	A	765	11.1	B	790
49	Howard Rd and Firth Sterling Ave	68.0	E	3115	62.6	E	3335	22.7	C	1120	15.5	B	1355
50	Howard Rd and Anacostia Metro Station	1.9	A	1465	1.7	A	1385	4.1	A	670	3.3	A	830
51	Howard Rd Street Car Crossing	5.1	A	1447	6.5	A	1367	6.6	A	652	8.3	A	812
52	MLK Jr. Ave and Howard Rd	101.0	F	2370	103.9	F	2905	32.3	C	1395	37.7	D	2050
53	MLK Jr. Ave and Talbert St	9.7	A	1335	14.4	B	2115	10.3	B	1285	6.4	A	1885
54	MLK Jr. Ave and Morris Rd	8.8	A	1065	9.3	A	1745	9.7	A	1015	8.5	A	1595
55	MLK Jr. Ave and Chicago St	15.7	B	1250	10.5	B	2000	16.5	B	1200	7.7	A	1850
56	MLK Jr. Ave and W St	8.9	A	1155	33.4	C	2080	8.6	A	1105	36.9	D	2020

#	Intersection	2040 SFEIS No Build						2040 SFEIS Build					
		AM			PM			AM			PM		
		Delay	LOS	Volume	Delay	LOS	Volume	Delay	LOS	Volume	Delay	LOS	Volume
57	MLK Jr. Ave and U St	9.6	A	780	5.5	A	1685	9.7	A	730	6.1	A	1695
58	MLK Jr. Ave and Good Hope Rd	104.2	F	2525	160.7	F	3505	99.7	F	2475	160.4	F	3535
59	Good Hope Rd and 13th St	15.7	B	2045	8.6	A	1940	15.7	B	2045	8.8	A	1980
60	Suitland Pkwy and Stanton Rd	151.6	F	4215	129.1	F	4695	157.6	F	4290	127.3	F	4675
61	11th St and O St	112.7	F	2666	62.2	E	3816	112.9	F	2646	61.2	E	3826
62	11th St and SE Freeway Blvd	59.8	E	4715	35.2	D	5355	60.7	E	4715	34.7	C	5335
63	12th St and SE Freeway Blvd	17.4	B	3560	9.9	A	3045	15.8	B	3560	8.0	A	3045
64	Firth Sterling Ave and Eaton Rd	13.5	B	1160	16.8	B	1775	6.9	A	980	7.7	A	1600
65	MLK Jr. Ave and Suitland Pkwy EB Ramps	N/A	N/A	N/A	N/A	N/A	N/A	26.8	C	2310	26.7	C	2500
66	MLK Jr. Ave and Suitland Pkwy WB Ramps	N/A	N/A	N/A	N/A	N/A	N/A	14.0	B	1645	17.8	B	1740
67	Suitland Pkwy and I-295 NB Ramps	N/A	N/A	N/A	N/A	N/A	N/A	38.5	D	6765	21.3	C	6725
68	Suitland Pkwy and I-295 SB Ramps	N/A	N/A	N/A	N/A	N/A	N/A	13.6	B	5155	120.6	F	6050
69	South Capitol St and Howard Rd	13.3	B	685	24.5	C	1005	N/A	N/A	N/A	N/A	N/A	N/A
70	South Capitol St and Suitland Pkwy	31.7	C	3740	28.3	C	1565	N/A	N/A	N/A	N/A	N/A	N/A
71	East Oval and NB South Capitol St	N/A	N/A	N/A	N/A	N/A	N/A	113.2	F	6520	67.1	E	6725
72	East Oval and SB South Capitol St Entrance	N/A	N/A	N/A	N/A	N/A	N/A	9.0	A	2430	115.3	F	4430
73	East Oval and SB South Capitol St Exit	N/A	N/A	N/A	N/A	N/A	N/A	1.0	A	895	7.1	A	1595
74	East Oval and SB Suitland Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	42.4	D	3035	13.0	B	3650

#	Intersection	2040 SFEIS No Build						2040 SFEIS Build					
		AM			PM			AM			PM		
		Delay	LOS	Volume	Delay	LOS	Volume	Delay	LOS	Volume	Delay	LOS	Volume
75	East Oval and NB Suitland Pkwy	N/A	N/A	N/A	N/A	N/A	N/A	174.3	F	4270	113.0	F	2565
76	East Oval and Poplar Point Access Rd	N/A	N/A	N/A	N/A	N/A	N/A	64.6	E	4735	26.4	C	2955
77	I-295 SB Ramps and West Access Rd	17.3	B	1590	11.8	B	850	17.3	B	1590	11.5	B	820
78	South Capitol St SB Ramps and Malcolm X Ave	37.2	D	1705	22.4	C	2015	37.2	D	1705	22.3	C	2015
79	South Capitol St NB Ramps and Malcolm X Ave	16.3	B	1345	10.5	B	1560	16.3	B	1345	9.9	A	1560
80	M St and Half St SW	9.3	A	2855	23.1	C	3615	8.2	A	2805	20.1	C	3495
81	M St and Half St SE	16.5	B	2364	10.6	B	3094	12.6	B	2370	9.6	A	2964
82	South Capitol St and G St	5.1	A	1250	10.2	B	1815	N/A	N/A	N/A	N/A	N/A	N/A
83	South Capitol St and I-695 WB Ramp	N/A	N/A	N/A	N/A	N/A	N/A	60.3	E	3360	59.6	E	2940
84	5th St and Virginia Ave	25.7	C	121	30.3	C	525	26.9	C	111	31.5	C	525

Note: Gray shaded areas highlight intersections projected to have unacceptable (E) or failing (F) levels of service due to the project.

Figure 11: Air Quality Analysis Sites

3.2.4.4. Meteorological Conditions

The transport and concentration of pollutants emitted from motor vehicles are influenced by three principal meteorological factors: wind direction, wind speed, and the atmosphere's profile. The values for these parameters were chosen to maximize pollutant concentrations at each prediction site (that is, to establish a conservative, worst-case situation).

3.2.4.5. Wind Direction

Maximum CO concentrations normally are found when the wind is assumed to blow parallel to a roadway adjacent to the receptor location. At complex intersections, it is difficult to predict which wind angle will result in maximum concentrations. Therefore, the approximate wind angle that would result in maximum pollutant concentrations at each receptor location was used in the analysis. All wind angles from 0° to 360° (in 5° increments) were considered.

3.2.4.6. Wind Speed

Concentrations of CO are greatest at low wind speeds. A conservative wind speed of one meter per second (2.2 miles per hour) was used to predict CO concentrations during peak traffic periods.

3.2.4.7. Temperature and Profile of the Atmosphere

A minimum temperature of 33°F, a maximum temperature of 53°F, a "mixing" height (the height in the atmosphere to which pollutants rise) of 1000 meters, and neutral atmospheric stability (stability class D) conditions were used in estimating microscale CO concentrations. The selection of these meteorological parameters was based on recommendations from the MWCOG.

The CO levels estimated by the model are the maximum concentrations which could be expected to occur at each air quality receptor site analyzed, given the assumed simultaneous occurrence of a number of worst-case conditions: peak-hour traffic conditions, conservative vehicular operating conditions, low wind speed, low atmospheric temperature, neutral atmospheric conditions, and maximizing wind direction.

3.2.4.8. Persistence Factor

Peak eight-hour concentrations of CO were obtained by multiplying the highest peak hour CO estimates by a persistence factor. The persistence factor accounts for the fact that:

- Over eight-hours (as distinct from a single hour) vehicle volumes will fluctuate downward from the peak hour.
- Vehicle speeds may vary.
- Meteorological conditions including wind speed and wind direction will vary compared to the conservative assumptions used for the single hour.

A persistence factor of 0.7 was used in this analysis. This factor is recommended by MWCOG, and approved by the USEPA.

3.2.4.9. Background Concentrations

Microscale modeling is used to predict CO concentrations resulting from emissions from motor vehicles using roadways immediately adjacent to the locations at which predictions are being made. A CO background level must be added to this value to account for CO entering the area from other sources upwind of the receptors. The CO background level should be located away from the influence of local traffic congestion. For the project area, the data collected at the Riverside Monitor Station, located at 420 34th Street, NW DC was used. In previous analyses, the monitor at Annandale, VA monitoring station, located southwest of Washington, DC at 6507 Columbia Pike, in the State of Virginia was used but this site has been discontinued. The second highest monitored one-hour CO concentration during the period of 2010 – 2012 was 3.7 ppm; the second highest eight-hour average was 3.1 ppm. These values were conservatively used as the background for all CO modeling analyses. Future CO background levels are anticipated to be lower than existing levels due to mandated emission source reductions.

3.2.4.10. Traffic Information

Traffic data for the air quality analysis were derived from traffic counts and other information developed as part of an overall traffic analysis for the Project using methodology accepted by DDOT. Output from the "Synchro 8" signal timing traffic model was used to obtain signal timing parameters. The microscale CO analysis was performed based on data from this analysis for the AM and PM peak traffic periods. These are the periods when maximum traffic volumes occur on local streets and when the greatest traffic and air quality effects of the proposed Project are expected.

The percentages of each type of vehicle, for the existing and future year conditions, were determined using data for the Metropolitan Washington Area provided by the MWCOG. Vehicle speeds used in the analysis were obtained from traffic information developed for the Project.

3.2.4.11. Analysis Years

CO concentrations were predicted for the existing (2013), opening (2020) and design (2040) years for the project.

3.3 Regional Emission Burden Assessment

The regional emission burden analysis of a project determines a project's overall impact on air quality levels beyond the immediate project area.

As shown in Table 5, an emission burden analysis based on the DC region's 2040 daily vehicle miles traveled (VMT) and daily vehicle hours traveled (VHT) was conducted for the Build Alternative and compared to the No Build Alternative. This is a refinement from previous analyses which analyzed the entire MWCOG region. Emission factors were calculated using USEPA's MOVES2010b mobile source emission factor program. The Build Alternative is expected to reduce regional emissions by approximately 0.3%. Based on these results, the Build Alternative is predicted to have no measurable impact on regional pollutant burdens.

Table 5: Regional Emission Burden Assessment

	Pollutant (Tons per day)					Percent change from No Build				
	CO	NO_x	PM_{10}	$PM_{2.5}$	VOC	CO	NO_x	PM_{10}	$PM_{2.5}$	VOC
No Build	37.19	2.83	0.31	0.29	0.91	-	-	-	-	-
Build	37.08	2.83	0.31	0.29	0.90	-0.30%	-0.30%	-0.30%	-0.30%	-0.30%

Notes:

CO= Carbon Monoxide

NO_x= Nitrogen Oxides

PM_{10}= Particulate Matter

$PM_{2.5}$= Fine Particulate Matter

VOC= Volatile Organic Compounds

3.4 Greenhouse Gas Analysis

Based on the regional traffic data, the project is predicted to decrease VMT by approximately 0.3% as compared to the no build scenario and have no measurable effect on average network speed. Operational energy requirements for the vehicles using the facility are expected to demonstrate no measurable change. As such, the project is not predicted to measurably affect greenhouse gas levels.

3.5 $PM_{2.5}$ Assessment

Following the guidelines in the USEPA's *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*, a $PM_{2.5}$ hot-spot analysis should be conducted only if the project is a project of air quality concern, defined in 40 CFR 93.123(b)(1) as:

(i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;

(ii) Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E or F because of increased traffic volumes from a significant number of diesel vehicles;

(iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;

(iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and

(v) Projects in or affecting locations, areas, or categories of sites which are identified in the $PM_{2.5}$ or PM_{10} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

As shown in Table 6, the average annual daily traffic and truck percentage in the project area show minor changes between the SFEIS No Build Alternative and the SFEIS Revised Preferred Alternative.

In 2040, the overall truck percentage under the No Build Alternative is predicted to be 5.8 percent. The 2040 overall truck percentage under the SFEIS Revised Preferred Alternative is predicted to be 5.4 percent. This difference is considered beyond the accepted accuracy of the traffic model; therefore, both alternatives are considered to have a truck percentage of 6 percent. As such, the project is not projected to cause an increase in diesel vehicles. In 2020, similar truck percentages are expected between No Build and Build alternatives. In essence, the project is not expected to increase overall truck percentages within the study area.

The percentage of truck volumes under the No Build Alternative and the Build Alternative does not change; rather, there is an overall increase in volume at these sites, as shown in Table 6. As such, the changes do not indicate a significant increase in diesel vehicles due to the project.

The largest increase in truck percentages due to the project is estimated to occur at N and O Streets and at Firth Sterling, near Defense Road and Summer Road. The project is estimated to increase truck traffic by approximately 2 percent in 2040. The 2040 Build AADT at O and N streets are approximately 2,000 and at Firth Sterling Avenue it is approximately 5,500 to 6,500. Considering the relatively low AADT at this location, the predicted increase in truck traffic is not substantial.

Based on the results of the air quality analysis, the project is not considered to meet the criteria of a project of air quality concern as established in 40 CFR 93.123(b)(1). As such, the project is not considered a project of $PM_{2.5}$ concern, and the USEPA has determined that such projects do not require any further hot-spot analysis. Therefore, no $PM_{2.5}$ impacts are expected with the Build Alternative.

Table 6: Annual Average Daily Traffic (AADT) and Truck Percentage

Roadway and Direction	2040 AADT		Truck Percentages		Truck Volumes		Change between No Build and Build Truck Volumes
Segment Details	SFEIS No-Build	SFEIS Build	SFEIS No-Build	SFEIS Build	SFEIS 2040 No-Build	SFEIS 2040 Build	
I-295 Northbound							
between Malcolm X Avenue and Suitland Parkway	46,523	46,867	7.0%	7.0%	3,260	3,280	20
between Suitland Parkway and 11th Street Bridges	58,997	61,602	7.0%	7.0%	4,130	4,310	180
I-295 Southbound							
between Malcolm X Avenue and Suitland Parkway	47,368	48,253	7.0%	6.0%	3,320	2,900	-420
between Suitland Parkway and 11th Street Bridges	57,961	59,674	7.0%	6.0%	4,060	3,580	-480
Suitland Parkway Northbound							
between Stanton Road and Martin Luther King Jr. Avenue	24,613	24,671	1.0%	1.0%	250	250	0
between Martin Luther King Jr. Avenue and Firth Sterling Avenue	23,184	33,193	1.0%	1.0%	230	330	100
under I-295 Overpass	21,632	22,438	1.0%	1.0%	220	220	0
Suitland Parkway Southbound							
between Stanton Road and Martin Luther King Jr. Avenue	22,251	23,477	2.0%	1.0%	450	230	-220
between Martin Luther King Jr. Avenue and Firth Sterling Avenue	19,289	31,599	2.0%	1.0%	390	320	-70
under I-295 Overpass	20,897	33,643	2.0%	1.0%	420	340	-80
South Capitol Street Northbound							
between Malcolm X Avenue and Defense Boulevard	18,414	17,995	4.0%	4.0%	740	720	-20
between Defense Boulevard and Suitland Parkway	20,045	19,081	4.0%	4.0%	800	760	-40
on Frederick Douglass Bridge	40,298	42,121	6.0%	6.0%	2,420	2,530	110
between Potomac Avenue and N Street	31,599	31,625	6.0%	6.0%	1,900	1,900	0

Roadway and Direction	2040 AADT		Truck Percentages		Truck Volumes		Change between No Build and Build Truck Volumes
Segment Details	SFEIS No-Build	SFEIS Build	SFEIS No-Build	SFEIS Build	SFEIS 2040 No-Build	SFEIS 2040 Build	
at M Street Interchange (between N Street and I Street)	23,212	32,268	6.0%	6.0%	1,390	1,940	550
between I Street and I-395 Overpass	40,920	35,560	6.0%	6.0%	2,460	2,130	-330
between I-395 Overpass and E Street	17,273	15,032	14.0%	14.0%	2,420	2,100	-320
between E Street and D Street	1,993	1,587	14.0%	14.0%	280	220	-60
South Capitol Street Southbound							
between Malcolm X Avenue and Defense Boulevard	15,559	15,918	3.0%	3.0%	470	480	10
between Defense Boulevard and Suitland Parkway	17,031	17,157	3.0%	3.0%	510	510	0
on Frederick Douglass Bridge	32,339	40,198	5.0%	5.0%	1,620	2,010	390
between Potomac Avenue and N Street	25,648	30,643	6.0%	6.0%	1,540	1,840	300
at M Street Interchange (between N Street and I Street)	19,129	26,415	6.0%	6.0%	1,150	1,580	430
between I Street and I-395 Overpass	28,887	30,763	6.0%	6.0%	1,730	1,850	120
between I-395 Overpass and E Street	10,124	11,695	13.0%	13.0%	1,320	1,520	200
between E Street and D Street	2,947	3,108	13.0%	13.0%	380	400	20
I-395 Eastbound							
upstream of South Capitol Street Off-Ramp	56,901	56,896	6.0%	6.0%	3,410	3,410	0
at South Capitol Street	49,339	48,434	6.0%	6.0%	2,960	2,910	-50
upstream of Virginia Avenue Off-Ramp	70,289	69,226	6.0%	6.0%	4,220	4,150	-70
I-395 Westbound							
upstream of I-395 SB On-Ramp	61,920	61,592	4.0%	4.0%	2,480	2,460	-20
at South Capitol Street	52,543	53,489	4.0%	4.0%	2,100	2,140	40
downstream of Virginia Avenue On-Ramp	67,444	68,755	4.0%	4.0%	2,700	2,750	50
New Jersey Avenue Northbound							
between D Street and E Street	1,509	1,613	2.0%	2.0%	30	30	0

Roadway and Direction	2040 AADT		Truck Percentages		Truck Volumes		Change between No Build and Build Truck Volumes
Segment Details	SFEIS No-Build	SFEIS Build	SFEIS No-Build	SFEIS Build	SFEIS 2040 No-Build	SFEIS 2040 Build	
between E Street and I Street	1,720	2,226	2.0%	2.0%	30	40	10
between I Street and K Street	1,231	1,362	2.0%	2.0%	20	30	10
between K Street and L Street	1,322	1,341	2.0%	2.0%	30	30	0
between L Street and M Street	1,367	1,357	2.0%	2.0%	30	30	0
New Jersey Avenue Southbound							
between D Street and E Street	1,693	1,631	2.0%	2.0%	30	30	0
between E Street and I Street	1,797	1,575	2.0%	2.0%	40	30	-10
between I Street and K Street	980	938	2.0%	2.0%	20	20	0
between K Street and L Street	936	881	2.0%	2.0%	20	20	0
between L Street and M Street	866	845	2.0%	2.0%	20	20	0
I Street Eastbound							
between Half St SW and South Capitol Street	3,249	2,204	2.0%	2.0%	60	40	-20
between South Capitol Street and Half St SE	2,230	2,188	2.0%	2.0%	40	40	0
between Half St SE and First Street SE	2,552	2,659	2.0%	2.0%	50	50	0
between First Street SE and New Jersey Avenue SE	2,630	2,879	2.0%	2.0%	50	60	10
I Street Westbound							
between Half St SW and South Capitol Street	3,191	2,712	2.0%	2.0%	60	50	-10
between South Capitol Street and Half St SE	8,114	5,528	2.0%	2.0%	160	110	-50
between Half St SE and First Street SE	6,323	4,747	2.0%	2.0%	130	90	-40
between First Street SE and New Jersey Avenue SE	2,993	2,601	2.0%	2.0%	60	50	-10
K Street Eastbound							
between Half St SW and South Capitol Street	3,618	2,005	2.0%	2.0%	70	40	-30
between South Capitol Street and Half St SE	2,230	1,852	2.0%	2.0%	40	40	0

Roadway and Direction	2040 AADT		Truck Percentages		Truck Volumes		Change between No Build and Build Truck Volumes
Segment Details	SFEIS No-Build	SFEIS Build	SFEIS No-Build	SFEIS Build	SFEIS 2040 No-Build	SFEIS 2040 Build	
between Half St SE and First Street SE	795	833	2.0%	2.0%	20	20	0
between First Street SE and New Jersey Avenue SE	1,032	1,032	2.0%	2.0%	20	20	0
K Street Westbound							
between Half St SW and South Capitol Street	1,754	1,428	2.0%	2.0%	40	30	-10
between South Capitol Street and Half St SE	915	2,549	2.0%	2.0%	20	50	30
between Half St SE and First Street SE	940	975	2.0%	2.0%	20	20	0
between First Street SE and New Jersey Avenue SE	1,127	1,000	2.0%	2.0%	20	20	0
L Street Eastbound							
between Half St SW and M Street Off-Ramp	158	1,507	2.0%	2.0%	0	30	30
between M Street On-Ramp and Half St SE	696	1,402	2.0%	2.0%	10	30	20
between Half St SE and First Street SE	774	748	2.0%	2.0%	20	10	-10
between First Street SE and New Jersey Avenue SE	1,054	1,027	2.0%	2.0%	20	20	0
L Street Westbound							
between Half St SW and M Street Off-Ramp	470	1,428	2.0%	2.0%	10	30	20
between M Street On-Ramp and Half St SE	1,391	996	2.0%	2.0%	30	20	-10
between Half St SE and First Street SE	1,966	2,224	2.0%	2.0%	40	40	0
between First Street SE and New Jersey Avenue SE	1,219	1,086	2.0%	2.0%	20	20	0
M Street Eastbound							
between Half St SW and South Capitol Street	25,218	24,779	9.0%	7.0%	2,270	1,730	-540
between South Capitol Street and Half St SE	22,711	22,814	9.0%	7.0%	2,040	1,600	-440
between Half St SE and First Street SE	19,112	18,946	9.0%	7.0%	1,720	1,330	-390
between First Street SE and New Jersey Avenue SE	20,878	19,623	9.0%	7.0%	1,880	1,370	-510

Roadway and Direction	2040 AADT		Truck Percentages		Truck Volumes		Change between No Build and Build Truck Volumes
Segment Details	SFEIS No-Build	SFEIS Build	SFEIS No-Build	SFEIS Build	SFEIS 2040 No-Build	SFEIS 2040 Build	
M Street Westbound							
between Half St SW and South Capitol Street	22,149	23,407	11.0%	9.0%	2,440	2,110	-330
between South Capitol Street and Half St SE	20,639	19,861	11.0%	9.0%	2,270	1,790	-480
between Half St SE and First Street SE	18,204	16,806	11.0%	9.0%	2,000	1,510	-490
between First Street SE and New Jersey Avenue SE	21,344	19,797	11.0%	9.0%	2,350	1,780	-570
N Street Eastbound							
between Half St SW and South Capitol Street	one-way	2,028	0.0%	2.0%	n.a	40	NA
between South Capitol Street and Half St SE	3,027	2,086	2.0%	2.0%	60	40	-20
between Half St SE and First Street SE	1,722	968	2.0%	2.0%	30	20	-10
N Street Westbound							
between Half St SW and South Capitol Street	1,389	1,378	2.0%	2.0%	30	30	0
between South Capitol Street and Half St SE	2,268	1,435	2.0%	2.0%	50	30	-20
between Half St SE and First Street SE	1,106	797	2.0%	2.0%	20	20	0
O Street Eastbound							
between Half St SW and South Capitol Street	one-way	1,652	0.0%	2.0%	n.a	30	NA
O Street Westbound							
between Half St SW and South Capitol Street	968	1,178	2.0%	2.0%	20	20	0
P Street Eastbound							
between Half St SW and South Capitol Street	3,345	2,091	2.0%	2.0%	70	40	-30
P Street Westbound							
between Half St SW and South Capitol Street	1,096	944	2.0%	2.0%	20	20	0

Roadway and Direction	2040 AADT		Truck Percentages		Truck Volumes		Change between No Build and Build Truck Volumes
Segment Details	SFEIS No-Build	SFEIS Build	SFEIS No-Build	SFEIS Build	SFEIS 2040 No-Build	SFEIS 2040 Build	
Potomac Avenue Eastbound							
between Half St SW and South Capitol Street	7,519	6,766	2.0%	2.0%	150	140	-10
between South Capitol Street and First St SE	5,506	5,338	2.0%	2.0%	110	110	0
Potomac Avenue Westbound							
between Half St SW and South Capitol Street	7,304	5,744	2.0%	2.0%	150	110	-40
between South Capitol Street and First St SE	3,282	4,080	2.0%	2.0%	70	80	10
Sumner Road Eastbound							
between Firth Sterling Avenue and Martin Luther King Jr. Avenue	2,896	2,716	2.0%	2.0%	60	50	-10
between Martin Luther King Jr. Avenue and Dunbar Road	2,306	523	2.0%	2.0%	50	10	-40
Sumner Road Westbound							
between Firth Sterling Avenue and Martin Luther King Jr. Avenue	2,907	2,248	2.0%	2.0%	60	40	-20
between Martin Luther King Jr. Avenue and Dunbar Road	55	9	2.0%	2.0%	0	0	0
Martin Luther King Jr. Avenue Northbound							
south of Sumner Road	14,372	15,557	6.0%	4.0%	860	620	-240
Sumner Road and Howard Road	11,680	15,788	6.0%	4.0%	700	630	-70
north of Howard Road	5,157	5,467	2.0%	2.0%	100	110	10
Martin Luther King Jr. Avenue Southbound							
south of Sumner Road	14,079	16,271	4.0%	4.0%	560	650	90
Sumner Road and Howard Road	13,646	8,112	4.0%	4.0%	550	320	-230
north of Howard Road	8,575	6,977	2.0%	2.0%	170	140	-30

Roadway and Direction	2040 AADT		Truck Percentages		Truck Volumes		Change between No Build and Build Truck Volumes
Segment Details	SFEIS No-Build	SFEIS Build	SFEIS No-Build	SFEIS Build	SFEIS 2040 No-Build	SFEIS 2040 Build	
Howard Road Eastbound							
between Suitland Parkway and I-295 Southbound Off-Ramp	1,772	2,842	2.0%	2.0%	40	60	20
between I-295 Southbound Off-Ramp and Firth Sterling Avenue	8,219	2,842	2.0%	2.0%	160	60	-100
between Firth Sterling Avenue and Martin Luther King Jr. Avenue	8,039	3,106	2.0%	2.0%	160	60	-100
Howard Road Westbound							
between Suitland Parkway and I-295 Southbound Off-Ramp	3,116	2,550	2.0%	2.0%	60	50	-10
between I-295 Southbound Off-Ramp and Firth Sterling Avenue	1,733	2,550	2.0%	2.0%	30	50	20
between Firth Sterling Avenue and Martin Luther King Jr. Avenue	10,901	3,642	2.0%	2.0%	220	70	-150
Firth Sterling Avenue Northbound							
between Defense Boulevard and Sumner Road	5,144	5,470	8.0%	10.0%	410	550	140
between Sumner Road and Suitland Parkway	7,748	6,487	8.0%	10.0%	620	650	30
between Suitland Parkway and Howard Road	4,515	2,902	6.0%	6.0%	270	170	-100
between Howard Road and I-295 NB	10,361	n.a	6.0%	0.0%	620	n.a	NA
Firth Sterling Avenue Southbound							
between Defense Boulevard and Sumner Road	5,046	5,086	8.0%	7.0%	400	360	-40
between Sumner Road and Suitland Parkway	6,073	5,377	8.0%	7.0%	490	380	-110
between Suitland Parkway and Howard Road	3,502	3,734	6.0%	6.0%	210	220	10
between Howard Road and I-295 NB	n.a	n.a	0.0%	0.0%	n.a	n.a	NA

Roadway and Direction	2040 AADT		Truck Percentages		Truck Volumes		Change between No Build and Build Truck Volumes
Segment Details	SFEIS No-Build	SFEIS Build	SFEIS No-Build	SFEIS Build	SFEIS 2040 No-Build	SFEIS 2040 Build	
Ramps in the vicinity of South Capitol St project							
off-ramp from EB I-695 to SB South Capitol St	7,562	8,462	7.5%	7.5%	570	630	60
off-ramp from 3rd St Tunnel to SB South Capitol St	11,214	11,572	7.5%	7.5%	840	870	30
off-ramp from SB South Capitol St to M St	4,528	n.a	7.5%	n.a	340	n.a	NA
on-ramp from M St to SB South Capitol St	6,876	n.a	7.5%	n.a	520	n.a	NA
off-ramp from NB South Capitol St to M St	7,875	n.a	7.5%	n.a	590	n.a	NA
on-ramp from M St to NB South Capitol St	6,523	n.a	7.5%	n.a	490	n.a	NA
off-ramp from NB I-295 to Suitland Pkwy	n.a	6,910	n.a	7.5%	n.a	520	NA
on-ramp from Suitland Pkwy to NB I-295	n.a	21,646	n.a	7.5%	n.a	1,620	NA
off-ramp from SB I-295 to Suitland Pkwy (NB and SB)	n.a	18,952	n.a	7.5%	n.a	1,420	NA
off-ramp from SB Suitland Pkwy to MLK Jr. Ave	n.a	10,588	n.a	7.5%	n.a	790	NA
on-ramp from MLK Jr. Ave to SB Suitland Pkwy	n.a	2,464	n.a	7.5%	n.a	180	NA
off-ramp from NB Suitland Pkwy to MLK Jr. Ave	n.a	2,952	n.a	7.5%	n.a	220	NA
on-ramp from MLK Jr. Ave to NB Suitland Pkwy	n.a	11,473	n.a	7.5%	n.a	860	NA
on-ramp from South Capitol St to WB I-695	9,378	8,103	7.5%	7.5%	700	610	-90
Washington Ave SW Northbound							
between D St and South Capitol St	18,265	16,951	14.0%	14.0%	2,560	2,370	-190
Washington Ave SW Southbound							
between D St and South Capitol St	10,595	11,737	13.0%	13.0%	1,380	1,530	150

3.6 MSAT Assessment

Based on the recommended tiering approach, the project falls within the Tier 2 approach, as it does not:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location; or
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000 or greater by the design year.

As such, the amount of MSATs emitted would be proportional to the VMT assuming the vehicle mix does not change. The Build Alternative is predicted to decrease regional VMT by 0.3 percent. These small changes cannot be considered measurable, thus the project is predicted to generally produce no meaningful MSAT effects.

The reconfigured travel lanes contemplated as part of the Build Alternative may have the effect of moving some traffic closer to nearby homes, schools and businesses. As a result, there may be localized areas where ambient concentrations of MSATs could be higher under the Build Alternatives than under the No Build Alternative. Locations that may experience this include areas near Suitland Parkway and the Naval Station. When new travel lanes are constructed, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs will be lower in other locations when traffic shifts away from them. However, on a regional basis, the USEPA's vehicle and fuel regulations coupled with fleet turnover will cause region-wide MSAT levels to be substantially lower than today in almost all cases.

Sensitive receptors include those facilities most likely to contain large concentrations of the more sensitive population. These include hospitals, schools, licensed day cares, and elder care facilities. Dispersion studies have shown that the "roadway" air toxics start to drop off at about 100 meters (328 feet). By 500 meters (1,640 feet), most studies have found it difficult to distinguish the roadway from background toxic concentrations in any given area.

Regardless of the alternative, emissions would likely be lower than present levels in the design year as a result of the USEPA's national control programs that are projected to reduce MSAT emissions by 83 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the project area are likely to be lower in the future in nearly all cases.

Due to the MSATs analysis limitations, the following discussion is included in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.22[b]) regarding incomplete or unavailable information.

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The USEPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The USEPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (USEPA, *http://www.epa.gov/iris/*). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's *Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents*. Among the adverse health effects linked to MSAT compounds at high exposures are; cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, *http://pubs.healtheffects.org/view.php?id=282*) or in the future as vehicle emissions substantially decrease (HEI, *http://pubs.healtheffects.org/view.php?id=306*).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts. Each of these is a step in the process which build on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable. There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (*http://pubs.healtheffects.org/view.php?id=282*). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The USEPA

(*http://www.epa.gov/risk/basicinformation.htm#g*) and the HEI (*http://pubs.healtheffects.org/getfile.php?u=395*) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the USEPA as provided by the CAA to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires USEPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld USEPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

In this technical report, FHWA has provided a qualitative analysis of MSAT emissions relative to the alternatives. The FHWA also has acknowledged that the project may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

3.7 Microscale Assessment

Maximum one-hour and eight-hour CO levels were predicted at receptor sites along the South Capitol Street Corridor. Maximum existing, 2020 and 2040 one-hour CO concentrations are shown in Table 7. Maximum eight-hour CO concentrations for existing, 2020 and 2040 are shown in Table 8. MOVES2010b data used in the CO analysis is contained in Appendix A. CAL3QHC (Version 2) input and output information for each site is contained in Appendix B. As shown in these tables, no violations of the NAAQS are predicted under the No Build and Build alternatives.

Table 7: Predicted Worst-Case 1-hour 2020 and 2040 CO Concentrations (ppm)

Site #	Site Description	Existing		SFEIS 2020 No Build Alternative		SFEIS 2020 Build Alternative		SFEIS 2040 No Build Alternative		SFEIS 2040 Build Alternative	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Southbound I-395 and Ramp to SE-SW Freeway	4.5	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
2	North Carolina Avenue SE and 1st Street SE	4.1	4.2	3.9	3.9	4.0	3.8	3.8	3.9	3.9	3.8
3	M Street and South Capitol Street	5.5	4.9	4.7	4.7	4.8	4.8	4.6	4.8	4.6	4.7
4	N Street and South Capitol Street	5.0	5.1	4.4	4.4	4.6	4.4	4.4	4.3	4.6	4.6
5	South Capitol Street West Oval at Potomac Avenue	5.1	6.1	4.5	4.7	4.7	5.1	4.5	4.7	4.4	4.4
6	Q Street, Potomac Avenue, and South Capitol Street	5.4	5.1	4.6	4.5	4.8	5.1	4.5	4.5	4.6	4.5
7	South Capitol Street at East Oval including Howard Road and Suitland Parkway	5.1	5.2	4.5	4.6	4.9	4.6	4.5	4.5	4.8	4.6
8	Defense Road, Firth Sterling South Capitol Street	5.5	5.4	4.5	4.6	5.1	4.5	4.4	4.6	5.1	4.5
9	SB I-295 Off Rampand Suitland Parkway	5.1	4.8	4.5	4.5	4.5	4.7	4.4	4.6	4.4	4.7
10	NB I-295 off ramp to Suitland Parkway, Firth Sterling Avenue	4.6	4.8	4.1	4.3	4.8	5.0	4.2	4.3	4.6	4.8

Note: Concentrations include one hour CO background = 3.7 ppm, One hour CO Standard = 35 ppm

Table 8: Predicted Worst-Case 8-Hour 2020 and 2040 CO Concentrations (ppm)

Site #	Site Description		2020		2040	
		Existing	SFEIS No Build	SFEIS Build	SFEIS No Build	SFEIS Build
1	Southbound I-395 and Ramp to SE-SW Freeway	3.7	3.4	3.4	3.4	3.4
2	North Carolina Avenue SE and 1st Street SE	3.5	3.2	3.3	3.2	3.2
3	M Street and South Capitol Street	4.4	3.8	3.9	3.9	3.8
4	N Street and South Capitol Street	4.1	3.6	3.7	3.6	3.7
5	South Capitol Street West Oval at Potomac Avenue	4.8	3.8	4.1	3.8	3.6
6	Q Street, Potomac Avenue, and South Capitol Street	4.3	3.7	4.1	3.7	3.7
7	South Capitol Street at East Oval including Howard Road and Suitland Parkway	4.2	3.7	3.9	3.7	3.9
8	Defense Road, Firth Sterling South Capitol Street	4.4	3.7	4.1	3.7	4.1
9	SB I-295 Off Ramp and Suitland Parkway	4.1	3.7	3.8	3.7	3.8
10	NB I-295 off ramp to Suitland Parkway, Firth Sterling Avenue	3.9	3.5	4.0	3.5	3.9

Note: Concentrations include eight-hour CO background = 3.1 ppm, eight-hour CO Standard = 9 ppm

4.0 Construction Impacts on Air Quality

Construction-related effects of the Project would be limited to short-term increased fugitive dust and mobile-source emissions during construction. State and local regulations regarding dust control and other air quality emission reduction controls should be followed.

4.1 Fugitive Dust Emissions

Fugitive dust is airborne particulate matter, generally of a relatively large particulate size. Construction-related fugitive dust would be generated by haul trucks, concrete trucks, delivery trucks, and earth-moving vehicles operating around the construction sites. This fugitive dust would be due primarily to particulate matter re-suspended ("kicked up") by vehicle movement over paved and unpaved roads, dirt tracked onto paved surfaces from unpaved areas at access points, and material blown from uncovered haul trucks.

Generally, the distance that particles drift from their source depends on their size, the emission height, and the wind speed. Small particles (30 – 100 micron range) can travel several hundred feet before settling to the ground. Most fugitive dust, however, is comprised of relatively large particles (that is, particles greater than 100 microns in diameter). These particles are responsible for the reduced visibility often associated with this type of construction. Given their relatively large size, these particles tend to settle within 20 to 30 feet of their source.

In order to minimize the amount of construction dust generated, the guidelines below should be followed. The following preventive and mitigative measures, consistent with the *DDOT Division 100 General Requirements*, should be taken to minimize the potential particulate pollution problem:

4.1.1 Site Preparation

- Minimize land disturbance.
- Use watering trucks to minimize dust.
- Cover trucks when hauling dirt.
- Stabilize the surface of dirt piles if they are not removed immediately.
- Use windbreaks to prevent accidental dust pollution.
- Limit vehicular paths and stabilize these temporary roads.
- Pave all unpaved construction roads and parking areas to road grade for a length no less than 50 feet from where such roads and parking areas exit the construction site. This prevents dirt from washing onto paved roadways.

4.1.2 Construction

- Cover trucks when transferring materials.
- Use dust suppressants on unpaved traveled paths.
- Minimize unnecessary vehicular and machinery activities.
- Minimize dirt track-out by washing or cleaning trucks before leaving the construction site. An alternative to this strategy is to pave a few hundred feet of the exit road just before entering the public road.

4.1.3 Post-Construction

- Re-vegetate any disturbed land not used.
- Remove unused material.
- Remove dirt piles.
- Re-vegetate all vehicular paths created during construction to avoid future off-road vehicular activities.

4.2 Mobile Source Emissions

Since CO emissions from motor vehicles generally increase with decreasing vehicle speed, disruption of traffic during construction (such as the temporary reduction of roadway capacity and the increased queue lengths) could result in short-term, elevated concentrations of CO. In order to minimize the amount of emissions generated, every effort should be made during the construction phase to limit disruption to traffic, especially during peak travel hours.

5.0 Conclusions

The project is part of the approved 2013 *Financially Constrained Long-Range Transportation Plan* as well as part of the approved 2013-2018 *Transportation Improvement Plan.* As such, it is part of the region's plan to achieve their air quality goals. The SFEIS Build Alternative is predicted to decrease regional VMT by 0.03 percent, as compared to the SFEIS No Build Alternative. This small change cannot be considered measurable. The project is therefore not expected to measurably affect project level emission burdens, including greenhouse gases, or to cause a violation of the $PM_{2.5}$ standard. The project is also not expected to measurably increase MSAT levels. The project is not predicted to cause or exacerbate a violation of the NAAQS.

Construction-related effects of the project would be limited to short-term increased fugitive dust and mobile-source emissions during construction. District regulations regarding dust control and other air quality emission reduction controls would be followed.

6.0 References

Federal Highway Authority, *Interim Guidance Update on Air Toxic Analysis in NEPA Documents*. February 3, 2006.

Federal Highway Authority, *Interim Guidance Update on Mobile Source Air Toxics Analysis in NEPA*. December 6, 2012. http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/100109guidmem.cfm

National Capital Region Transportation Planning Board, Metropolitan Washington Council of Governments, *Transportation Improvement Program for the Washington Metropolitan Region, FY2013-2018 (TIP)*.

National Capital Region Transportation Planning Board, Metropolitan Washington Council of Governments, *The Financially Constrained Long-Range Transportation Plan for the National Capital Region 2013 (CLRP)*.

Office of Air Quality Planning and Standards, US Environmental Protection Agency, *AirData*. http://www.epa.gov/airdata/. Accessed September 2013.

US Environmental Protection Agency, *Air Emission Sources.* http://www.epa.gov/air/emissions/. Accessed August 2013.

US Environmental Protection Agency, *National Ambient Air Quality Standards (NAAQS)*. http://www.epa.gov/air/criteria.html. Accessed August 2013.

US Environmental Protection Agency, *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*. November 2013. http://www.epa.gov/oms/stateresources/transconf/projectlevel-hotspot.htm#pm-hotspot

US Environmental Protection Agency, *The Green Book Nonattainment Areas for Criteria Pollutants*. http://www.epa.gov/oaqps001/greenbk/. Accessed August 2013.

US Environmental Protection Agency, Office of Air Quality Planning and Standards, *User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations near Roadway Intersections*, EPA - 454/R-92-006

THE FOLLOWING APPENDICES ARE AVAILABLE UPON REQUEST TO DDOT.

APPENDIX A
MOVES2010b DATA

APPENDIX B
CAL3QHC INPUT & OUTPUT FILES

THIS PAGE INTENTIONALLY LEFT BLANK.

District Department of Transportation

appendix D

noise technical report

FINAL NOISE TECHNICAL REPORT

February 2014

Table of Contents

1.0 INTRODUCTION 1

1.1 Setting 2
1.2 Purpose and Need 2
1.3 Project Area 3
1.4 No-Build and Preferred Alternative 3
1.4.1 No Build Alternative 3
1.4.2 Overview of Build Alternatives in the FEIS 3
1.4.3 Revised Preferred Alternative Description 5
Segment 1 5
Segment 2 6
Segment 3 6
Segment 4 7
Segment 5 8

2.0 TRAFFIC NOISE ANALYSIS 8

2.1 Sound Descriptors 8
2.1.1 Human Perception of Changes in Noise Levels 8
2.2 Criteria for Determining Noise Impacts 11
2.3 Existing Activities 12
2.3.1 Land Use Activities 12
2.3.2 Noise-Sensitive Receptors 17
2.4 Existing Noise Measurements and Model Validation 18
2.5 Predicted Noise Levels 21
2.5.1 Noise Model Development and Traffic Volumes 22
Noise Model Development 22
Existing, 2040 No-Build, and 2040 Build Traffic Volumes 22
2.5.2 Noise Model Results 23
2.6 Potential Impacts 25

3.0 TRAFFIC NOISE ABATEMENT 25

3.1 Evaluation of Abatement Measures 25
3.2 Noise Barriers 29
3.2.1 Noise Barrier Evaluations 30
CNE-2: Suitland Parkway between Martin Luther King Jr. Avenue SE and I-295 30
CNE-4: I-295 between south of Defense Boulevard and 11th Street Bridge Exit 31
CNE-9: South Capitol Street between I Street and I-395 31

4.0 PROJECT RELATED CONSTRUCTION NOISE IMPACTS 32

4.1 Construction Noise Abatement Measures 36

5.0 PUBLIC INVOLVEMENT 36

6.0 CONCLUSION 37

6.1 Comparison of the SFEIS and FEIS Noise Studies 37
6.2 Noise Abatement Statement of Likelihood 39
6.3 Noise Abatement Incorporation into the Record of Decision 40

7.0 REFERENCES 41

Tables

Table 1: Common Noise Levels and Typical Reactions 9
Table 2: Noise Abatement Criteria for Highway Projects 11
Table 3: Land Use Activities 13
Table 4: Existing Noise Measurements and Model Validation Results 21
Table 5: Summary of Predicted Noise Impacts 24
Table 6: Typical Roadway Construction Equipment Noise Levels and Emission Limits (dBA) 34
Table 7: Comparison of the SFEIS and FEIS Noise Study Results 37

Figures

Figure 1: Project Study Area 4
Figure 2: Segments of the South Capitol Street Project 7
Figure 3: Sound Pressure and Sound Pressure Levels 10
Figure 4: Noise Measurement Locations 20

Appendices

APPENDIX A – Noise Study Plans
APPENDIX B – Laboratory Calibration, Field Calibration, Field Measurement Information
APPENDIX C – TNM® 2.5 Inputs
APPENDIX D – Existing Condition, 2040 No-Build, and 2040 Build Condition Traffic Volumes
APPENDIX E – TNM® 2.5 Predicted Noise Levels
APPENDIX F – Proposed Noise Barrier Plans
APPENDIX G – Noise Barrier Evaluation Spreadsheet

1.0 Introduction

The District of Columbia Department of Transportation (DDOT), in cooperation with the Federal Highway Administration (FHWA) is proposing transportation improvements in the South Capitol Street Corridor in the District of Columbia. The focus of the South Capitol Street project includes improvements within the South Capitol Street Corridor between Suitland Parkway at Martin Luther King, Jr. Avenue and Independence Avenue, including the replacement of the Frederick Douglass Memorial Bridge. The project also includes improvements along New Jersey Avenue between M Street, SE and D Street, SE.

A Supplemental Final Environmental Impact Statement (SFEIS) is being prepared to examine the proposed changes to the South Capitol Street Project (the Project) as described in the FEIS released in March 2011. Decisions about the Project made since approval of the 2011 FEIS resulted in major changes to the design of the project. The most notable decision was to reconsider obtaining right-of-way within the northernmost portion of the Joint Base Anacostia Bolling (JBAB) for the Project. This decision resulted in additional engineering to set the proposed new Frederick Douglass Memorial Bridge on an alignment immediately south of and parallel to the existing bridge. In addition, new information about current and planned navigation, including the navigation requirements of the U.S. Navy along the Anacostia River influenced the decision to include a fixed bridge among the Project alternatives.

As part of the Draft Environmental Impact Study (DEIS) finalized in 2008, a Noise Technical Report was completed in September 2007. The 2007 Noise Technical Report documented the evaluation of the Project's feasible alternatives and determined highway traffic noise impact based on those alternatives. This noise analysis also supported the findings of the 2011 FEIS.

This SFEIS Noise Report provides an update of the noise analysis for the preferred alternative to determine changes between the alternatives evaluated during the FEIS and the Revised Preferred Alternative. This report documents the evaluation of the Revised Preferred Alternative, identification of highway traffic noise impacts, and determination of appropriate feasible and reasonable noise mitigation measures. Potential noise impacts that would be expected to occur as a result of Revised Preferred Alternative were identified for construction and traffic operation of the South Capitol Street Project. This noise analysis predicted future noise levels (design year of 2040) for the Revised Preferred Alternative and compares those levels with existing noise levels and the DDOT noise abatement criteria (NAC).

The noise analysis was completed in accordance with FHWA traffic noise regulations, as prescribed in 23 CFR 772 (July 2011) and *Highway Traffic Noise Analysis Abatement Policy and Guidance* (January 2011), and in conformance to the DDOT *Noise Policy* (April 11, 2011). Traffic-related noise impacts evaluation consists of the following elements:

- Identification of existing activities. (Section 2.3)
- Measurement of existing noise levels. (Section 2.4)

- Prediction of future noise levels and identification of potential impacts. (Section 2.5)
- Evaluation of appropriate abatement measures. (Section 3.1)
- Qualitative assessment of potential short-term construction-related noise effects, and outline of potential measures procedures. (Section 4.0)

1.1 Setting

South Capitol Street was a primary corridor in L'Enfant's 1791 Plan for the City of Washington and has always been envisioned as a symbolic gateway to the city and its Monumental Core. South Capitol Street connects downtown Washington to neighborhoods in the southeast and southwest quadrants of the District of Columbia and Prince George's County, Maryland.

Today for most of its length, South Capitol Street is classified as a principal arterial between Independence Avenue and M Street and as an expressway/freeway between M Street and Firth Sterling Avenue SE. It was designed to carry high volumes of motor vehicle traffic through the corridor and it is a primary transportation link between the Monumental Core and the southeast and southwest neighborhoods of the District of Columbia, northern Virginia, and Prince George's County (Maryland). It is one of the District of Columbia's primary commuter routes, providing access between the District of Columbia, northern Virginia, and southern Maryland. Portions of South Capitol Street, including the Frederick Douglass Memorial Bridge, Interstate 295 (I-295) and Suitland Parkway are included on the National Highway System. In addition, DDOT has identified South Capitol Street and Suitland Parkway as emergency event/evacuation routes.

1.2 Purpose and Need

The purpose of the South Capitol Street project is to improve safety, accessibility, multimodal mobility and support economic development in the project area. The proposed transportation improvements incorporate long-term environmental sustainability and context sensitive design. Specifically, the project addresses the following needs:

- **Safety:** The design and deteriorating condition of the transportation infrastructure in the corridor creates safety concerns for motorists, bicyclists, pedestrians, and transit riders.
- **Mobility:** Missing critical regional roadway connections and the lack of facilities for bicyclists and pedestrians, establish the need to improve multimodal mobility in the South Capitol Street Corridor.
- **Accessibility:** There are several key destinations in or adjacent to the corridor, but these locations are difficult to reach using the existing transportation infrastructure. Grade separations, median barriers, and ramp and intersection configurations limit access to activity centers for motorists, bicyclists, pedestrians, and transit riders.

- **Economic Development:** The density of employment and residential development forecasted for the area demonstrate the need to support economic growth. Public-driven development will add jobs and create new residential neighborhoods.

1.3 Project Area

The South Capitol Street project area is located in the Southwest and Southeast quadrants of the District of Columbia adjacent to the Anacostia River (Figure 1). The northern boundary is at D Street at the US Capitol. The eastern boundary follows 2nd Street SE west of the Anacostia River and expands to the east of the Anacostia Metrorail station parking deck north of Interstate 295 east of the river. The western boundary is just west of 2nd Street from Independence Avenue SW from to T Street SW north of the Anacostia River and Mitscher Road SW in the Anacostia Naval Station. The Southern boundary of the project area is just south of the Barry Farms neighborhood (near the intersection of Wade and Stevens Roads SE) and includes a portion of St. Elizabeths West Campus.

1.4 No-Build and Preferred Alternative

1.4.1 No Build Alternative

The No Build Alternative for the South Capitol Street Project consists of the existing street conditions and transportation projects that will be completed by the design year 2040 within the project area. The No Build Alternative does not meet the Project purpose and need and therefore is not evaluated in the SFEIS.

1.4.2 Overview of Build Alternatives in the FEIS

As described in Chapter 2 of the FEIS, the alternatives development process for the Project consisted of four iterations of alternatives: the Initial Build Alternatives; the Preliminary Build Alternatives; the Build Alternatives evaluated in the DEIS; and the Build Alternatives evaluated in the FEIS. Each iteration of alternatives development included consideration of planning, engineering, and environmental input with public and agency comments. All of the build alternatives included a new bridge to replace the existing Frederick Douglass Memorial Bridge, with an alignment that slanted or skewed from the existing bridge alignment. The rationale for this skewed bridge alignment, in part, was to provide adequate clearance for operating the swing-span on the existing bridge during the new bridge construction. The Build Alternatives of the FEIS only included a movable type bridge for the replacement.

Figure 1: Project Study Area

1.4.3 Revised Preferred Alternative Description

The Revised Preferred Alternative presented in the SFEIS incorporates the design changes based on evaluations in the project area. For descriptive purposes, the proposed design changes to the Project are described by segments numbered 1 through 5 (Figure 2). Segment 1 includes the area over the Anacostia River, including the riverside areas immediately west and east of the river. Segment 2 includes I-295, but also the area where Suitland Parkway connects with South Capitol Street. Segment 3 includes Suitland Parkway east of Firth Sterling Avenue. Segment 4 includes South Capitol Street on the west side of the river from M Street to D Street, SE. Segment 5 encompasses the areas north of I-695 to Independence Avenue, but also includes New Jersey Avenue SE between M Street SE and D Street, SE.

Segment 1

Segment 1 encompasses the Anacostia River and the land areas immediately on both the west (near the Nationals Ballpark and Buzzard Point) and east (near Anacostia and Poplar Point) ends of the river. This segment includes the new Frederick Douglass Memorial Bridge.

The proposed new bridge alignment of the Revised Preferred Alternative would be located parallel to and approximately 30 feet from the south side or downstream from of the existing bridge superstructure. Similar to FEIS Preferred Alternative, the new proposed bridge under the Revised Preferred Alternative would support six travel lanes (three lanes in each direction), and bike/pedestrian paths. The bike/pedestrian paths would be located on opposite sides of the bridge, the same as what was proposed for the FEIS Preferred Alternative. However, each path would be approximately 18 feet wide, or two feet narrower than what was proposed in the FEIS. For each path, separate areas would be provided for cyclists and pedestrians. For cyclists, both paths would provide for two-way traffic.

The west end traffic oval was slightly reduced in size and would no longer require land from the Nationals Ballpark sidewalk and Reservation 245. The oval would still connect South Capitol Street, the new bridge, Potomac Avenue, G Street SW and R Street SW. On the west end of the bridge near the oval, the design could allow staircases to connect with the riverfront on both the north and south sides of the bridge.

The re-alignment of the proposed bridge necessitated a redesign of the traffic circle on the east end of the river to a traffic oval similar in size and scale to the traffic oval proposed on the west side of the river. The intention is to aesthetically match both the west and east end ovals. The east oval would be located completely within the DDOT right of way, and it would still allow connections between the new Frederick Douglass Memorial Bridge, and realigned South Capitol Street and Suitland Parkway.

Unlike the traffic circle proposed under the FEIS Preferred Alternative, the east traffic oval in the Revised Preferred Alternative would not directly connect~~ion~~ with Howard Road in the near term. Instead, the initial configuration of Howard Road would connect directly with Suitland Parkway. The east oval would sever the existing access roads into the Poplar Point section of Anacostia Park. To maintain park access, the northeast leg of the east oval would be used for both the park's ingress and egress at Poplar Point.

There are currently two design options for the Frederick Douglass Memorial Bridge. The first option is for a fixed span bridge and the second is for a moveable span.

Segment 2

Segment 2 encompasses I-295 and the area between this freeway and the proposed east traffic oval, including Suitland Parkway and South Capitol Street. The existing I-295 / Suitland Parkway Interchange would be modified from a partial cloverleaf interchange to an urban diamond interchange that would allow all movements between Suitland Parkway and I-295. The east side cloverleaf ramps would be removed and replaced with diamond ramps. A diamond ramp (Ramp B) would be provided for southbound I-295 to eastbound Suitland Parkway movements. The ramp would have a gradient of 6.5 percent to be within highway standards. The interchange modification would require replacing the I-295 bridge over Suitland Parkway and widening the southbound I-295 bridge over Howard Road SE for a ramp to Suitland Parkway. Suitland Parkway would be reconstructed from Firth Sterling Avenue SE to the proposed traffic circle. Firth Sterling Avenue would be reconstructed from Suitland Parkway to Howard Road SE.

Segment 2 will be completely built upon completion of Segment 3. The section of Suitland Parkway within Segment 2 will consist of three lanes in each direction when fully built. The eastbound side of Suitland Parkway will also have a sidewalk and bike path.

The I-295 bridges over Howard Road SE and Firth Sterling Avenue SE would also be replaced as they have been identified to be in poor condition. The bridge over Firth Sterling Avenue SE is also over an inactive railroad right-of-way owned by CSX Transportation, Inc. (CSX). Instead of bridging over the CSX right-of-way, the right-of-way would be replaced with earthen fill. Therefore, the new I-295 bridge over Firth Sterling Avenue SE would be shorter.

Segment 3

Segment 3 covers Suitland Parkway from Firth Sterling Avenue SE east to just south of Stanton Road SE. Suitland Parkway would be reconstructed from Firth Sterling Avenue SE to the segment of the Parkway just south of Stanton Road SE. This would include removing ramps connecting with Stanton Road SE and Sheridan Road SE. The Martin Luther King Jr. Avenue SE overpass would be converted into an urban diamond interchange where new ramps on both sides of the Suitland Parkway would provide for all possible movements between the Parkway and Martin Luther King Jr. Avenue SE. In addition, a sidewalk/bike path would be provided or upgraded along the north side of the reconstructed Suitland Parkway.

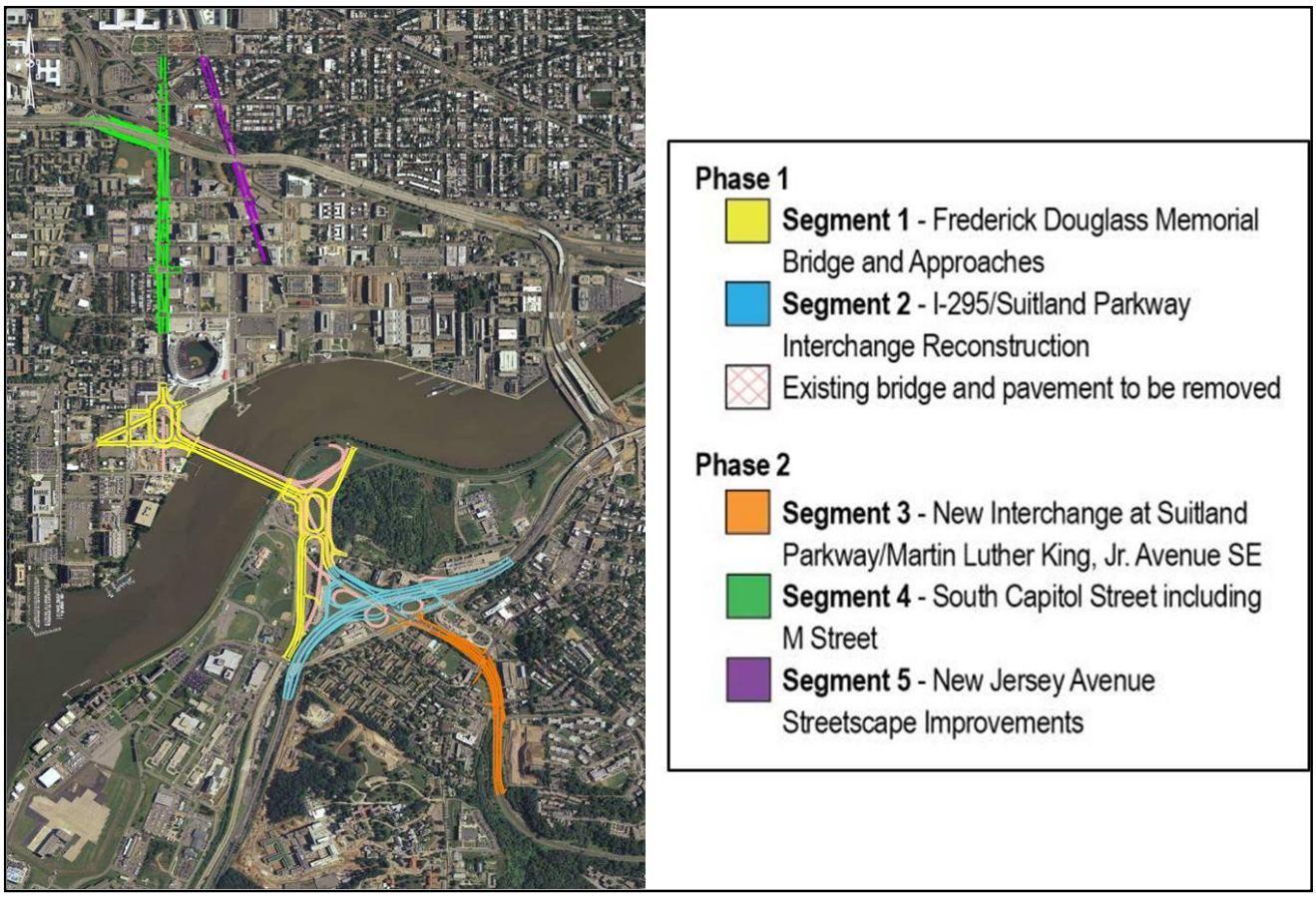


Figure 2: Segments of the South Capitol Street Project

Segment 4

Segment 4 covers South Capitol Street, north of the Anacostia River, from Potomac Avenue to D Street, SE. The South Capitol Street and M Street interchange would be converted to an at-grade intersection with left-turn bays. The intersection work would include reconstruction of M Street SW roughly between Half Street SE and Half Street SW. South Capitol Street from M Street to I Street would be converted into an urban boulevard, with wider sidewalks and modified intersections with L and K Streets to allow cross-street movements. The ramp carrying northbound South Capitol Street traffic to westbound I-695 located just north of the I Street intersection would be removed and replaced with an urban interchange ramp from South Capitol Street that would be located underneath the I-695 Viaduct.

The segment of South Capitol Street north of I Street would be reconstructed due to the elimination of the northbound ramp. The eastbound Southeast-Southwest Freeway off-ramp to southbound South Capitol Street would be modified to an urban interchange ramp with South Capitol Street. The modified ramp would require a signalized

intersection with South Capitol Street. It could allow right-of-way occupied by the old ramp to be used for slightly expanding the size of Randall Recreation Center. Other changes to the design include minor modifications to lane configurations along South Capitol Street. An enhanced streetscape, including pedestrian amenities, would be provided on South Capitol Street from I-695 to Independence Avenue.

Segment 5

Segment 5 New Jersey Avenue SE between M Street SE and D Street, SE. An enhanced streetscape would be provided along New Jersey Avenue SE between M Street SE and D Street, SE. Within the segment between M Street SE and I-695, the full 160-foot right-of-way would be restored.

2.0 Traffic Noise Analysis

2.1 Sound Descriptors

Noise levels are measured in units called decibels. The human ear does not respond equally to all frequencies (or pitches), so measured noise levels are often adjusted or weighted to correspond to human response to the range of sound frequencies and the perception of loudness. To achieve this adjustment, noise measuring instruments incorporate an electronic weighting process to simulate the subjective response of the human ear. One of the commonly used weightings in noise measurement equipment (sound level meter) is called “A-weighting,” and the resultant noise level as measured by a sound level meter is called the “A-weighted sound level” (dBA).

Traffic noise levels are expressed in terms of hourly equivalent continuous noise level which is abbreviated as L_{eq} (1-hr) dBA. The L_{eq} (1-hr) is defined as the equivalent steady-state sound level that, in a period of one hour, contains the same acoustic energy as the time-varying sound level during that hour. This descriptor correlates well with human response to changes in noise levels. The one-hour equivalent noise level during the loudest traffic hour, expressed as L_{eq} (1-hr) dBA, is used by FHWA and DDOT as the descriptor for assessing the effects of traffic noise. Measurement of existing noise level, prediction of future noise levels, and noise impact assessments contained in this report were evaluated using the L_{eq} (1-hr) dBA descriptor.

2.1.1 Human Perception of Changes in Noise Levels

Noise is unwanted sound as defined by the FHWA *Highway Traffic Noise Analysis Abatement Policy and Guidance*. Environmental noise varies from place to place; it also varies during different time periods consistent with the daily cycle of human activities. For reference and orientation to the decibel scale, representative environmental noise sources and their respective dBA levels are shown in Table 1 and Figure 3.

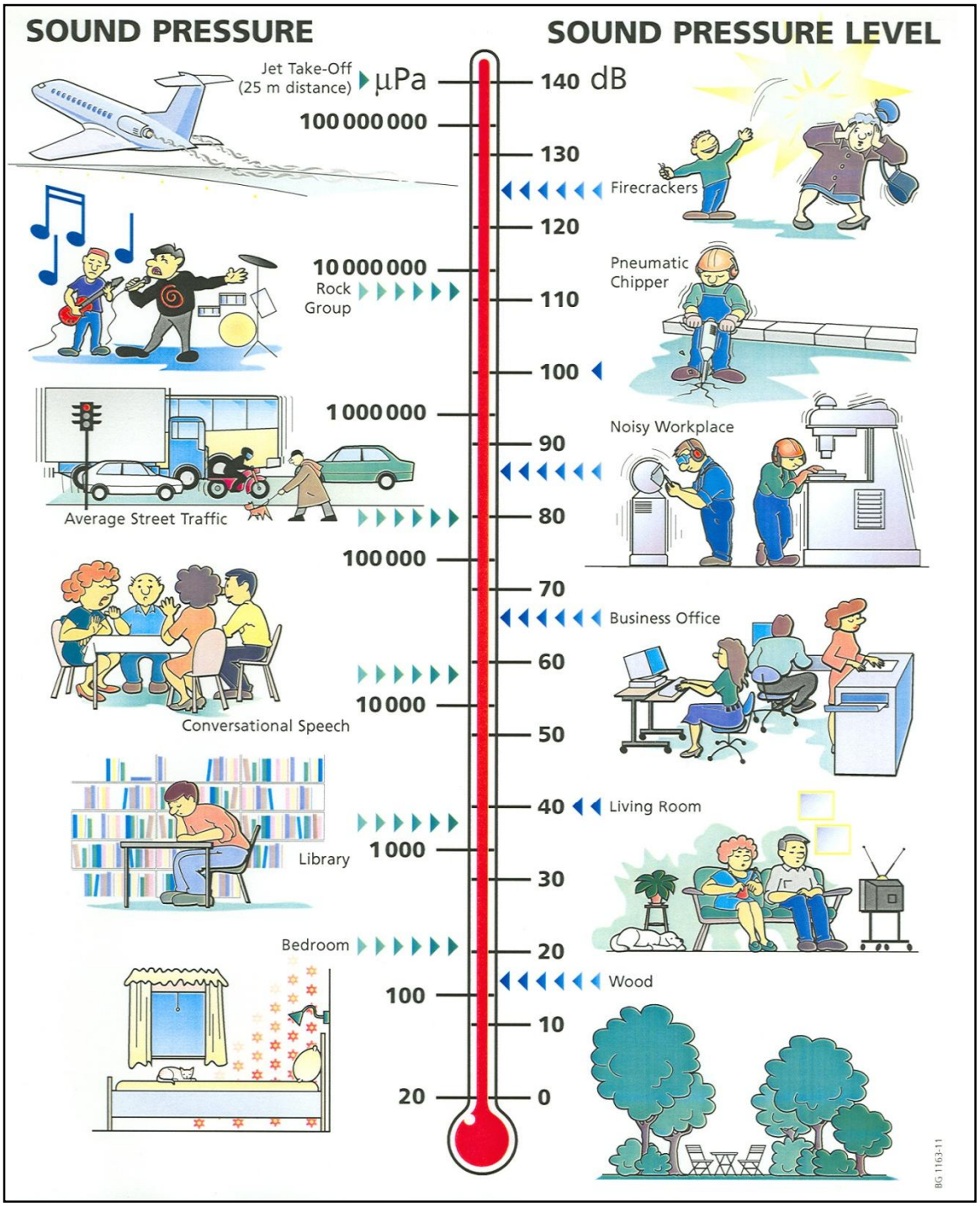
The average individual’s ability to perceive changes in community noise levels is well documented. Generally, changes in noise levels on the order of 3 dBA or less will be barely noticed by most listeners, a change of 5 dBA is readily perceptible, whereas a 10 dBA change will be perceived as doubling (or halving) of loudness. The general principle on which most noise acceptability criteria is based is that an increase in noise level is

likely to affect speech intelligibility whenever such increase intrudes upon the existing noise from all other sources.

Table 1: Common Noise Levels and Typical Reactions

Sound Source	Noise Level (dBA)	Apparent Loudness	Typical Reaction
Military jet, Air raid siren	130	64x as loud	Limit amplified speech
Amplified rock music	110	16x as loud	Maximum vocal effort
Jet takeoff at 500 meters	100	8x as loud	Cover ears extreme annoyance
Freight train at 15 meters	95	6x as loud	Very annoying
Heavy truck at 15 meters, Busy city street	90	4x as loud	Very annoying
Busy traffic intersection	80	2x as loud	Annoying
Highway traffic at 15 meters	70	Base reference	Telephone use difficult
Light car traffic at 15 meters	60	½ as loud	Intrusive
Noisy office	50	¼ as loud	Beginning of speech interference
Public library	40	$^{1}/_{8}$ as loud	Quiet
Soft whisper at 5 meters	30	$^{1}/_{16}$ as loud	Very quiet
Threshold of hearing	10	$^{1}/_{62}$ as loud	Just audible

Source: Road and Rail Noise: Effects on Housing, Canada Mortgage and Housing Corporation (1981)



Source: Brüel and Kjær. Environmental Noise, Sound and Vibration Measurements (2000)

Figure 3: Sound Pressure and Sound Pressure Levels

2.2 Criteria for Determining Noise Impacts

The basic goals of noise criteria, as they apply to transportation projects, are to minimize the adverse noise impacts on the community and, where necessary, to provide feasible and reasonable measures to abate noise impacts.

FHWA regulations 23 CFR 772 contain the Noise Abatement Criteria (NAC), which represent the upper limit of highway traffic L_{eq} (1-hr) noise levels for exterior land uses and activities, and also for certain indoor activities. The NAC represents the noise impact criteria level above which traffic noise will begin to intrude on the existing noise environment for a given land use. FHWA and DDOT traffic noise abatement criteria are presented in Table 2.

Table 2: Noise Abatement Criteria for Highway Projects

Activity Category	Activity Criteria Leq(h)	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quietness of extraordinary significance serve an important public purpose and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67	Exterior	Residential
C	67	Exterior	Active spot areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	--	--	Agriculture, airports, busy yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retails facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	--	Undeveloped lands that are not permitted.

Source: Federal Highway Administration 23 CFR 772 and DDOT Noise Policy (2011).

Federal regulations state that: "noise impacts occur when the predicted traffic noise levels approach or exceed the NAC levels or when the predicted traffic noise levels substantially exceed the existing noise levels." Accordingly, the DDOT Noise Policy indicates that a traffic noise impact occurs when predicted noise levels approach or exceed the NAC, or when the predicted future noise levels substantially exceed existing noise levels. DDOT defines "approach noise level" as 1 dBA below the NAC. For example, for receptor sites falling under FHWA Category "B" land use (Table 2), an impact is considered to have occurred when exterior traffic noise level within the project is equal to or exceed a L_{eq} (1-hr) of 66 dBA (i.e., 1 dBA less than the NAC of 67 dBA for that category of land use). For interior spaces falling under FHWA land use "Category B," a noise impact is considered to have occurred when the interior noise level within the project is equal to or exceeds a L_{eq} (1-hr) of 51 dBA.

In addition to the NAC criteria presented in Table 2, a traffic noise impact can occur when future noise levels resulting from the Build Alternative exceed existing noise levels by a substantial margin. DDOT guidelines define a substantial noise increase as an increase in noise levels of 10 decibels or more in the design year over the existing noise level. This guideline is derived on the basis of interference with speech communication. Minor speech interference occurs when build noise levels rise in the 5 to 10 decibel range and moderate interference can be expected to occur when build noise levels increase by 10 to 15 decibels. Noise level increases of less than 5 decibels will not affect speech intelligibility.

2.3 Existing Activities

2.3.1 Land Use Activities

The DDOT Noise Policy recommends an inventory of existing/planned land uses to identify existing activities. Also, undeveloped lands within the project area are further investigated to determine if there is a commitment to develop the property (typically by issuance of a building permit).

Land uses within the project area were identified through field visits in August 2013 and use of recent aerials, topographic maps, the District of Columbia DC Atlas Plus on-line mapping tool, and Capitol Riverfront Business Improvement District project inventory (August 2013). Noise activity categories from Table 2 were assigned to appropriate land uses within the project area. Vacant properties with known future land use, or undeveloped properties, were further researched to determine if there is a commitment to develop the property and the appropriate noise activity category was assigned to these land uses.

Table 3 details how the project area was divided geographically into twelve common noise environments (CNEs) and describes the corresponding land use and noise activity categories for the noise-sensitive receptors within each. The CNEs were selected based on how project traffic volumes were graphically presented in a spreadsheet, which were identified based on changes in traffic related to land use activities. The spreadsheet which presents Project traffic volumes is referenced in Appendix D. The CNEs throughout the project area are listed beginning from south to north:

1. Suitland Parkway between west of Stanton Road SE and Martin Luther King Jr. Avenue SE;
2. Suitland Parkway between Martin Luther King Jr. Avenue SE and I-295;
3. Suitland Parkway between I-295 and South Capitol Street;
4. I-295 between south of Defense Boulevard and 11th Street Bridge exit;
5. South Capitol Street between south of Defense Boulevard and Potomac Avenue;
6. South Capitol Street between Potomac Avenue and N Street;
7. South Capitol Street between N Street and M Street;
8. South Capitol Street between M Street and I Street;
9. South Capitol Street between I Street and Southeast-Southwest Freeway (I-395);
10. South Capitol Street between I-395 and Independence Avenue;
11. New Jersey Avenue between M Street and I-395; and
12. New Jersey Avenue between I-395 and Independence Avenue.

Table 3: Land Use Activities

Location	Activity	Identified Categories
CNE-1 Suitland Parkway between west of Stanton Road SE and Martin Luther King Jr. Avenue SE	• Land uses on the west side include Martin Luther King Child Development Center (south of Pomeroy Road), multi-story townhomes (along Pomeroy Road), Parkway House (multi-story apartments north of Pomeroy Road), Matthews Memorial Baptist Church campus (south of Stanton Road SE - includes multi-story apartment, playground and educational center), the Campbell AME Church campus (north of Stanton Road SE - includes a church and residence), and churches adjacent to the west side of Martin Luther King Jr. Avenue SE. • Land uses on the east side include multi-story single family homes (south of Pomeroy Road), Sayles Place Cooperative (multi-story apartments with playground and basketball court on both sides of Pomeroy Road), Macedonia Baptist Church on Stanton Road SE, single-family residences north of Bowen Road, multi-story apartments (Oxford Manor) south of Bowen Road, Sheridan Station (multi-story condominiums and apartments and playground at the northeast quadrant of Sheridan Road and Bowen Road, Children's Center on Sheridan Road, Bethlehem Baptist Church and Dr. Calvin W. Rolark Memorial Building (both on Howard Road SE south of Martin Luther King Jr. Avenue SE). • A large vacant property east of Sheridan Road between Pomeroy Road and Bowen Road was observed to be	B/C/G

Table 3: Land Use Activities

Location	Activity	Identified Categories
	under construction during the field visit in August 2013 (no permit - Category G). However, what appears to be construction associated with residential development was observed during the field visit. Two Category B noise receptors were provided in the front and back of the property.	
CNE-2 Suitland Parkway between Martin Luther King Jr. Avenue SE and I-295	• Land uses on the west side include Excel Academy (former Birney School – north side of Martin Luther King Jr. Avenue SE), Barry Farm facilities (including pavilion, basketball courts, baseball field and outdoor swimming pool) and housing (multi-story multi-family residences), and single-family residences and multi-story apartments west of Sumner Road. • Barry Farm's baseball field was observed to be under construction during the field visit in August 2013, and signs indicate this is the future location of a multi-story building Barry Farm Recreation Center. • Land uses on the east side include the Anacostia Metro Station, United House of Prayer for All People Church (adjacent to Suitland Parkway), A. Kiger Savoy School (west of Howard Road SE – includes playground and basketball court), and Thurgood Marshall Academy.	B/C/F
CNE-3 Suitland Parkway between I-295 and South Capitol Street	• Land uses on the west side include DDOT-owned properties used for parking and maintenance operations. • Land uses on the east side include the Washington D.C. Mental Health building and Howard Road Academy and playground, single-family residences, industrial buildings, a parking structure for the Anacostia Metro Station (currently Category F but planned for residential redevelopment – Category B), and vacant properties (no future land use/permit - Category G) adjacent to Anacostia Park on Howard Road SE. Category B noise receptors were provided for these properties based on information that adjacent properties likely are planned for residential developments.	B/C/F/G

Table 3: Land Use Activities

Location	Activity	Identified Categories
CNE-4 I-295 between south of Defense Boulevard and 11th Street Bridge exit	• Land uses west of Suitland Parkway include the Joint Bolling Air Base JBAB, multi-story apartments on the south side of Firth Sterling Avenue SE and Verizon building. • Land uses east of Suitland Parkway include offices and parking structure at Anacostia Park, and St. Philips Episcopal Church, multi-story apartments, townhomes and single-family residences all located south of I-295 along Shannon Place SE.	B/C/F
CNE-5 South Capitol Street between south of Defense Boulevard and Potomac Avenue	• Land uses on the west side include the JBAB office buildings and outdoor recreational facilities (baseball field, tennis courts, park benches and pavilions), DDOT-owned property used for maintenance operations and the Superior Concrete property (north of the Anacostia River). • Land uses on the east side include DDOT-owned properties used for parking and maintenance operations, Anacostia Park, and vacant property north of the Anacostia River (future mixed residential/commercial development Riverfront on the Anacostia).	B/C/E/F
CNE-6 South Capitol Street between Potomac Avenue and N Street	• Land uses on the west side include industrial/automotive buildings north of Potomac Avenue, U-Haul (south side of P Street), multi-story townhomes at the northeast quadrant of Half Street and Q Street, Syphax Gardens Apartments (at the southwest quadrant of Half Street and P Street), multi-story townhomes between P Street and O Street, Camden South Capitol Apartments (north of O Street), multi-story townhomes on Half Street, multi-story townhomes on South Capitol Street south of N Street, multi-story townhomes on N Street, and retail establishments south of N Street. • Nationals Stadium, stadium entry and parking structure are on the east side of South Capitol Street.	B/E/F
CNE-7 South Capitol Street between N Street and M Street	• Land uses on the west side include paved parking lots, retail and restaurant establishments, Washington DC Superior Court offices, and multi-story townhomes (behind retail/restaurant/offices to Half Street). • Land uses on the east side include paved parking lots (between South Capitol Street and Half Street) and Public Storage.	B & E

Table 3: Land Use Activities

Location	Activity	Identified Categories
CNE-8 South Capitol Street between M Street and I Street	• Land uses on the west side include 7-Eleven and paved parking lot (north of M Street), gravel parking lot and UPS (between L Street and K Street), and Capitol Skyline Hotel. • Land uses on the east side include St. Vincent De Paul Church (northeast quadrant of South Capitol Street and M Street), business offices north side of M Street, business offices on Half Street, vacant property at the northeast quadrant of South Capitol Street and L Street (future business office), vacant property at the southeast quadrant of South Capitol Street and I Street (no future land use/permit - Category G), vacant property at the southwest quadrant of Half Street and I Street (future residential development) and vacant property on the south side of I Street (future residential development Congressional Square).	B/C/E
CNE-9 South Capitol Street between I Street and (I-395	• Land uses on the west side include Washington DC owned recreation center building and Randall Pool and Recreation Center facilities (outdoor swimming pool, basketball court, tennis courts, baseball fields, and multi-purpose field) at the northwest quadrant of South Capitol Street and I Street, Capitol Park Plaza Condominium and multi-story apartments with playground along the I-395 off ramp to South Capitol Street. • Land uses on the east side include McDonald's, industrial buildings/facilities adjacent to I-395 and Capital Yards Apartments and restaurants on I Street.	B/C/E/F
CNE-10 South Capitol Street between I-395 and Independence Avenue	• Railroad tracks and railroad facilities are located adjacent to the north side of I-395. • Land uses on the west side include Verizon office building north of I-395, Fairchild office building north of E Street and business/government offices between C Street and Independence Avenue. • The Spirit of Justice Park is located on the west and east side of South Capitol Street. • Land uses on the east side include a power plant for the US Capitol and its maintenance and office buildings between I-395 and E Street, business office buildings and auto garage at the northeast quadrant of South Capitol Street and E Street, multi-story townhomes at the southeast quadrant of South Capitol Street and D Street, and business/government offices between C Street and Independence Avenue.	B/C/F

Table 3: Land Use Activities

Location	Activity	Identified Categories
CNE-11 New Jersey Avenue between M Street and I-395	• Land uses on the west side include vacant property at the northwest quadrant of New Jersey Avenue and M Street (future residential development), multi-story apartment and business office on 1st Street, St. Matthews Baptist Church (south of L Street), Eagle Academy (preschool/daycare – north of L Street), multi-story apartment with an outdoor swimming pool (between K Street and I Street), and vacant property between I Street and I-395 (no future land use/permit – Category G). • Land uses on the east side include business office (between M Street and L Street), Marriott Courtyard Hotel and residential condominiums (between L Street and K Street), Washington Canal Park (behind Marriot Courtyard Hotel), property undergoing earthwork at the northeast quadrant of New Jersey Avenue and K Street during the field review August 2013 (future residential developments Park Chelsea and Square 739), and property undergoing earthwork at the southeast quadrant of New Jersey Avenue and I-395 during the field review August 2013 (former parking lot, no permit – Category G).	B/C/G
CNE-12 New Jersey Avenue between I-395 and Independence Avenue	• Land uses on the west side include railroad tracks and a power plant facility for the US Capitol and maintenance buildings, multi-story townhomes (between E Street and D Street), the Spirit of Justice Park (between D Street and C Street) and business/government offices (between C Street and Independence Avenue. • Land uses on the east side include Garfield Park north of I-395, a commercial establishment at the southeast quadrant of New Jersey Avenue and E Street, multi-story townhomes north of Garfield Park to D Street, paved parking lot (between D Street and C Street) and business office (between C Street and Independence Avenue.	B/C/E/F

2.3.2 Noise-Sensitive Receptors

According to DDOT Noise Policy, a noise-sensitive receptor is a location that registers measurable sound levels, typically a residence or other use that could potentially be negatively affected by traffic noise. A receptor is a discrete or representative location of a noise sensitive area, for any of the land uses listed in Table 2.

Noise-sensitive receptors to be used in the noise model are established based on land use assignments completed in Section 2.3.1 and presented in Table 3.

The DDOT Noise Policy states noise-sensitive receptors are typically limited to within 600 feet of the proposed improvements. A noise-sensitive receptor is typically located within 600 feet of the proposed improvement in areas of the project where the primary noise sources roadways are proximal (e.g., at I-295 and Suitland Parkway and at I-395 and South Capitol Street) and it is anticipated based on proximity of roadways and roadway traffic volumes that noise propagation would be significant.

However, in areas where noise-sensitive receptors consists mostly of the exterior areas of medium to high density and multi-story residential land uses (Category B) and business offices (Category E), direct line-of-sight noise propagation was mostly limited to first row land uses with receptors adjacent to the primary noise source roadways (e.g., along Suitland Parkway and South Capitol Street). At these areas, second row, third row, and other land uses beyond the typical exposure distance to highway noise were generally shielded by intervening mid-rise to high-rise buildings. Hence, noise propagation likely would be obstructed by intervening buildings and significant noise likely would not reach up to 600 feet of the proposed improvement. At these areas, noise sensitive receptors are located proximal to the primary noise source roadway and not necessarily up to 600 feet of the proposed improvements.

Based on the initial results of the noise model, areas where noise-sensitive receptors are deemed necessary for the noise study are then further expanded to account for all potentially impacted noise-sensitive receptors. At the minimum, a noise receptor was provided for each land use within the project area for activity categories B through E. Receptors were also provided for Category G properties determined to have future noise-sensitive land use (categories B, C, or E). For select Category B and E properties, upper floor receptors (for multi-story buildings with areas of frequent exterior human use such as balconies or elevated outdoor recreation areas) were added to determine if noise levels would approach or exceed the NAC at these elevated locations, specifically when the first floor noise receptor did not approach or exceed the NAC. Procedures outlined in Appendix A of the DDOT Noise Policy were followed in determining placement of noise receptors for Category C properties (parks and recreation areas) that may potentially approach or exceed the NAC. The noise-sensitive receptors included in this study are shown in plans in Appendix A.

2.4 Existing Noise Measurements and Model Validation

Representative monitoring locations were established for measurements of existing noise conditions, which were then used for validation of the noise model. The locations were distributed along primary noise source roadways and adjacent to categories B (residential) and E (business offices) uses which represent the majority of land uses found in the project area. Four noise measurement locations were identified for the project area (Figure 4).

Validation noise measurements were collected during the period covering August 5 through 7, 2013. Noise measurements were made during the mid-morning or mid-afternoon peak traffic periods, between 9:30 AM to 11:30 AM and 1:30 PM to 3:30 PM, when traffic was observed to be at free-flow in most cases. Noise measurements were taken in conformance with national standards in accordance with procedures described

in *the FHWA Highway Traffic Noise: Analysis and Abatement Guidance (June 2010 revised December 2010).*

All measurements were taken at locations adjacent to roadways where development currently exists or where development has been planned and programmed, and may be affected by traffic noise from the project due to proximity to the primary noise source roadway.

The duration of each measurement was 20 minutes to provide a statistically representative data sample. Two measurements were taken at each of the four sites. Measured noise levels were typical of traffic noise conditions near major roadways, which are characterized by higher noise levels closer to the roadways and lower noise levels farther from the roadways.

Noise measurements were collected by using a tri-pod mounted CEL 593 sound level meter and a Bruel & Kjaer 4231 acoustical calibrator, both of which are ANSI Type 1 instruments. The CEL 593 sound level meter and its microphone were calibrated in the laboratory on June 4, 2010 by Casella USA, and on October 15, 2013 by West Caldwell Calibration Laboratories, Inc. The Bruel & Kjaer 4231 acoustical calibrator was calibrated on June 14, 2012 by West Caldwell Calibration Laboratories, Inc. Laboratory calibration certificates are included in Appendix B.

Figure 4: Noise Measurement Locations

Field calibration of all noise equipment was performed before each measurement was recorded. The microphones were mounted at an approximate height of five feet above ground level, which correlates to the average position of the human ear. Traffic speeds were observed from posted speeds or the highest overall speed of vehicles in the traffic flow (approximated by pacing traffic) during the time of field measurement. Traffic volumes by vehicle classification and vehicle speeds were observed and counted during each 20-minute measurement period. All measurements were performed under acceptable climatic and street surface conditions. Field noise measurement data sheets are included in Appendix C.

Per FHWA and DDOT policy, for a noise model to be validated the difference between measured and predicted noise levels must be 3 dBA or less. Table 4 presents the field measurements and validation results, showing that the model meets the validation requirement.

Table 4: Existing Noise Measurements and Model Validation Results

Site	Site Address	Land Use	Date	Start/End Time	Measured Noise Level L_{eq} (h) (dBA)	Predicted Noise Level L_{eq} (h) (dBA)	Difference (dBA)[1]
1	2502 Stanton Street	Single-Family Residential	8/5/13	10:21 AM 10:46 AM	64	66	2
2	1345 South Capitol Street	Apartments Residential	8/5/13	1:45 PM 2:14 PM	73	71	2
3	K Street and South Capitol Street	Office	8/6/13	11:18 AM 11:47 AM	73	70	3
4	100 I Street SE	Residential/ Mixed Use	8/7/13	10:57 AM 11:21 AM	62	61	2

2.5 Predicted Noise Levels

The primary source of noise in the project area is motor vehicles traveling along Suitland Parkway SE, I-295, South Capitol Street (including the Frederick Douglass Memorial Bridge), and I-395. Other local connecting roadways such as Martin Luther King, Jr. Avenue SE, Firth Sterling Avenue SE and M Street are also significant sources of noise. Predicted noise levels for the Revised Preferred Alternative were calculated using the FHWA's Traffic Noise Model® (TNM), Version 2.5, released in 2004, and compared to the No-Build Alternative and to the existing condition. The noise model results are also compared to the previous noise study results from the FEIS and presented in Section 6.0.

[1] Values are rounded to the nearest whole decibel.

2.5.1 Noise Model Development and Traffic Volumes

Noise Model Development

DDOT Noise Policy states that construction of an adequate noise model requires three-dimensional coordinates for the existing condition and proposed alternatives. The existing, No-Build Alternative, and Revised Preferred Alternative noise model elements (noise receptors, roadways, ground zones, and intervening buildings represented by fixed-height noise barriers) were developed by Parsons Brinckerhoff in MicroStation® using field review information, GIS, and available recent aerial photography (in digital state-plane coordinates). MicroStation® files of topographic maps, existing and build condition contour elevations, and proposed improvement engineering design (includes roadway improvements only) for segments 1 through 5 were provided by CH2MHill. All noise model elements were digitized in TNM® 2.5 based on MicroStation® output of three dimensional coordinates (northing and easting coordinates and ground elevation). TNM® 2.5 noise model inputs are included in Appendix C.

The noise study area was defined to encompass noise-sensitive receptors (for all noise activity categories identified in Table 2 with exception of Category F) adjacent to the primary noise source roadways within the project area, including both impacted noise receptors and as well as noise receptors beyond the threshold of the NAC (non-impacted noise receptors).

Existing, 2040 No-Build, and 2040 Build Traffic Volumes

DDOT Noise Policy states that prediction of future noise levels relies on the certified/project traffic volumes for the peak noise hour in the design year, because the peak noise hour is often the peak truck hour. The FHWA *Highway Traffic Noise: Analysis and Abatement Guidance* indicates highway traffic noise also depends on the speed of traffic. The AM and PM peak hour volumes are available from the Draft South Capitol Street Interchange Modification Report (DDOT, October 2013). However, the peak traffic hour is not necessarily the peak noise hour specially when the peak traffic hour shows modeled traffic speeds that are lower than posted speeds, and does not necessarily predict the peak truck hour. Field observations determined that South Capitol Street and Suitland Parkway traffic tend to be at free flow or moves at the posted speed limits between 9:30 am and 10:30 am, and between 2:30 pm and 3:30 pm at daytime operating hours.

Two off-peak hours were selected for noise modeling based on field observation. The loudest-hour noise levels in the study area would be determined by comparing noise model results, specifically for receptors adjacent to primary noise source roadways. Off-peak hour volumes conditions:

- Mid-morning off-peak hour volume when traffic is still moving at LOS C/D conditions. This was defined as the hour between 9:30 am -10:30 am.
- Mid-afternoon off-peak hour volume when traffic is still moving at LOS C/D conditions. This was defined as the hour between 2:30 pm to 3:30pm.

The methodology of estimating these two off-peak hour traffic volumes involved four steps:

1. Developing Average Daily Traffic (ADT) volumes for the project area roadways from the MWCOG travel demand model outputs for 2010, 2040 No-Build and 2040 Build scenarios.
2. Applying appropriate "k" factors to project area roadways to estimate mid-morning and mid-afternoon off-peak hour volumes. These "k" factors were selected based on automatic traffic recorder (ATR) data from St. Elizabeths Study (2009), M Street SE/SW Transportation Study (2012), and M Street Special Events Study (2013).
3. Applying medium and heavy truck percentages based on data from the South Capitol Street FEIS (2011).
4. Estimating the number of buses (e.g., WMATA, regional commuter, DC Circulator, school, and tourist buses) in the area based on traffic counts and current and future transit services in the study area.

The resulting mid-morning and mid-afternoon peak traffic volumes were evaluated in TNM® 2.5 and results were compared to determine the traffic volume which yields the loudest hourly results. Based on the model results, it was determined that use of the mid-afternoon off-peak traffic volumes generally predicted higher noise levels for receptors adjacent to primary noise source roadways. Thus, the mid-afternoon traffic volumes were used for noise analysis of the existing, No-Build, and Revised Preferred Alternative scenarios.

Traffic volumes were entered into the noise model for Suitland Parkway SE, I-295, South Capitol Street (including the Frederick Douglass Memorial Bridge) and local connecting roadways within the project limits. The noise model requires input of hourly traffic volumes and speeds by vehicle type (automobiles, medium trucks, heavy trucks, buses, and motorcycles) for each of the 2010, 2040 No-Build and 2040 Build scenarios. Traffic speeds were based on posted speeds or the highest overall speed of vehicles in the traffic flow (approximated by pacing traffic). The existing condition, 2040 No-Build, and 2040 Build condition traffic volumes are included in Appendix D.

2.5.2 Noise Model Results

The predicted noise levels for the existing, No-Build, and Revised Preferred Alternative conditions were determined from TNM® 2.5. Table 5 summarizes the noise level impact predictions for the Existing, No-Build, and Revised Preferred Alternative scenarios. The full table of predicted noise levels is presented in Appendix E.

Table 5: Summary of Predicted Location Noise Impacts

Project Area	2013 Existing	2040 No-Build	2040 Revised Preferred Alternative
CNE-1	0	0	0
CNE-2	5	5	5
CNE-3	2	1	0
CNE-4	29	26	28
CNE-5	1	1	0
CNE-6	8	8	12
CNE-7	3	5	10
CNE-8	2	2	2
CNE-9	3	4	4
CNE-10	0	0	0
CNE-11	0	0	0
CNE-12	0	1	1

Differences in predicted noise levels between the Revised Preferred Alternative and the No-Build Alternative or existing conditions are also shown in Appendix E. The results showed slight increases in predicted noise levels between the existing condition and the 2040 design year. Front row (adjacent to primary noise source roadways and typically unshielded) noise-sensitive receptors have predicted design year increases over existing condition of up to 3 dBA for receptors adjacent to Suitland Parkway, less than 1 dBA for receptors adjacent to I-295, up to 5 dBA for receptors adjacent to South Capitol Street, and up to 3 dBA for receptors adjacent to South Capitol Street/I-395. These increases can generally be explained by increased traffic volumes and changes to the roadway geometry that shift traffic closer to a noise-sensitive receptor location.

Predicted noise levels presented in Appendix E indicate several noise receptors with noise levels predicted to decrease in the design year (i.e., a negative value in the *Difference Preferred vs. Existing* column). In general, these noise reductions are anticipated in the future because of the fact that traffic volumes (from primary noise source roadways) are expected to reduce from local roadways due to improvements of the I-295 and I-395 interchanges within the project area. The Revised Preferred Alternative allows more vehicular throughput during peak hours along I-295 and I-395 corridors as well as the South Capitol Street corridor. However, the growth of auto traffic demand in the project area freeways and arterials from existing to future conditions is modest, and often negative, because more trips are projected to shift from auto to the transit modes such as buses, metro and street car[2].

The location-specific traffic trends that are contributing to the changes in the noise levels are discussed below:

[2] Draft South Capitol Street Interchange Modification Report, DDOT, October 2013

- **CNE-1:** This segment of Suitland Parkway is projected to have lower traffic volumes in the design year compared to the existing condition. In contrast, future traffic volumes on Martin Luther King Jr. Avenue SE, south of Sumner Road, is projected to increase significantly in the design year. Consequently, the noise-sensitive receptors located on the west side of Suitland Parkway and adjacent to Martin Luther King Jr. Avenue SE are projected to have slightly higher noise levels than existing condition as the traffic increase along Martin Luther King Jr. Avenue SE was partially offset by a traffic decrease along Suitland Parkway.
- **CNE-2:** Several noise-sensitive receptors are located on the south side of Sumner Road and their nearest primary noise source is the northbound lanes of I-295 (and not Suitland Parkway). I-295 northbound lanes are projected to have slightly lower traffic volumes in design year than existing condition.
- **CNE-3:** Due to distance of receptors from adjacent roadways, the primary noise source is Howard Road SE (not Suitland Parkway or I-295). Howard Road SE westbound lanes between I-295 and South Capitol Street have significantly higher traffic volumes in existing condition compared to design year.
- **CNE-4:** This segment of I-295 is projected to have slightly lower traffic volumes in design year than existing condition, which resulted in the drop of noise level.
- **CNE-5:** The proposed Frederick Douglass Bridge would be located south of the existing bridge. Hence, traffic is shifted away from noise-sensitive receptors at Anacostia Park resulting in reduced noise levels in the existing condition compared to the design year.

2.6 Potential Impacts

According to the DDOT Noise Policy, a highway traffic noise impact is deemed to occur when predicted design year noise levels approach or exceed the NAC (listed in Table 2), or are a substantially increase over existing noise levels. Table 5 summarizes the predicted impacts for noise-sensitive receptors throughout the project area. Predicted design year noise impacts are also shown in red and bold in the TNM® 2.5 Predicted Noise Levels in Appendix E for the *2040 Revised Preferred Alternative* (design year) column. Predicted noise levels in Appendix E also presents results of the design year increase over existing noise levels in the *Difference Preferred vs. Existing* column, and shows that a substantial noise increase (10 dBA or more) is not predicted for any noise-sensitive receptor.

3.0 Traffic Noise Abatement

3.1 Evaluation of Abatement Measures

The FHWA and DDOT require that noise abatement measures be considered at all locations where traffic-related noise impacts are identified. As indicated in Table 2, the need to consider abatement is based on the potential for impacts at exterior areas where human activity may occur (i.e., abatement will usually be necessary only where frequent human use occurs and a lowered noise level would be of benefit). In accordance with

FHWA and DDOT requirements, abatement measures were evaluated in terms of their effectiveness to substantially reduce predicted design year noise levels at locations where noise levels exceeded the FHWA and DDOT noise abatement criteria. The following list details all possible noise abatement measures. However, noise barriers are typically the most practical and effective noise abatement measure, and are thus the only measure evaluated in detail.

- **Constructing noise barriers within the proposed right-of-way:** as indicated in the DDOT Noise Policy, construction of noise barriers within the proposed right-of-way is usually the most practical and effective measure; however, the District of Columbia is a dense urban area with existing roadways with narrow right-of-way and historic character with view sheds of national importance (which should be considered when evaluating the implementation of noise barriers).
- **Modifying the proposed horizontal and/or vertical alignment of the roadway:** alteration of horizontal and vertical alignments along South Capitol Street would be constrained by the existing terrain, underlying geology, and surrounding land uses.
- **Acquiring property to serve as a buffer zone:** in general, acquisition of property can reduce noise impacts where unimproved property exists between prediction locations and the proposed alignment.
- **Modifying speed limits and/or restricting truck traffic:** enforcing lower speed limits and limiting roadway use to automobiles only may not be practical on Suitland Parkway, I-295, or South Capitol Street because these roadways are major routes for the movement of a mix of vehicles, including heavy trucks.
- **Providing noise insulation:** noise insulation would likely be implemented on properties that are far from the roadway right-of-way and have no exterior use areas, and would be at the discretion of the property owner.

Non-barrier noise abatement measures such as roadway alignment modifications, buffer zones, traffic and speed modifications, and noise insulations were considered for impacted noise receptors. However, non-barrier abatement measures were determined not viable due to the following reasons:

- **Roadway alignment modification:** Horizontal and vertical roadway alignments were set during the FEIS. As shown in Table 5 of Section 2.5.2, the number of impacted noise receptors between the 2040 No-Build and the 2040 Revised Preferred Alternative are almost similar for most CNEs. This shows that the horizontal and vertical roadway alignments were located at a sufficient distance from noise sensitive receptors that minimizes impacts. To further reduce noise impacts with adjustment to the vertical roadway alignment, the noise line-of-sight between the noise source (roadway traffic) and noise receptor would need to be broken. This is done by significantly lowering the roadway below existing grade to create a cut section, which could act similarly as an earth berm that absorbs noise (depending on the relative location of noise receptors). At this point in the

planning and design phase, adjustments to the horizontal and vertical roadway alignments may not be a viable.

- **Traffic speed modifications:** Traffic speed modifications are already proposed on South Capitol Street in form of at-grade circles on intersections north and south of Anacostia River. The proposed speed limits in these areas would be much lower than the typical speed on South Capitol Street, and would result in generally lower traffic noise. This has been included in future build noise models. Prohibition of heavy trucks (which is a significant source of noise) along South Capitol Street is not practical because the roadway is a major route for the movement of a mix of vehicles, including heavy trucks.

- **Noise insulation:** Noise insulation would likely be implemented on properties that are not in the roadway right-of-way and would be at the discretion of the property owner. Since no traffic noise impacts are predicted to occur for interior noise-sensitive areas (NAC Activity Category D), interior noise insulation was not considered as a potential noise impact mitigation measure. It should be noted that St. Vincent De Paul located in CNE-8 was considered a NAC Activity Category D receptor. Per FHWA guidance, a 25 dB interior/exterior noise reduction factor was used to estimate the interior noise levels based on the predicted outdoor noise level. The resulting interior noise level is below NAC Activity Category D threshold; there is no interior noise impact.

The evaluation of traffic noise impacts and appropriate noise abatement measures are summarized below for each project sub-area (a map of the noise-sensitive receptors is included in Appendix A):

- **CNE-1:** Noise-sensitive receptors in this area are not predicted to approach or exceed the NAC for identified activity category land uses.

- **CNE-2:** Noise abatement measures were considered for impacted Category C (recreational land use) noise-sensitive receptors 1758, 1759, 1760, 1762, and 1764. Noise barrier evaluations followed the procedures provided in Appendix A of the DDOT Noise Policy. Construction of a noise barrier within the existing and proposed Suitland Parkway right-of-way is further evaluated and discussed in detail in Section 3.2.

- **CNE-3:** Noise-sensitive receptor 1859 is currently a parking structure (owned by the Anacostia Metro Station). This site is also a known future residential development (proposed Poplar Point development with a residential component – information obtained from the Office of the Deputy mayor for Planning and Economic Development website); however, engineering plans and building permits are not available (no documentations obtained from developers and no records with local planning agencies). Since there was no concrete information obtained regarding the actual proposed land use as a residential property, this receptor was included in this study for the current land use as Category F

(parking structure). Receptor 1859 would not approach or exceed the NAC of 71 dBA.

- **CNE-4:** Noise abatement measures were considered for impacted Category B noise-sensitive receptors 1860 through 1865, 1874 through 1880 1885 through 1898, 1903 and 1904. Construction of a noise barrier within the existing I-295 right-of-way is further evaluated and discussed in detail in Section 3.2.
- **CNE-5:** Noise-sensitive receptors in this area are not predicted to approach or exceed the NAC for identified activity category land uses.
- **CNE-6:** Noise abatement measures were considered for impacted receptors on the west side of South Capitol Street. Typically 1st row receptors were impacted while back row receptors were shielded by intervening buildings. Impacts included categories B and E noise-sensitive receptors for the following land uses: townhomes with front doors facing South Capitol Street (where frequent exterior human use was observed), Camden South Capitol Apartments (with 2nd story and higher level balconies facing South Capitol Street), and retail establishments (with entrances facing South Capitol Street). To be minimally effective, a continuous noise barrier would need to extend from north of N Street to south of P Street. Such a noise barrier would restrict a pedestrian's ability to cross South Capitol Street anywhere along its length and restrict vehicular access from South Capitol Street to N Street, O Street, P Street, and a parking lot. As a result, the placement of a noise barrier at this location was determined not to be feasible.
- **CNE-7:** noise abatement measures were considered for impacted categories B and E noise-sensitive receptors for the following land uses: townhomes with front doors facing South Capitol Street or M Street and a retail establishment with its entrance facing South Capitol Street. The townhomes are behind business and retail buildings adjacent to South Capitol Street. However, some are directly exposed to noise from M Street or South Capitol Street and are impacted when there are no intervening buildings on the property adjacent to these roadways. The appropriate mitigation is a noise barrier located adjacent to impacted noise receptors, within the M Street and South Capitol Street existing rights-of-way. Such a barrier would restrict pedestrian and vehicular access (through an alley) from the townhomes to M Street. It would also restrict pedestrian access to business/retail establishments to South Capitol Street. As a result, the placement of a noise barrier at this location was determined not to be feasible.
- **CNE-8:** noise abatement measures were considered for impacted Category C noise-sensitive receptors 1400 and 1401 (i.e., St. Vincent De Paul entrance on South Capitol Street and outdoor seating on M Street.) To be effective, a continuous noise barrier would need to be constructed around the church property. The placement of a noise barrier was determined not to be feasible because it would restrict pedestrian access to the cross walks at the north-east corner of South Capitol Street and M Street. Receptor 1400 could potentially also be considered a Category D receptor with interior noise-sensitive use. The church structure is masonry and has no operable windows, so per FHWA guidance a 25 dB interior/exterior noise reduction factor would be used to

estimate the interior noise levels based on the predicted outdoor noise level. The resulting interior noise level would be 45 dBA (70 – 25), which is below the 51 dBA Category D NAC. As a result, there is no interior noise impact at Receptor 1400 which to consider for mitigation.

- **CNE-9:** Noise abatement measures were considered for impacted Category C (recreational land use) noise-sensitive receptors 1171 and 1172 (i.e., Randall Pool and Recreation Center tennis courts and baseball field spectator seating). Noise barrier evaluations followed procedures provided in Appendix A of the DDOT Noise Policy. Construction of a noise barrier within the existing I-395 and South Capitol Street right-of-way is further evaluated and discussed in detail in Section 3.2.
- **CNE-10:** Noise-sensitive receptors in this area are not predicted to approach or exceed the NAC for identified activity category land uses.
- **CNE-11:** Noise-sensitive receptors in this area are not predicted to approach or exceed the NAC for identified activity category land uses.
- **CNE-12:** Noise abatement measures were considered for impacted Category B receptor 1140, which is a townhome near the intersection of E Street and New Jersey Avenue. This receptor is impacted due to its close proximity to North Carolina Avenue SE. To be minimally effective, a continuous noise barrier would need to start at the northeast corner of the New Jersey and North Carolina Avenue intersection and extend northeast around the corner of First Street and North Carolina Avenue. Such a barrier would restrict a pedestrian's ability to cross First Street SE. As a result, the placement of a noise barrier at this location was determined not to be feasible.

3.2 Noise Barriers

For a noise barrier to be incorporated into a project, the barrier must be determined to be both feasible and reasonable. DDOT has defined criteria for assessing the feasibility and reasonableness of constructing noise barriers. For a noise abatement measure to be considered feasible, all of the following must be true:

1. Achieve at least a 5 dBA noise reduction at impacted receptors. DDOT requires that 50 percent or more of the impacted receptors experience 5 dBA or more of insertion loss to be feasible.
2. Determination that it is possible to design and construct the noise abatement measure. An initial determination can be done during the planning stage with use of existing engineering conditions and proposed engineering design improvement. Final determination is conducted the final design noise analysis when engineering design factors are available.
3. Placement of a noise barrier will not restrict pedestrian or vehicular access.
4. Construction of a noise barrier will not cause safety or maintenance problems.

For a noise abatement measure to be considered reasonable, all of the following must be true:

1. A majority of all benefited receptors express a desire for the proposed noise abatement measure. This is determined during a final survey when the viewpoints of benefited receptors are solicited after the approved final design noise analysis (i.e., post NEPA process).
2. A noise barrier would cost no more than $40,000 per benefited receptor. A benefited residence is defined as a dwelling unit that receives at least 5 dBA noise reductions. The estimated cost of construction (i.e., material and labor) would be $25 per square foot.
3. At least one benefited receptor must receive a 7 dBA or greater noise reduction from the barrier.

3.2.1 Noise Barrier Evaluations

DDOT Noise Policy states the intent of the Final Noise Report (for the SFEIS) after identifying noise impact is to document the development of appropriate mitigation measures (noise barriers) that are both feasible and reasonable. Noise barriers were evaluated in TNM® 2.5 within the existing or proposed right-of-way of the primary noise source roadway (or on existing/proposed structure), and at noise wall heights of 10 to 22 feet (at 2 feet intervals). It is generally acceptable practice to evaluate noise barrier beginning at a height of 10 feet, which breaks the noise line-of-sight of trucks with noise-emitting exhaust stacks at about 10 feet from the ground. Most highway agencies have the capacity to build and have noise barrier and foundation design specifications for noise wall heights up to 22 feet. Noise wall height intervals at 2 feet were selected because of the generally flat topography and grade separation between roadways and adjacent noise receptors. Noise wall height interval at 1 foot is typically used for areas with significant grade separation between roadways and noise receptors. The resultant feasible and reasonable barriers are presented for project areas with noise receptors that approach or exceed the NAC.

CNE-2: Suitland Parkway between Martin Luther King Jr. Avenue SE and I-295

A single-continuous 1,223-foot long noise barrier was modeled adjacent to impacted Category C noise receptors on the west side of Suitland Parkway. The wall was cited 10 feet behind the existing Suitland Parkway edge of pavement and proposed Suitland Parkway southbound off-ramp (to Martin Luther King Jr. Avenue SE) edge of pavement. Procedures for determining the feasibility and reasonableness for Activity Category C (recreation areas), presented in Appendix A of the DDOT Noise Policy, were followed to determine the number and spacing of additional noise receptors needed so that park lands and other outdoor activities within Category C can be treated in a similar manner as Category B residential areas. Thirty-one additional noise receptors, appropriately spaced according to guidelines set forth in Appendix A of the DDOT Noise Policy, were included in the noise model barrier evaluation.

The results of the noise barrier evaluation are as follows:

- At heights of 12, 14, 18, and 20 feet, the noise barrier would provide at least the minimum insertion loss of 5 dBA for 10 to 16 benefited receptors (including all seven impacted noise receptors).
- The noise barrier total costs range from $366,900 to $611,500, depending on height and for a fixed length of 1,223 feet. The noise barrier at these heights would cost no more than $40,000 per benefited receptor.
- The benefited receptors would have calculated noise reductions ranging from 6 dBA to 11 dBA depending on noise barrier height. The design noise reduction of at least 7 dBA was met for at least one benefited receptor for each noise barrier height.
- A 1,223-foot long noise barrier at heights of 12, 14, 18, and 20 feet are considered feasible and reasonable, pending DDOT solicitation of benefited receptor viewpoints regarding the noise wall desirability.

The proposed noise barrier and representative Category C receptors are shown in Appendix F. Details of the noise barrier evaluation are shown in Appendix G.

CNE-4: I-295 between south of Defense Boulevard and 11th Street Bridge Exit

A single-continuous 1,603-foot long noise barrier was modeled adjacent to impacted Category B and C (i.e., church) noise receptors on the south side of I-295, 2.5 feet behind the existing and proposed I-295 roadway barrier. The results of the noise barrier evaluation are as follows:

- At two-foot contours of 10 to 22 feet, the noise barrier would provide at least the minimum insertion loss of 5 dBA for 39 to 45 benefited receptors (including all 28 impacted noise receptors).
- The noise barrier total costs range from $400,750 to $881,650, depending on height and for a fixed length of 1,603 feet. The noise barrier at these heights would cost no more than $40,000 per benefited receptor.
- The benefited receptors would have calculated noise reductions from 5 dBA to 12 dBA depending on noise barrier height. The design noise reduction of at least 7 dBA was met for at least one benefited receptor for each noise barrier height.
- A 1,603-foot long noise barrier at heights from 10 to 22 feet is considered feasible and reasonable, pending DDOT solicitation of benefited receptor viewpoints regarding the noise wall desirability.

The proposed noise barrier and Category B and C receptors are shown in Appendix F. Details of the noise barrier evaluation are shown in Appendix G.

CNE-9: I-395 Eastbound Ramp at South Capitol Street

A single-continuous 947-foot long noise barrier was modeled, adjacent to impacted Category C noise receptors, on the I-395 eastbound off ramp (to South Capitol Street) structure and on the west side of South Capitol Street, varying from a minimum of 10

feet behind the existing South Capitol Street edge of pavement. Procedures for determining the feasibility and reasonableness for Activity Category C (i.e., recreation areas), presented in Appendix D of the DDOT Noise Policy, were followed to determine the number and spacing of additional noise receptors needed so that park lands and other outdoor activities within Category C can be treated in a similar manner as Category B residential areas. Twenty-three additional noise receptors, appropriately spaced according to guidelines set forth in Appendix A of the DDOT Noise Policy, were included in the noise model barrier evaluation. The results of the noise barrier evaluation are as follows:

- At heights of 10, 12, 14, and 22 feet, the noise barrier would provide at least the minimum insertion loss of 5 dBA for 8 to 15 benefited receptors, which includes 86 percent (6 of 7) of the impacted receptors. At 22 feet height, the barrier would also provide at least 5 dBA noise reduction for the remaining impacted noise receptor.
- The noise barrier total costs range from $236,750 to $520,850, depending on height and for a fixed length of 947 feet. The noise barrier at these heights would cost no more than $40,000 per benefited receptor. Only the noise barrier height at 22 feet would provide at least the minimum noise reduction for all seven impacted noise receptors, and cost no more than $40,000 per benefited receptor.
- The benefited receptors would have calculated noise reductions from 5 dBA to 15 dBA depending on noise barrier height. The design noise reduction of at least 7 dBA was met for at least one benefited receptor for each noise barrier height.
- A 947-foot long noise barrier at heights of 10, 12, 14, and 22 feet are considered feasible and reasonable, pending DDOT solicitation of benefited receptor viewpoints regarding the noise wall desirability. The proposed noise barrier and representative Category C receptors are shown in Appendix F. Details of the noise barrier evaluation are shown in Appendix G.

DDOT Noise Policy states the final component of a highway traffic noise analysis is conducted in project design (i.e., post SFEIS and Record of Decision), where the analysis is updated, as necessary, and the noise barrier is designed and included in the construction plans. It is likely that the recommended noise barrier length and height would be selected during project design and included in final construction plans.

4.0 Project Related Construction Noise Impacts

Construction activities within the project area would cause short-term noise effects on noise-sensitive receptors in the immediate vicinity of the construction site. Effects on community noise levels during construction would result from noise from construction equipment operation and movement of construction and delivery vehicles. The level of effect would depend on the noise emission levels of the equipment and activities involved, the duration of the activity, construction schedule and work hours, and the distance from noise sensitive properties.

Resulting noise levels at a given location would depend on the type and number of pieces of construction equipment operating and the distance from the construction site.

Noise levels from construction activities can vary, depending on the phase of construction, which include land clearing and excavation, building of new roadways, and building of retaining walls. At a typical site, noise levels would be highest during the early phases of construction, when excavation and heavy daily truck traffic would occur.

Noise from pile driving associated with the construction of any proposed new ramps is expected to create annoyance to nearby properties. It is anticipated that pile driving would be limited to daytime hours and would last for a short duration. There are several nearby residential areas, which may also experience annoyance. When feasible, quieter methods, such as vibratory driving or pre-augering prior to driving piles should be used. These methods would be recommended where geological conditions permit their use. Identification and specification of noise abatement measures will be developed during final design of the project.

Typical noise levels from construction equipment, which may be employed during the construction period, are presented in Table 6. Typical equipment noise emission limits, which may be incorporated into a project specification, are also provided in the table. This information comes from the FHWA Construction Noise Handbook (2006), which along with the FHWA Roadway Construction Noise Model (RCNM), can be used to estimate potential construction noise impacts at nearby receptor locations. Further information on both the RCNM model and Construction Noise Handbook can be found at:

http://www.fhwa.dot.gov/environment/noise/construction_noise/

Construction noise is regulated by the District of Columbia Municipal Regulations (DCMR) local ordinances, which are described and outlined in 20 DCMR, Chapter 31. The DCMR requirements mandate that certain classifications of construction equipment and motor vehicles meet specified noise emission standards; that except under very special circumstances require construction activities to be limited to weekdays between the hours of 7:00 AM and 7:00 PM and that construction material be handled and transported in a manner to not create unnecessary noise. A description and full scope of these requirements are described in 20 DCMR.

Table 6: Typical Roadway Construction Equipment Noise Levels and Emission Limits (dBA)

Equipment Description	Impact Device?	Acoustical Usage Factor (%)	Noise Limit L_{max} @ 50 feet (dBA, slow)	Measured Emission Level L_{max} @ 50 feet (dBA, slow)
All Other Equipment > 5 HP	No	50	85	N/A
Auger Drill Rig	No	20	85	84
Backhoe	No	40	80	78
Bar Bender	No	20	80	N/A
Blasting	Yes	N/A	94	N/A
Boring Jack Power Unit	No	50	80	83
Chain Saw	No	20	85	84
Clam Shovel (dropping)	Yes	20	93	87
Compactor (ground)	No	20	80	83
Compressor (air)	No	40	80	78
Concrete Batch Plant	No	15	83	N/A
Concrete Mixer Truck	No	40	85	79
Concrete Pump Truck	No	20	82	81
Concrete Saw	No	20	90	90
Crane	No	16	85	81
Dozer	No	40	85	82
Drill Rig Truck	No	20	84	79
Drum Mixer	No	50	80	80
Dump Truck	No	40	84	76
Excavator	No	40	85	81
Flat Bed Truck	No	40	84	74
Front End Loader	No	40	80	79
Generator	No	50	82	81
Generator (<25KVA, VMS Signs)	No	50	70	73
Gradall	No	40	85	83
Grader	No	40	85	N/A
Grapple (on backhoe)	No	40	85	87
Horizontal Boring Hydraulic Jack	No	25	80	82
Hydra Break Ram	Yes	10	90	N/A

Table 6: Typical Roadway Construction Equipment Noise Levels and Emission Limits (dBA)

Equipment Description	Impact Device?	Acoustical Usage Factor (%)	Noise Limit L_{max} @ 50 feet (dBA, slow)	Measured Emission Level L_{max} @ 50 feet (dBA, slow)
Impact Pile Driver	Yes	20	95	101
Jackhammer	Yes	20	85	89
Man Lift	No	20	85	75
Mounted Impact Hammer (hoe ram)	Yes	20	90	90
Pavement Scarifier	No	20	85	90
Paver	No	50	85	77
Pickup Truck	No	40	55	75
Pneumatic Tools	No	50	85	85
Pumps	No	50	77	81
Refrigerator Unit	No	100	82	73
Rivit Buster/Chipping Gun	Yes	20	85	79
Rock Drill	No	20	85	81
Roller	No	20	85	80
Sand Blasting (single nozzle)	No	20	85	96
Scraper	No	40	85	84
Sheers (on backhoe)	No	40	85	96
Slurry Plant	No	100	78	78
Slurry Trenching Machine	No	50	82	80
Soil Mix Drill Rig	No	50	80	N/A
Tractor	No	40	84	N/A
Vacuum Excavator (Vac-Truck)	No	40	85	85
Vacuum Street Sweeper	No	10	80	82
Ventilation Fan	No	100	85	79
Vibrating Hopper	No	50	85	87
Vibratory Concrete Mixer	No	20	80	80
Vibratory Pile Driver	No	20	95	101
Warning Horn	No	5	85	83
Welder/Torch	No	40	73	74

Source: FHWA Construction Noise Handbook (2006)

4.1 Construction Noise Abatement Measures

To abate or minimize expected construction noise impacts, mitigation measures should be noted directly in contract plans and specifications subject to the provisions as described in 20 DCMR, Chapter 31. Project-specific construction noise abatement that can be utilized to minimize noise impact in areas outside the construction site boundary, include the following:

- Identify land uses and activities that may be affected during construction of the project.
- Determine the measures, which are needed to minimize or eliminate adverse construction-noise effects on the community.
- When feasible, incorporate abatement measures in the project plans and specifications.
- Keep the public informed when work would take place.
- Keep a telephone log of complaints.
- Limit the number and duration of idling equipment on site.
- Provide mufflers or silencers for construction equipment operated by internal combustion engines, and maintain construction equipment in good repair.
- Where possible, reduce noise from stationary site equipment and facilities by utilizing a suitable enclosure.
- When possible, minimize use of back-up alarms during nighttime work hours.
- When possible, schedule truck loading, unloading, and handling operations to minimize on-site construction noise.

5.0 Public Involvement

The FHWA highway traffic noise regulations require DDOT to consider the viewpoints of benefited receptors in determining the reasonableness of noise abatement. The DDOT presented information about the alternatives under consideration and environmental impacts (including noise) in public meetings and hearings during the DEIS and the FEIS. The DEIS public hearings were held on March 4 and 5, 2008. Community members and organizations provided oral and written comments concerning the DEIS. Community member comments on noise included concerns about construction noise impacts, general neighborhood noise, and noise abatement alternatives. The FEIS public meetings were held on April 26 and 28, 2011. There were no documented community member comments on noise. The community members' comments regarding noise were addressed during the FEIS.

The DDOT also met on March 26, 2008 with representatives of the US Navy at the US Naval Support Facility Anacostia to discuss the Navy's comments on the DEIS, including potential noise impacts to the Child Development Center (as one of the key issues). The US Department of the Navy commented on noise mitigation after review of the DEIS. US

Navy concerns regarding the Child Development Center were addressed during the FEIS.

The next step is to solicit the viewpoints of property owners and residents of benefited noise receptors and obtain enough responses to determine their decision for or against noise abatement. DDOT Noise Policy states this is completed during a final survey when the viewpoints of benefited receptors are solicited after the approved final design noise analysis (which occurs post-SFEIS and Record of Decision).

6.0 Conclusion

6.1 Comparison of the SFEIS and FEIS Noise Studies

The result of the noise analysis for the SFEIS was compared with results from the FEIS (Noise Technical Report, September 2007). Thirteen (13) noise-sensitive receptors were included in the noise study for the FEIS for activity category land uses based on the June 1995 FHWA *Highway Traffic Noise Analysis Abatement Policy and Guidance* and the May 1997 DDOT Noise Policy Guidelines.

Four hundred fifteen (415) noise-sensitive receptors are included in the noise study for the SFEIS for activity category land uses based on the July 2011 *Procedures for Abatement of Highway Traffic Noise and Construction Noise* and the April 2011 DDOT Noise Policy. The noise study for the FEIS selected noise receptor locations that cover the general project limits, despite having fewer receptors to represent land uses.

Hence, a general comparison that identifies predicted noise levels and predicted noise impacts (between Build Alternative 2 of the FEIS and the Revised Preferred Alternative for the SFEIS) is feasible for noise receptors at similar locations within the noise study project areas previously listed in Section 2.3.1. The comparison is presented in Table 7.

Table 7: Comparison of the SFEIS and FEIS Noise Study Results

Noise Study Project Area	Predicted Noise Levels in FEIS/ Receptor Number (dBA)[3]	Predicted Noise Levels in SFEIS/ Receptor Number (dBA)	Land Use	Noise Receptor Impacts? (Yes/No)	Proposed Noise Abatement Measure
CNE-1: Suitland Parkway between west of Stanton Road SE and Martin Luther King Jr. Avenue SE	73 (R-10)	63 (1774)	Church	Yes for FEIS, No for SFEIS	None

[3] Predicted exterior noise levels were obtained for receptors R-2 to R-12 from Table C of the Noise Technical Report for Build Alternative 2, which used peak AM traffic volumes in TNM® 2.5; and from Table D for receptor R-1, which used peak PM traffic volumes. These results represent the loudest noise.

Table 7: Comparison of the SFEIS and FEIS Noise Study Results

Noise Study Project Area	Predicted Noise Levels in FEIS/ Receptor Number (dBA)[3]	Predicted Noise Levels in SFEIS/ Receptor Number (dBA)	Land Use	Noise Receptor Impacts? (Yes/No)	Proposed Noise Abatement Measure
CNE-2: Suitland Parkway between Martin Luther King Jr. Avenue SE and I-295	No receptor	69 (1762)	Recreation	Yes for SFEIS	Noise barrier
CNE-3: Suitland Parkway between I-295 and South Capitol Street	65 (R-7)	61 (1850)	School	No	None
CNE-4: I-295 between south of Defense Boulevard and 11th Street Bridge exit	63 (R-9) 65 (R-8)	62 (1705) 68 (1904)	Residential	No for FEIS, Yes for SFEIS	Noise barrier
CNE-5: South Capitol Street between south of Defense Boulevard and Potomac Avenue	59 (R-11) 59 (R-13)	58 (1672) 57 (1669)	Child Develop. Center/park	No	None
CNE-6: South Capitol Street between Potomac Avenue and N Street	72 (R-5) 61 (R-6)	69 (1484) 56 (1663)	Residential	Yes	None
CNE-7: South Capitol Street between N Street and M Street	71 (R-3)	69 (1412)	Residential	Yes	None
CNE-8: South Capitol Street between M Street and I Street	72 (R-2) 71 (R-4)	70 (1185) 70 (1400)	School/ church	Yes	None
CNE-9: South Capitol Street between I Street and I-395	No receptor	68 (1171)	Recreation	Yes for SFEIS	Noise barrier
CNE-10: South Capitol Street between I-395 and Independence Avenue	No receptor	62 (1111)	Residential	No for SFEIS	None
CNE-11: New Jersey Avenue between M Street and I-395	No receptor	60 (1195)	Residential	No for SFEIS	None
CNE-12: New Jersey Avenue between I-395 and Independence Avenue	66 (R-1) 72 (R-12)	66 (1140) 61 (1155)	Residential/ park	Yes for FEIS, Yes for SFEIS	None

6.2 Noise Abatement Statement of Likelihood

Noise-sensitive noise receptors with design year noise levels that approach or exceed the NAC for Activity Category B and C (i.e., church and recreation areas) based on the Revised Preferred Alternative were evaluated for appropriate noise abatement measures and traffic noise mitigation feasibility and reasonableness. Noise abatement measures were evaluated for all impacted noise-sensitive receptors. Noise barriers were determined to be the only preliminarily feasible and reasonable noise abatement measure for this project.

Three noise barriers were determined to be preliminarily feasible and reasonable and are likely to be incorporated in the project (the recommended noise barrier length and height will be selected during project design):

- A 1,223-foot long noise barrier at heights of 12, 14, 18, and 20 feet on the west side of Suitland Parkway between Martin Luther King Jr. Avenue SE and I-295;
- A 1,603-foot long noise barrier at heights from 10 to 22 feet on the south side of I-295 between south of Defense Boulevard and 11th Street Bridge exit; and
- A 947-foot long noise barrier at heights of 10, 12, 14, and 22 feet on the west side of South Capitol Street between I Street and I-395.

The three preliminarily feasible and reasonable noise barriers are likely to be constructed upon final determination that it is possible to construct the noise barriers and viewpoints of all benefited receptors are determined during a final survey of residents and property owners after the approved final design noise analysis. The final design noise analysis and coordination with property owners and residents will be conducted during project design after the approval of the SFEISSFEIS and the Record of Decision (ROD).

Noise impacts for which no noise abatement measures are feasible and reasonable are:

- **CNE-6:** noise abatement measures were considered for impacted receptors on the west side of South Capitol Street. Typically, 1st row receptors were impacted while back row receptors were shielded by intervening buildings. Impacts included categories B and E noise-sensitive receptors for the following land uses: townhomes with front doors facing South Capitol Street (where frequent exterior human use was observed), Camden South Capitol Apartments (with 2nd story and higher level balconies facing South Capitol Street), and retail establishments (with entrances facing South Capitol Street). The placement of a noise barrier was determined not to be feasible because it would restrict pedestrian access to South Capitol Street. Allowance for pedestrian access would result in a non-continuous and in-effective noise barrier.
- **CNE-7:** noise abatement measures were considered for impacted categories B and E noise-sensitive receptors for the following land uses: townhomes with front doors facing South Capitol Street or M Street and a retail establishment with its entrance facing South Capitol Street. An effective noise barrier will need to be located adjacent to impacted noise receptors within the M Street existing right-of-way. The placement of a noise barrier was determined not to be feasible

because it would restrict pedestrian and vehicular access to M Street. Allowance for pedestrian/vehicular access would result in an in-effective noise barrier.

- **CNE-8:** noise abatement measures were considered for impacted Category C noise-sensitive receptors 1400 and 1401 (i.e., St. Vincent De Paul entrance on South Capitol Street and outdoor seating on M Street.) To be effective, a continuous noise barrier would need to be constructed around the church property. The placement of a noise barrier was determined not to be feasible because it would restrict pedestrian access to South Capitol Street and M Street. Receptor 1400 could potentially also be considered a Category D receptor with interior noise-sensitive use. The church structure is masonry and has no operable windows, so per FHWA guidance a 25 dB interior/exterior noise reduction factor would be used to estimate the interior noise levels based on the predicted outdoor noise level. The resulting interior noise level would be 45 dBA (70 – 25), which is below the 51 dBA Category D NAC. As a result, there is no interior noise impact at Receptor 1400 which to consider for mitigation.

6.3 Noise Abatement Incorporation into the Record of Decision

Per 23 CFR part 772.13(g)(3) the ROD for the SFEIS will include locations where noise impacts are predicted to occur, where noise abatement is feasible and reasonable, and locations with impacts that have no feasible or reasonable noise abatement alternatives. The statement of likelihood will also be included in the SFEIS and ROD.

7.0 References

Federal Highway Administration. March 13, 1984. "Analysis of Highway Construction Noise." Technical Advisory T6160.2, 4 pages.

Federal Highway Administration. May 1996. Measurement of Highway-Related Noise. Report Number FHWA-PD-96-046, Cynthia S.Y. Lee and Gregg Fleming, 206 pages. Available from National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia, 22161.

Federal Highway Administration. February 2000. FHWA Highway Noise Barrier Design Handbook. Gregg G. Fleming, Harvey S. Knauer, Cynthia S. Y. Lee, and Soren Pedersen. Available: http://www.fhwa.dot.gov/environment/noise/design /index.htm.

Federal Highway Administration. February 2003. "Traffic Noise Model® (TNM®) Version 2.5 and User Guide."

Parsons Brinckerhoff, Inc. September 2007. South Capitol Street FEIS Noise Technical Report.

Parsons Brinckerhoff, Inc. 2008. South Capitol Street Draft Environmental Impact Statement.

Federal Highway Administration. January 2011. Highway Traffic Noise Analysis Abatement Policy and Guidance.

District of Columbia Department of Transportation. April 11, 2011. Noise Policy.

Federal Highway Administration. July 2011. "Procedures for Abatement of Highway Traffic Noise and Construction Noise." 23 Code of Federal Regulations, Part 772.

Parsons Brinckerhoff, Inc. October 2013. South Capitol Street Interchange Modification Report, DDOT.

Appendix A

Noise Study Plans

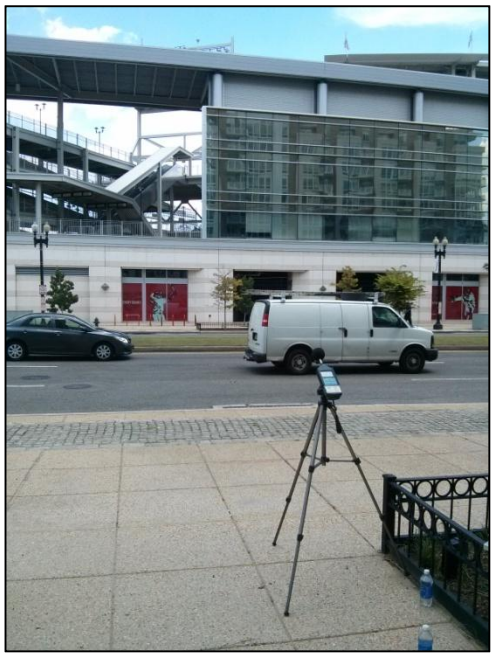
This page intentionally left blank.

Appendix B

Laboratory Calibration, Field Calibration, and Field Measurement Information

Measurement Site M-1

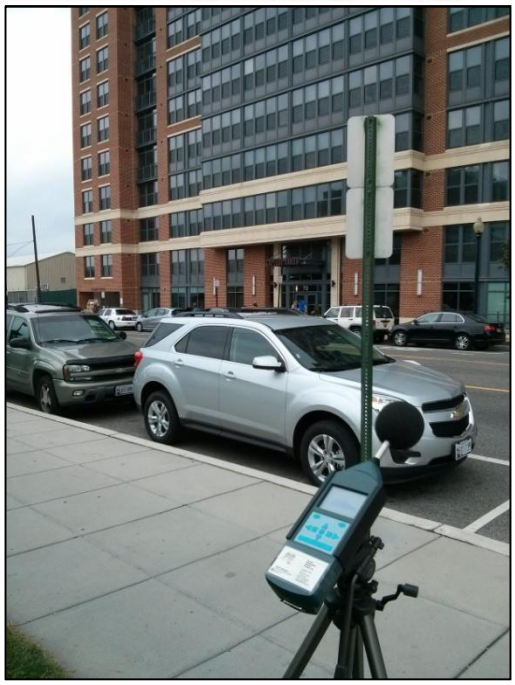
Residence at Site M-1



Measurement Site M-2

Apartment Building at Site M-2

Measurement Site M-3 and Nearby Office Building



Measurement Site M-4 and Nearby Apartment Building

This page intentionally left blank

Appendix C

TNM® 2.5 Inputs

This page intentionally left blank.

Appendix D

Existing Condition, 2040 No-Build, and 2040 Build Condition Traffic Volumes

This page intentionally left blank.

Appendix E

TNM® 2.5 Predicted Noise Levels

This page intentionally left blank.

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
CNE-1: Suitland Parkway between west of Stanton Road SE and Martin Luther King Jr. Avenue SE								
741	Sayles Place Apartments	B	66	59	58	58	-0.3	0.0
739	Sayles Place Apartments	B	66	49	49	49	-0.2	0.1
738	Sayles Place Apartments	B	66	46	45	45	-0.1	0.1
1981	Sayles Place Apartments	B	66	54	54	54	-0.2	0.1
1969	Sayles Place Apartments	B	66	47	47	47	0.2	0.5
1965	Sayles Place Apartments playground	C	66	55	55	56	1.5	1.8
1964	Sayles Place Apartments basketball court	C	66	57	57	58	0.8	1.1
1963	Sayles Place Apartments	B	66	56	56	58	2.2	2.5
1945	Sayles Place Apartments	B	66	60	60	60	0.0	0.3
1944	Sayles Place Apartments	B	66	61	60	61	-0.1	0.2
1943	Sayles Place Apartments	B	66	59	59	59	0.2	0.4
1942	Anticipated future residential development (front)	G/B	66	N/A	N/A	64	N/A	N/A
1942	Anticipated future residential development (back)	G/B	66	N/A	N/A	61	N/A	N/A
1935	Macedonia Baptist Church	C	66	55	55	55	0.0	0.2
1934	Townhouse	B	66	56	56	57	0.5	0.8
1933	Oxford Manor Apartments	B	66	55	55	56	0.6	0.8
1931	Apartments	B	66	56	56	57	0.8	1.0
1930	Duplex	B	66	57	57	57	0.3	0.5
1929	Duplex	B	66	55	54	55	0.4	0.7
1928	Duplex	B	66	55	55	56	0.3	0.5
1926	Sheridan Station Condominiums	B	66	63	62	63	0.0	0.4
1925	Sheridan Station Condominiums	B	66	60	60	60	-0.1	0.3

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1924	Sheridan Station Condominiums	B	66	54	54	55	0.2	0.5
1923	Sheridan Station playground	C	66	55	54	54	-0.2	0.1
1920	Children's Center building	C	66	60	60	63	2.6	2.6
1919	Bethlehem Baptist Church	C	66	60	60	61	0.9	0.6
1849	MLK Child Development Center office	C	66	53	53	53	-0.1	0.2
1848	MLK Child Development Center office	C	66	53	53	53	0.1	0.3
1847	Townhomes	B	66	55	55	55	0.0	0.2
1846	Townhomes	B	66	53	53	53	0.1	0.1
1843	Townhomes	B	66	54	55	55	0.7	0.0
1840	Townhomes	B	66	61	62	62	1.3	0.0
1835	Townhomes	B	66	58	58	57	-0.8	-1.2
1830	Townhomes	B	66	57	57	56	-0.7	-1.2
1826	Townhomes	B	66	59	59	59	0.1	-0.7
1824	Townhomes	B	66	59	61	61	1.1	0.0
1819	Parkway House Apartments	B	66	55	55	54	-0.2	-0.1
1818	Parkway House Apartments	B	66	54	54	55	0.1	0.2
1817	Parkway House Apartments	B	66	55	55	55	-0.1	0.0
1816	Parkway House Apartments	B	66	55	55	55	-0.1	0.1
1815	Parkway House Apartments	B	66	55	55	55	-0.1	0.1
1814	Parkway House Apartments	B	66	56	55	56	0.1	0.3
1813	Parkway House Apartments	B	66	54	54	54	0.5	0.6
1812	Parkway House Apartments	B	66	51	50	51	0.4	0.6
1811	Parkway House Apartments	B	66	51	51	52	0.5	0.7
1810	Parkway House Apartments	B	66	52	52	52	0.3	0.6
1809	Parkway House Apartments	B	66	53	53	54	0.2	0.4

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1800	Matthews Memorial Baptist Church Apartments	B	66	58	58	58	0.3	0.5
1798	Matthews Memorial Baptist Church Apartments	B	66	55	55	55	0.7	0.3
1797	Matthews Memorial Baptist Church Apartments	B	66	57	57	58	1.1	0.3
1796	Matthews Memorial Baptist Church Apartments	B	66	61	62	63	1.3	0.2
1795	Single-family residence	B	66	60	61	61	1.0	0.2
1794	Single-family residence	B	66	60	61	61	1.1	0.2
1793	Matthews Memorial Baptist Church playground	C	66	58	58	58	0.4	0.3
1792	Matthews Memorial Baptist Church playground	C	66	59	59	60	0.4	0.6
1783	Duplex	B	66	58	58	59	1.0	1.2
1782	Duplex	B	66	56	56	57	0.4	0.6
1781	Duplex	B	66	55	55	55	-0.1	0.1
1780	Duplex	B	66	54	54	54	0.0	0.2
1779	Duplex	B	66	54	53	54	0.0	0.3
1778)	Matthews Memorial Baptist Church duplex	B	66	53	52	53	0.3	0.5
1777	Matthews Memorial Baptist Church	C	66	64	65	65	1.2	0.0
1776	Campbell AME Church house	B	66	61	61	60	-0.7	-0.6
1775	Campbell AME Church	C	66	64	65	64	0.4	-0.3
1774	Campbell AME Church	C	66	63	63	63	0.3	-0.3
1735	New Parkchester Housing Cooperative	B	66	63	64	64	1.5	0.3
1734	Holy Temple Church	C	66	64	65	65	1.4	0.3
1733	Solid Rock Baptist Church	C	66	63	64	64	1.3	0.3

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1732	Apartments	B	66	63	64	64	1.2	0.2
1731	Apartments	B	66	63	64	64	1.2	0.2
CNE-2: Suitland Parkway between Martin Luther King Jr. Avenue SE and I-295								
1916	United House of Prayer for All People	C	66	62	63	62	0.2	-0.8
1915	Thurgood Marshall Academy	C	66	61	61	61	0.1	-0.3
1914	Savoy basketball court	C	66	63	63	63	-0.1	-0.8
1913	Savoy playground	C	66	64	64	63	-0.2	-0.8
1910	A. Kiger Savoy School	C	66	62	61	62	0.0	0.3
1767	Excel Academy playground (back)	C	66	58	58	59	0.5	0.7
1766	Excel Academy playground (front)	C	66	61	61	61	0.0	0.2
1765	Barry Farm Recreation Center (future phase)	G/C	66	N/A	60	60	N/A	0.9
1764[4]	Barry Farm Recreation Center (future phase)	G/C	66	N/A	66	**66**	N/A	0.3
1763	Barry Farm Recreation Center	C	66	64	64	65	0.9	1.3
1762	Barry Farm outdoor swimming pool	C	66	68	68	**69**	1.4	1.8
1761	Barry Farm basketball court	C	66	64	64	65	1.1	1.5
1760	Barry Farm basketball court	C	66	67	66	**68**	1.4	1.8
1759	Barry Farm basketball court	C	66	67	67	**69**	1.3	1.6
1758	Barry Farm park pavilion	C	66	66	66	**68**	1.9	2.1
1757	Barry Farm housing	B	66	58	58	59	0.3	0.3
1756	Barry Farm housing	B	66	59	59	60	1.0	1.3

[4] Noise abatement measures evaluated for impacted noise-sensitive receptors 1758, 1759, 1760, 1762, and 1764 following the procedures provided in Appendix A of the DDOT Noise Policy for Category C recreational land use. Please see Section 3.2 for details on noise abatement measures.

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1755	Barry Farm housing	B	66	57	57	57	0.1	0.0
1752	Barry Farm housing	B	66	62	62	63	1.2	1.5
1750	Barry Farm housing	B	66	58	58	59	0.5	0.9
1746	Barry Farm housing	B	66	60	60	62	1.4	1.7
1741	Barry Farm housing	B	66	63	63	65	1.6	1.8
1740	Barry Farm housing	B	66	64	64	65	0.9	1.0
1739	Barry Farm housing	B	66	63	63	64	1.0	1.2
1738	Barry Farm housing	B	66	62	62	63	0.6	0.8
1730	Single-family residence	B	66	61	62	62	0.6	0.0
1729	Single-family residence	B	66	61	61	61	0.3	-0.1
1728	Single-family residence	B	66	59	60	60	0.3	0.1
1727	Single-family residence	B	66	59	59	59	0.3	0.3
1726	Single-family residence	B	66	59	59	60	0.3	0.3
1725	Single-family residence	B	66	60	59	60	0.2	0.3
1722	Apartments	B	66	56	56	56	-0.2	-0.1
1721	Apartments	B	66	54	54	54	-0.7	-0.4
1720	Apartments	B	66	55	55	55	-0.6	-0.3
1717	Apartments	B	66	60	59	59	-0.2	-0.1
1714	Apartments	B	66	56	56	56	-0.7	-0.4
1713	Apartments	B	66	59	59	59	-0.2	0.1
1710	Apartments	B	66	62	62	62	-0.2	0.0
1709	Apartments	B	66	63	63	63	-0.1	0.1
CNE-3: Suitland Parkway between I-295 and South Capitol Street								
1859	Current Anacostia Park parking structure/ future residential redevelopment	F	N/A	N/A	N/A	N/A	N/A	N/A
1858	Single-family residence	B	66	62	61	61	-0.3	-0.1

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1857	Single-family residence	B	66	62	61	61	-0.6	-0.4
1856	Single-family residence	B	66	61	60	60	-0.3	-0.1
1855	Anticipated future residential development	G/B	66	N/A	61	61	N/A	-0.1
1854	Anticipated future residential development	G/B	66	N/A	60	61	N/A	1.0
1851	Washington D.C. Mental Health	C	66	66	66	64	-1.6	-1.5
1850	Howard Road Academy playground	C	66	66	65	61	-5.0	-4.8
CNE-4: I-295 between south of Defense Boulevard and 11th Street Bridge Exit								
1909	Apartment	B	66	62	61	60	-1.2	-1.0
1908	Apartment	B	66	64	64	62	-1.5	-1.2
1904	Apartment	B	66	64	64	63	-0.9	-0.6
1904[5]	Apartment 3rd floor	B	66	68	68	**68**	0.0	0.4
1903	St. Philips Episcopal Church (front)	C	66	69	68	**68**	-0.7	-0.3
1899	St. Philips Episcopal Church (back)	C	66	62	61	62	0.2	0.5
1898	Single-family residence	B	66	67	67	**67**	-0.3	0.1
1897	Single-family residence	B	66	68	67	**68**	-0.1	0.3
1896	Single-family residence	B	66	68	68	**68**	-0.2	0.2
1895	Single-family residence	B	66	68	68	**68**	-0.2	0.2
1894	Single-family residence	B	66	68	68	**68**	-0.3	0.1
1892	Single-family residence	B	66	69	68	**68**	-0.3	0.0
1891	Single-family residence	B	66	69	68	**68**	-0.2	0.1
1890	Single-family residence	B	66	69	69	**69**	-0.1	0.3
1889	Single-family residence	B	66	69	68	**69**	-0.1	0.2

[5] Noise abatement measures evaluated for impacted noise-sensitive receptors 1860 through 1865, 1874 through 1879, 1885 through 1898, 1903 and 1904 for Category B land use. Please see Section 3.2 for details on noise abatement measures.

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1888	Single-family residence	B	66	69	69	**69**	-0.1	0.3
1887	Single-family residence	B	66	69	68	**68**	-0.1	0.3
1886	Single-family residence	B	66	69	68	**69**	0.0	0.4
1885	Single-family residence	B	66	68	67	**68**	0.1	0.5
1884	Townhome	B	66	64	63	63	-0.6	-0.2
1883	Townhome	B	66	64	64	64	-0.5	-0.2
1882	Townhome	B	66	65	64	64	-0.4	0.0
1881	Townhome	B	66	65	65	65	-0.2	0.1
1880	Townhome	B	66	66	65	**66**	0.0	0.3
1879	Townhome	B	66	66	66	**67**	0.1	0.5
1878	Townhome	B	66	67	67	**67**	0.1	0.5
1877	Townhome	B	66	68	68	**68**	0.0	0.3
1876	Townhome	B	66	69	69	**69**	-0.3	0.1
1875	Townhome	B	66	70	70	**70**	-0.4	0.0
1874	Townhome	B	66	72	71	**71**	-0.4	0.0
1869	Townhome	B	66	64	63	62	-1.2	-0.8
1868	Townhome	B	66	64	64	63	-0.9	-0.5
1867	Townhome	B	66	65	64	64	-0.6	-0.2
1866	Townhome	B	66	65	65	65	-0.4	0.0
1865	Townhome	B	66	66	65	**66**	-0.1	0.3
1864	Townhome	B	66	66	66	**66**	0.1	0.5
1863	Townhome	B	66	67	67	**67**	0.2	0.6
1862	Townhome	B	66	68	68	**68**	-0.1	0.4
1861	Townhome	B	66	69	69	**69**	-0.4	0.0
1860	Townhome	B	66	71	71	**71**	-0.5	-0.1
1853	Anacostia Park office	B	66	62	62	62	-0.2	0.1

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1852	Anacostia Park office	B	66	57	57	57	-0.2	0.0
464	Townhome	B	66	63	62	61	-1.7	-1.3
463	Townhome	B	66	63	62	61	-1.5	-1.2
462	Townhome	B	66	63	62	61	-1.4	-1.0
461	Townhome	B	66	63	62	61	-1.3	-1.0
460	Townhome	B	66	63	62	61	-1.2	-0.8
459	Townhome	B	66	62	62	61	-1.0	-0.7
458	Single-family residence	B	66	64	63	63	-1.0	-0.7
457	Townhome	B	66	64	64	63	-1.0	-0.7
456	Townhome	B	66	64	64	63	-1.0	-0.7
455	Townhome	B	66	64	64	63	-1.0	-0.7
454	Townhome	B	66	64	64	63	-1.0	-0.7
453	Townhome	B	66	64	64	63	-0.9	-0.6
1706	Apartments	B	66	61	61	61	-0.6	-0.2
1705	Apartments	B	66	63	63	62	-0.4	-0.1
1704	Apartments	B	66	62	62	62	-0.6	-0.2
1703	Apartments	B	66	62	62	62	-0.5	0.0
1702	Apartments	B	66	64	63	63	-0.5	0.0
1699	Apartments	B	66	63	63	63	0.2	0.5
1696	Apartments	B	66	63	63	63	-0.4	0.0
1695	Apartments	B	66	62	62	62	-0.7	-0.1
1692	Apartments	B	66	65	64	65	-0.2	0.3
1691	Apartments	B	66	64	64	63	-0.8	-0.4
1690	Apartments	B	66	62	62	61	-0.7	-0.2
1689	Apartments	B	66	66	65	65	-0.6	0.0

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1686	Apartments	B	66	55	55	55	0.2	0.4
1678	Apartments	B	66	61	61	61	0.4	0.5
CNE-5: South Capitol Street between south of Defense Boulevard and Potomac Avenue								
1677	U.S. Navy baseball stands	C	66	63	64	65	1.7	0.9
1676	U.S. Navy baseball stands	C	66	57	57	57	0.7	0.8
1675	U.S. Navy basketball court	C	66	58	58	59	0.9	0.9
1674	U.S. Navy soccer field	C	66	58	59	60	1.4	1.2
1673	U.S. Navy tennis courts	C	66	59	60	61	2.0	1.4
1672	U.S. Navy Child Development Center park benches	C	66	57	57	58	1.6	1.2
1671	U.S. Navy park pavilion	C	66	60	61	62	1.6	1.3
1670	Anacostia Park (front)	C	66	64	65	60	-4.1	-5.0
1670	Anacostia Park (pavilion)	C	66	55	56	55	0.1	-0.6
1669	Anacostia Park (bench)	C	66	57	58	57	-0.4	-1.2
1668	Riverfront on the Anacostia - future residential (bridge)	G/B	66	N/A	68	61	N/A	-7.0
1667	Riverfront on the Anacostia - future residential (back)	G/B	66	N/A	60	61	N/A	0.9
1666	Riverfront on the Anacostia - future business office (front)	G/E	71	N/A	65	**71**	N/A	6.0
CNE-6: South Capitol Street between Potomac Avenue and N Street								
1665	Townhome	B	66	54	55	57	3.3	2.1
1664	Townhome	B	66	51	52	53	1.7	0.7
1663	Townhome	B	66	54	55	56	2.6	1.4
1662	Townhome	B	66	51	52	53	1.8	0.9
1661	Townhome	B	66	49	50	53	4.5	3.4

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1660	Townhome	B	66	51	52	53	1.9	1.0
1659	Townhome	B	66	50	51	52	1.9	1.0
1658	Townhome	B	66	50	51	51	0.7	-0.2
1498	Nationals Stadium entrance	E	71	64	65	68	3.4	3.0
1497	U-Haul	E	71	64	64	67	3.8	3.4
1496	Syphax Gardens Apartments	B	66	46	47	48	1.8	1.3
1495	Townhome	B	66	65	65	**69**	3.5	3.2
1494	Townhome	B	66	63	63	**66**	3.4	3.1
1493	Townhome	B	66	61	61	64	3.5	3.1
1492	Townhome	B	66	58	59	62	3.4	3.1
1491	Townhome	B	66	53	54	56	3.0	2.6
1490	Townhome	B	66	49	50	52	3.0	2.7
1489	Townhome	B	66	49	49	52	2.9	2.6
1488	Townhome	B	66	48	48	51	2.8	2.4
1487	Townhome	B	66	47	47	49	2.2	1.8
1486	Townhome	B	66	68	68	**71**	3.6	3.3
1485	Townhome	B	66	47	47	49	2.2	1.7
1484	Townhome	B	66	66	66	**69**	3.7	3.4
1483	Townhome	B	66	62	63	**66**	3.8	3.4
1482	Townhome	B	66	60	61	64	3.7	3.3
1481	Townhome	B	66	58	58	62	3.7	3.4
1480	Townhome	B	66	46	46	48	2.0	1.6
1479	Townhome	B	66	54	54	57	3.4	3.1
1478	Townhome	B	66	42	43	44	1.8	1.4
1477	Townhome	B	66	46	47	49	2.8	2.4

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1476	Townhome	B	66	48	48	50	2.2	1.9
1475	Camden South Capitol Apartments	B	66	68	68	**71**	3.7	3.4
1474	Camden South Capitol Apartments	B	66	68	68	**71**	3.7	3.4
1473	Camden South Capitol Apartments	B	66	68	68	**71**	3.7	3.4
1472	Townhome	B	66	52	52	55	3.4	3.0
1471	Townhome	B	66	46	47	49	2.2	1.8
1470	Townhome	B	66	45	46	47	1.8	1.3
1469	Townhome	B	66	39	40	41	1.9	1.3
1468	Townhome	B	66	40	41	42	1.7	1.2
1467	Townhome	B	66	42	42	43	1.6	1.1
1466	Townhome	B	66	42	43	44	1.7	1.1
1465	Townhome	B	66	43	44	45	1.6	1.1
1464	Townhome	B	66	43	44	45	1.6	1.0
1463	Townhome	B	66	43	44	45	1.7	1.2
1462	Townhome	B	66	43	44	45	1.7	1.1
1461	Townhome	B	66	43	44	45	1.6	1.1
1460	Townhome	B	66	38	38	39	1.5	1.0
1459	Townhome	B	66	38	39	39	1.4	0.9
1458	Townhome	B	66	38	39	40	1.6	1.1
1457	Townhome	B	66	48	49	51	2.8	2.4
1456	Townhome	B	66	52	52	55	3.3	3.0
1455	Townhome	B	66	46	47	49	2.5	2.0
1454	Townhome	B	66	47	47	49	2.2	1.7
1453	Townhome	B	66	68	68	**71**	3.7	3.4
1452	Retail	E	71	67	68	**71**	3.7	3.3
1451	Townhome	B	66	67	67	**70**	3.7	3.3

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1450	Retail	E	71	67	68	**71**	3.8	3.3
1449	Townhome	B	66	59	60	63	4.2	3.5
1448	Townhome	B	66	55	55	58	3.3	2.9
1447	Townhome	B	66	53	54	57	3.3	2.9
1446	Townhome	B	66	52	52	55	2.9	2.5
1445	Townhome	B	66	50	51	53	2.8	2.5
1444	Townhome	B	66	51	51	54	3.4	2.9
1443	Townhome	B	66	48	48	51	2.8	2.4
1442	Townhome	B	66	47	47	49	2.2	1.9
1441	Townhome	B	66	46	46	49	3.1	2.7
CNE-7: South Capitol Street between N Street and M Street								
1440	Restaurant	E	71	67	68	**71**	3.7	3.3
1439	Washington, DC Superior Court offices	E	71	68	68	70	2.3	1.9
1438	Retail	E	71	69	70	70	0.5	0.0
1437	Townhome	B	66	49	50	54	4.8	3.5
1436	Townhome	B	66	52	52	56	4.5	3.6
1435	Townhome	B	66	52	53	57	5.2	4.0
1434	Townhome	B	66	52	53	57	5.2	3.9
1433	Townhome	B	66	57	57	60	3.7	3.1
1432	Townhome	B	66	52	53	54	2.2	1.5
1431	Townhome	B	66	54	54	56	2.3	1.7
1430	Townhome	B	66	57	58	61	3.5	3.0
1429	Townhome	B	66	58	58	61	3.6	3.1
1428	Townhome	B	66	58	58	61	3.5	3.0

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1427	Townhome	B	66	58	58	61	3.2	2.7
1426	Townhome	B	66	54	55	56	2.0	1.4
1425	Townhome	B	66	52	53	54	1.7	1.1
1423	Townhome	B	66	58	58	62	4.4	3.9
1421	Townhome	B	66	58	58	62	4.6	4.1
1420	Townhome	B	66	57	58	62	4.4	3.9
1419	Townhome	B	66	53	54	55	1.9	1.2
1418	Townhome	B	66	55	55	56	1.8	1.0
1417	Townhome	B	66	58	59	61	2.7	1.8
1416	Townhome	B	66	61	62	65	3.8	3.0
1415	Townhome	B	66	62	62	**66**	3.9	3.1
1414	Townhome	B	66	63	64	**66**	3.7	2.8
1414	Townhome 2nd floor	B	66	64	64	**67**	3.4	2.6
1413	Townhome	B	66	64	65	**67**	3.3	2.4
1412	Townhome	B	66	66	67	**69**	2.9	1.9
1411	Townhome	B	66	65	66	**67**	2.0	1.0
1410	Townhome	B	66	65	66	**67**	2.0	1.0
1409	Townhome	B	66	66	67	**68**	2.0	1.0
1408	Townhome	B	66	66	67	**68**	2.0	0.9
1 M Street SE	Future business office	G/E	71	N/A	67	69	N/A	2.2
CNE-8: South Capitol Street between M Street and I Street								
1401	St. Vincent De Paul (outdoor seating)	C	66	69	70	**71**	2.0	1.0
1400	St. Vincent De Paul (entrance)	C	66	68	69	**70**	2.3	1.5

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1000 S Capitol Street	Future business office	G/E	71	N/A	65	70	N/A	4.7
37 L Street SE	Future business office	G/E	71	N/A	60	63	N/A	2.9
1199	7-Eleven	E	71	65	66	68	2.8	1.9
1193	Apartments	B	66	55	57	59	4.1	2.1
1192	Apartments	B	66	53	54	56	2.7	1.9
1191	Apartments	B	66	53	53	55	2.9	2.2
1190	Business office	E	71	57	59	61	4.0	2.3
1189	UPS	E	71	56	57	60	3.7	2.7
1185	Capitol Skyline Hotel 2nd story swimming pool	E	71	65	65	70	5.1	4.3
1184	Capitol Skyline Hotel 2nd story seating area	E	71	55	56	58	3.3	2.4
Congressional Square	Future residential development	G/B	66	N/A	57	59	N/A	2.2
909 Half Street	Future residential development	G/B	66	N/A	59	62	N/A	2.8
CNE-9: I-395 Eastbound Ramp at South Capitol Street								
1550	Capitol Park Plaza Condominiums	B	66	55	55	58	3.8	3.8
1183	Capitol Yards Apartments restaurant	E	71	60	62	63	3.2	0.9
1182	Capitol Yards Apartments	B	66	60	62	63	3.3	1.0
1181	Capitol Yards Apartments	B	66	53	53	56	3.3	3.1
1180	Capitol Yards Apartments	B	66	49	50	53	4.0	2.8

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1179	McDonald's	E	71	62	63	66	3.5	2.9
1178	Washington D.C. Recreation Center	C	66	58	59	61	2.5	1.6
1177	Washington D.C. Recreation Center front garden	C	66	57	57	59	2.8	2.1
1176	Washington D.C. Recreation Center back garden	C	66	56	57	59	3.0	2.2
1175	Randall Pool & Recreation Center basketball court	C	66	63	64	65	1.5	1.1
1174	Randall Pool & Recreation Center swimming pool	C	66	58	58	61	2.6	2.3
1173	Randall Pool & Recreation Center tennis court back	C	66	61	62	63	1.9	1.5
1172[6]	Randall Pool & Recreation Center tennis court front	C	66	66	66	**67**	1.7	1.3
1171	Randall Pool & Recreation Center baseball stands	C	66	65	66	**68**	2.6	2.4
1170	Randall Pool & Recreation Center baseball diamond	C	66	58	58	62	3.2	3.1
1169	Capitol Park Plaza Condominiums	B	66	55	55	58	3.0	3.0
1168	Capitol Park Plaza Condominiums	B	66	58	58	62	4.2	4.1
1167	Randall Pool & Recreation Center baseball stands	C	66	57	57	60	3.1	3.0
1165	Capitol Park Plaza Condominiums playground	C	66	52	52	54	2.0	1.9

[6] Noise abatement measures evaluated for impacted noise-sensitive receptors 1171 and 1172 following the procedures provided in Appendix A of the DDOT Noise Policy for Category C recreational land use. Please see Section 3.2 for details on noise abatement measures.

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1166	Capitol Park Plaza Condominiums park	C	66	50	50	51	1.9	1.8
1164	Apartments	B	66	53	53	56	2.4	2.3
1163	Apartments	B	66	55	55	58	2.6	2.6
1162	Apartments	B	66	57	57	60	3.0	2.9
1161	Apartments	B	66	58	58	61	3.4	3.4
1160	Apartments	B	66	59	59	62	2.7	2.7
1160	Apartments 4th floor	B	66	68	68	**71**	2.6	2.6
1159	Apartments	B	66	55	55	57	2.0	1.9
1158	Apartments	B	66	58	58	60	2.0	2.0
1157	Apartments	B	66	61	61	63	1.9	1.9
1157	Apartments 4th floor	B	66	68	68	**70**	2.5	2.5
CNE-10: South Capitol Street between I-395 and Independence Avenue								
1142	Verizon office building	E	71	62	62	65	3.5	2.6
1127	Fairchild office building	E	71	65	65	66	1.6	0.9
1126	Business office	E	71	66	67	67	0.6	0.0
1120	Business office	E	71	64	65	66	1.3	0.6
1113	Townhome	B	66	52	52	54	2.3	2.0
1112	Townhome	B	66	52	52	55	2.5	2.2
1111	Townhome	B	66	59	60	62	2.7	2.0
1110	Townhome	B	66	59	60	62	2.7	2.0
1109	Townhome	B	66	59	60	62	2.5	1.9
1108	Townhome	B	66	59	60	62	2.4	1.7
1107	Townhome	B	66	60	60	62	2.2	1.6
1499	Townhome	B	66	52	53	55	2.9	2.4

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1106	The Spirit of Justice Park	C	66	55	55	58	3.0	2.3
1105	The Spirit of Justice Park	C	66	54	55	57	3.0	2.2
1104	The Spirit of Justice Park	C	66	55	55	58	3.0	2.6
1103	The Spirit of Justice Park	C	66	58	59	61	2.7	2.2
1102	The Spirit of Justice Park	C	66	58	58	61	3.0	2.4
1101	The Spirit of Justice Park	C	66	56	57	59	2.6	2.2
1100	Business office	E	71	54	54	56	2.8	2.3
CNE-11: New Jersey Avenue between M Street and I-395								
1111 New Jersey Ave	Future residential development	G/B	66	N/A	53	54	N/A	0.8
1407	Washington Canal Park bench	C	66	49	49	51	1.7	1.3
1406	Washington Canal Park bench	C	66	49	50	51	2.0	1.4
1405	St. Matthews Baptist Church	C	66	52	54	56	3.3	1.4
1404	Apartments	B	66	54	56	58	4.2	2.0
1403	Apartments	B	66	51	52	53	1.7	0.9
1402	Apartments	B	66	52	53	54	1.8	1.1
1198	Marriott	E	71	52	56	58	5.2	2.1
1197	Condominiums (courtyard)	B	66	44	44	45	1.8	1.7
1196	Condominiums (courtyard)	B	66	40	40	41	0.7	0.6
1195	Condominiums	B	66	55	57	60	4.9	2.2
1194	Eagle Academy	C	66	53	54	55	2.7	1.3
1188	Apartments	B	66	54	55	56	2.4	1.5
1187	Apartments 2nd story swimming pool	B	66	52	53	56	3.5	2.2
1186	Square 739 - future residential development	G/B	66	N/A	57	58	N/A	1.4

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1186	Park Chelsea - future residential development	G/B	66	N/A	55	57	N/A	1.5
CNE-12: New Jersey Avenue between I-395 and Independence Avenue								
1156	Garfield Park (circle seating)	C	66	57	57	59	2.5	2.4
1155	Garfield Park (bench)	C	66	58	58	61	2.5	2.5
1154	Garfield Park (bench)	C	66	57	57	60	2.5	2.4
1153	Townhome	B	66	56	57	59	2.5	2.4
1152	Townhome	B	66	55	55	58	2.5	2.4
1151	Townhome	B	66	55	55	58	2.5	2.3
1150	Townhome	B	66	55	55	57	2.5	2.4
1149	Townhome	B	66	53	53	56	2.4	2.4
1148	Townhome	B	66	54	54	56	2.5	2.3
1147	Townhome	B	66	53	53	56	2.4	2.4
1146	Townhome	B	66	53	53	56	2.3	2.1
1146	Townhome 3rd floor	B	66	59	59	62	2.4	2.3
1145	Commercial	E	71	52	52	54	2.1	1.8
1143	Townhome	B	66	58	59	59	0.8	0.2
1141	Townhome	B	66	62	63	63	0.8	0.1
1140	Townhome	B	66	65	66	**66**	0.5	-0.1
1139	Townhome	B	66	62	62	63	0.7	0.1
1138	Townhome	B	66	58	58	58	0.5	-0.1
1137	Townhome	B	66	53	54	54	1.1	0.5
1136	Townhome	B	66	50	51	52	1.4	0.9
1135	Townhome	B	66	56	57	58	2.3	1.4
1134	Townhome	B	66	50	50	51	1.7	1.4

TNM® 2.5 Predicted Noise Levels

Receptor Name	Description	Activity Category	NAC (dBA)	Existing (dBA)	2040 No-Build Alternative (dBA)	2040 Revised Preferred Alternative (dBA)	Difference Preferred vs. Existing (dBA)	Difference Preferred vs. No-Build (dBA)
1133	Townhome	B	66	51	52	54	2.4	1.9
1132	Townhome	B	66	47	48	49	1.7	1.3
1131	Townhome	B	66	46	46	48	1.8	1.5
1130	Townhome	B	66	47	48	49	2.0	1.7
1129	Townhome	B	66	46	46	48	2.2	1.9
1128	Townhome	B	66	53	55	56	2.6	1.3
1125	Townhome	B	66	60	60	60	0.9	0.3
1124	Townhome	B	66	57	58	59	1.6	1.1
1123	Townhome	B	66	56	57	58	1.9	1.4
1122	Townhome	B	66	57	57	59	2.2	1.4
1121	Townhome	B	66	62	62	63	0.9	0.2
1119	Townhome	B	66	53	55	55	2.3	0.7
1118	Townhome	B	66	55	56	57	2.3	1.9
1117	Townhome	B	66	54	54	56	2.3	1.9
1116	Townhome	B	66	52	53	55	2.3	1.9
1115	Townhome	B	66	51	52	54	2.2	1.9
1114	Townhome	B	66	51	51	53	2.1	1.6

Appendix F

Proposed Noise Barrier Plans

This page intentionally left blank.

Appendix G

Noise Barrier Evaluation Spreadsheet

This page intentionally left blank.

District Department of Transportation

appendix E

natural resources technical report

Table of Contents

1.0 Introduction 3
1.1 Purpose and Need 4
1.2 Project Area 4
1.3 Alternatives 4
1.3.1 Summary of FEIS Preferred Alternative 8
1.3.2 Summary of the Revised Preferred Alternative 8
2.0 Natural Resources 9
2.1 Water Quality 10
2.1.1 Surface Water Resources 10
2.1.2 Groundwater 17
2.1.3 Environmental Consequences 20
2.1.4 Mitigation 23
2.2 Wetlands 24
2.2.1 Environmental Consequences 26
2.3 Wildlife and Habitats 28
2.3.1 Aquatic Ecology 28
2.3.2 Terrestrial Ecology 32
2.3.3 Environmental Consequences 37
2.4 Threatened and Endangered Species 40
2.4.1 Agency Coordination 40
2.4.2 Biological Assessment 41
2.4.3 Conservation Measures 42
2.4.4 Environmental Consequences 43
2.5 Floodplains 44
2.5.1 Environmental Consequences 45
2.6 Geology, Topography, and Soils 47
2.6.1 Geology 47
2.6.2 Topography 47
2.6.3 Soils 48
2.6.4 Environmental Consequences 55
2.7 Required Permits and Consultations 56
2.7.1 Section 404 Clean Water Act 57
2.7.2 Section 401 Water Quality Certification 57
2.7.3 Section 9 Rivers and Harbors Act 57
2.7.4 Section 10 Rivers and Harbors Act 57
2.7.5 National Pollution Discharge Elimination System 57
2.7.6 Endangered Species Act 58
2.7.7 Migratory Bird Treaty Act 58
3.0 References 59

List of Tables

Table 1: Classification of Water and Designated Use of the Anacostia River as Defined by District of Columbia Water Quality Standards 12
Table 2: District of Columbia Water Quality Standards for Designated Uses 13
Table 3: District of Columbia WQS for Designated Uses and the Percentage of Readings or Means Not Meeting WQS as Measured from Station PO9 15
Table 4: District of Columbia WQS for Trace Metals and Inorganics 17
Table 5: Wells Screened in the Potomac Group Aquifers of the District of Columbia Between 2002 and 2013* 18
Table 6: Groundwater Results for Measured Parameters that Exceed Groundwater Screening Levels and US and DC Standards 20
Table 7: Soils within the Project Area 48

List of Figures

Figure 1: Project Area 5
Figure 2: FEIS Preferred Alternative 6
Figure 3: Revised Preferred Alternative 7
Figure 4: Wetlands, Floodplains, and Surface Waters 11
Figure 5: Delineated Wetlands and Streams within the Project Area 27
Figure 6: Locations of Specimen Trees within the Project Area 34
Figure 7: Soils within the Project Area 50

List of Appendices

Appendix A: 2014 Wetland Delineation Data Sheets

1.0 Introduction

The District of Columbia Department of Transportation (DDOT), in cooperation with the Federal Highway Administration (FHWA), is proposing to replace the Frederick Douglass Memorial Bridge, reconstruct connecting roadways and interchanges, and add streetscape features in the South Capitol Street Project Area. This proposed action would improve safety, multimodal mobility, and accessibility, and support economic development. The Final Environmental Impact Statement (FEIS) approved in 2011, examined the proposed action between Suitland Parkway at Martin Luther King, Jr. Avenue SE on the southeast end of the corridor and D Street on the north end of the corridor (see Figure 1). Decisions about the Project made since approval of the 2011 FEIS resulted in major changes to the design of the project. The most notable decision involved relocating the proposed new Frederick Douglass Memorial Bridge on an alignment immediately south of and parallel to the existing bridge. In addition, new information about current and planned navigation, including the navigation requirements of the U.S. Navy (USN) along the Anacostia River, influenced the decision to include a fixed bridge among the Project alternatives. Therefore a Supplemental Draft Environmental Impact Statement (SFEIS) will be completed to discuss potential impacts to resources from this Revised Preferred Alternative. This document is a supplement to the Natural Resource Technical Report (NRTR) (DDOT 2007a). It incorporates updated data on natural resources within the Project Area, includes potential effects to natural resources associated with the Revised Preferred Alternative, and addresses how these changes may differ from those assessed in the original NRTR.

South Capitol Street was a primary corridor in L'Enfant's 1791 Plan for the City of Washington, and has always been envisioned as a symbolic gateway to the city and its Monumental Core. South Capitol Street connects downtown Washington, DC to neighborhoods in the Southeast and Southwest quadrants of the District of Columbia and Prince George's County, Maryland.

Today, South Capitol Street lacks any characteristics of its historic function as a gateway, and the street's present characteristics and conditions are not appropriate to its central place and important function. South Capitol Street is an urban freeway that has become a conduit for through traffic at the expense of serving the immediate needs of the residents and businesses in the corridor. The transportation infrastructure is in deteriorating condition, and fails to provide necessary connections to community destinations for pedestrians, bicyclists, transit riders, or motorists.

Despite the inadequacies of the transportation infrastructure in the corridor, new development is rapidly transforming former industrial and military uses into thriving mixed use communities and employment centers. Public investment is focused on new developments. This public investment has stimulated private investment in new residential, office, and retail developments throughout the corridor. The economic development of the South Capitol Street Corridor, and along the Anacostia River, is part of a District of Columbia and regional effort to revitalize the waterfront and clean up the river. The vision for the Anacostia Waterfront is an area that will unite the city economically, physically, and socially as the center of 21st century Washington and a cornerstone of the National Capital Region. South Capitol Street's transportation infrastructure must support and enhance this new vision of the Anacostia Waterfront.

1.1 Purpose and Need

The Purpose and Need of the Project remains the same as was described in the FEIS. In summary, the purpose of the South Capitol Street Project is to improve safety, multimodal mobility and accessibility, and support economic development. The Project would transform the existing corridor into an urban gateway to the U.S. Capitol and District of Columbia's Monumental Core. Transportation improvements were identified to incorporate long-term environmental sustainability and context sensitive design. Specifically, the project addresses the following needs.

Safety: The design and deteriorating condition of the transportation infrastructure in the corridor results in poor safety conditions for motorists, bicyclists, pedestrians, and transit riders.

Mobility: The lack of critical regional roadway connections and facilities for bicyclists and pedestrians support the need to improve mobility in the South Capitol Street Corridor.

Accessibility: Several key destinations in or adjacent to the corridor are difficult to reach using the existing transportation infrastructure. Grade separations, median barriers, and ramp and intersection configurations limit access to activity centers for motorists, bicyclists, pedestrians, and transit riders.

Economic Development: The density of employment and residential development forecasted for the area highlights the need to support economic growth. Public investments have increased employment and will stimulate additional private investment in new residential, office and retail developments. As economic development continues to occur within the Project Area, additional demand will continue to be placed on transportation infrastructure to meet future transportation needs.

1.2 Project Area

The South Capitol Street Project Area is located in the Southwest and Southeast quadrants of the District of Columbia adjacent to the Anacostia River (Figure 1). The northern boundary is at D Street at the U.S. Capitol. The eastern boundary follows 2nd Street SE west of the Anacostia River and expands to the east of the Anacostia Metrorail station parking deck north of Interstate 295 east of the river. The western boundary is just west of 2nd Street from Independence Avenue SW to T Street SW north of the Anacostia River and Mitscher Road SW in the Anacostia Naval Station. The Southern boundary of the Project Area is just south of the Barry Farms neighborhood (near the intersection of Wade and Stevens Roads SE) and includes a portion of St. Elizabeths West Campus.

1.3 Alternatives

There are two Build Alternatives currently under study for the South Capitol Street project, the FEIS Preferred Alternative (
Figure 2) and the Revised Preferred Alternative (Figure 3). Each of the Build Alternatives meets the purpose and need for the project and is the result of extensive public and agency coordination.

Figure 1: Project Area

Figure 2: FEIS Preferred Alternative

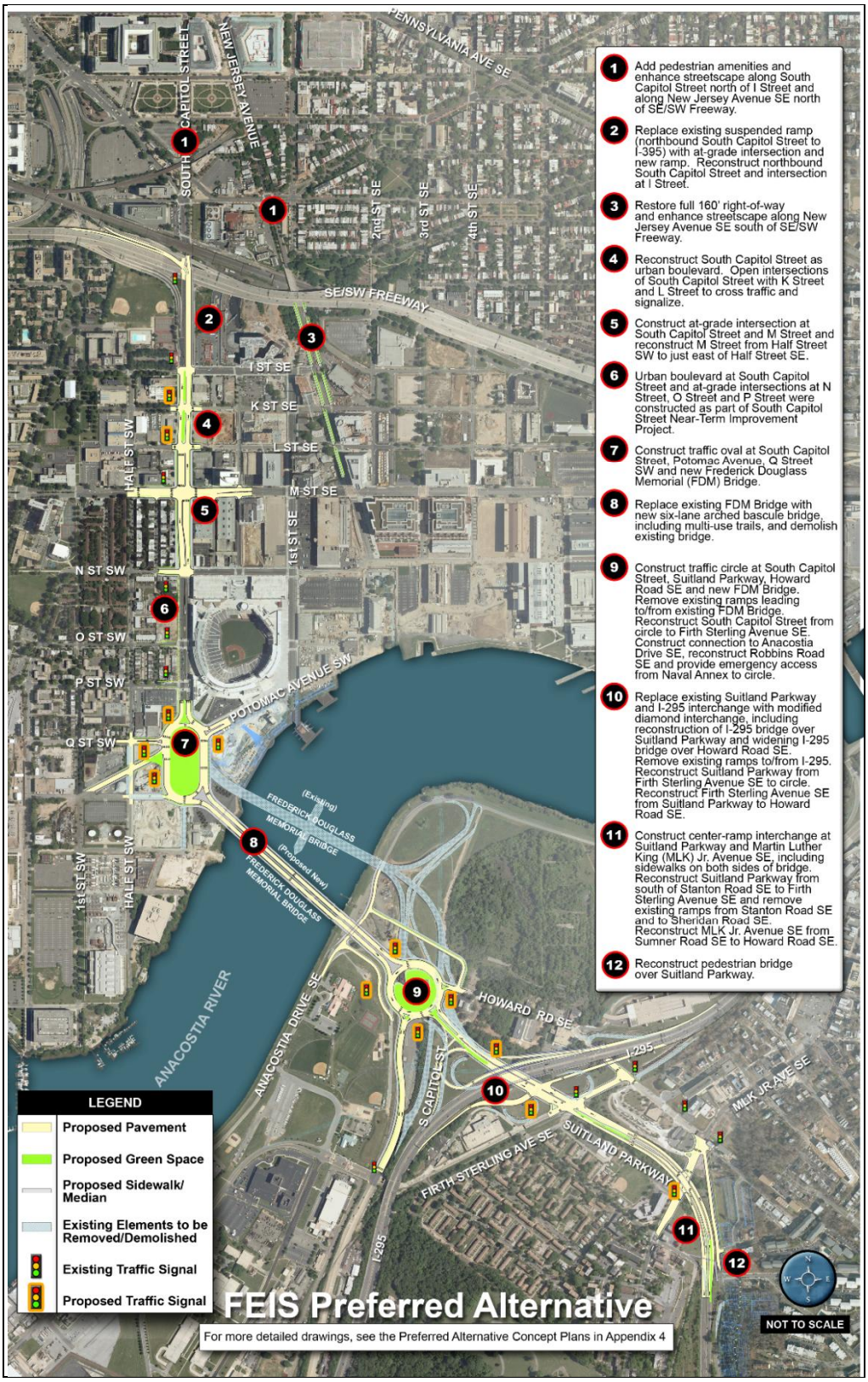
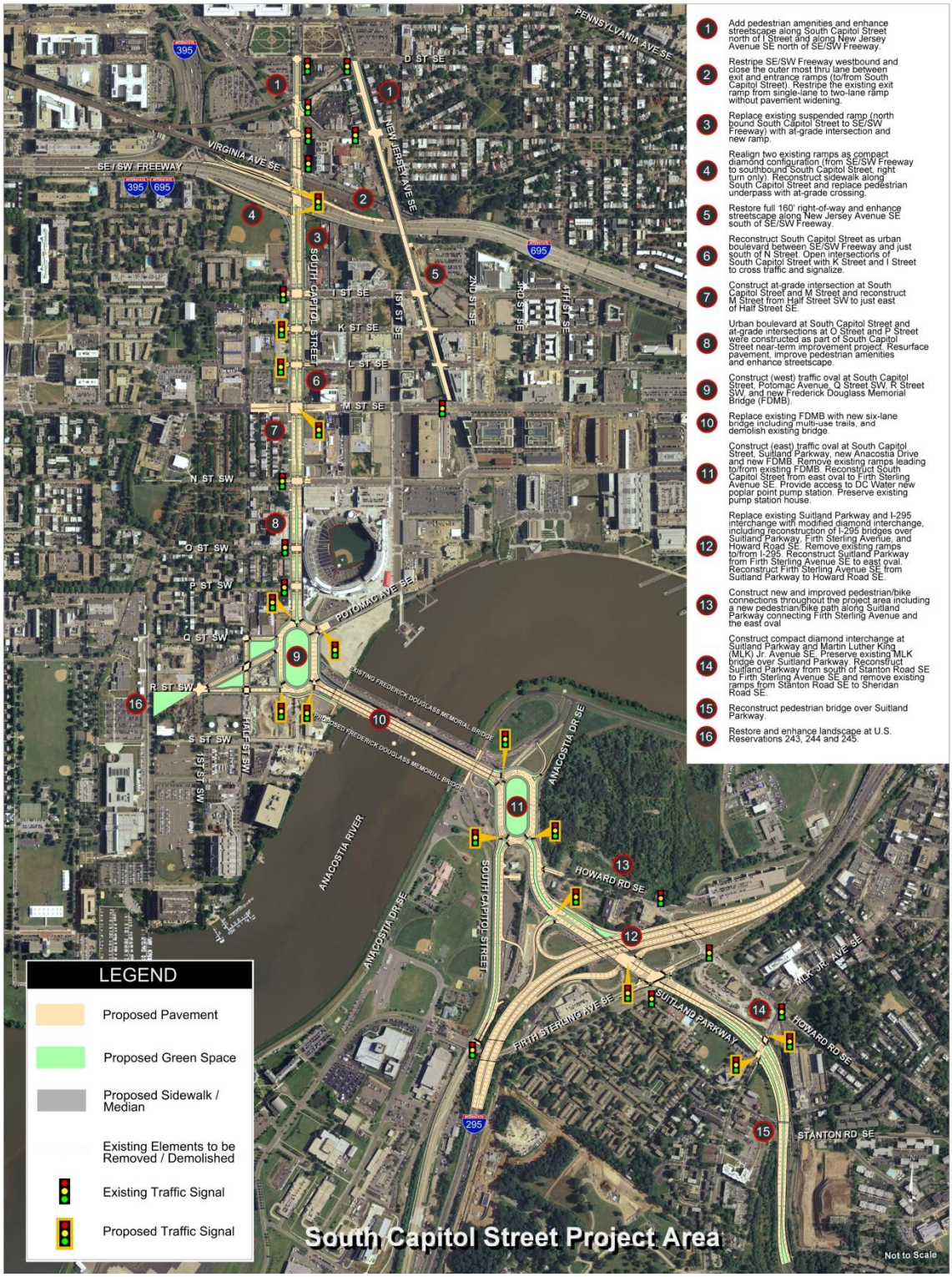


Figure 3: Revised Preferred Alternative



1.3.1 Summary of FEIS Preferred Alternative

The major components of the South Capitol Street FEIS Preferred Alternative would include:

- Rebuild South Capitol Street as a six-lane boulevard with landscaped median west of the Anacostia River.
- Reconstruct at-grade intersections along South Capitol Street at I, N, O, P, K, L, and M streets.
- Reconstruct the existing ramp from northbound South Capitol Street to I-395 as an at-grade intersection.
- Construct a four-lane signalized traffic oval connecting South Capitol Street, Potomac Avenue, and Q Street SW.
- Replace the existing Frederick Douglass Memorial Bridge with an arched bascule bridge that includes bicycle and pedestrian access.
- Construct a traffic circle at eastern approach to the new Frederick Douglass Memorial Bridge to connect South Capitol Street, Suitland Parkway, and Howard Road SE.
- Extend Anacostia Drive to the north gate entrance of the U.S. Naval Support Facility Anacostia. Construct an access road from Anacostia Drive to Howard Road and the traffic circle.
- Replace the existing Suitland Parkway/I-295 interchange with a two-lane loop ramp for I-295 SB at Suitland Parkway, and a new traffic signal at the merge point with Suitland Parkway.
- Reconstruct the I-295 bridge over South Capitol Street.
- Widen the I-295 bridge over Howard Road.
- Construct streetscape improvements along New Jersey Avenue.
- Widen the Martin Luther King, Jr. Avenue overpass at Suitland Parkway to accommodate a new multi-use trail.
- Construct a single-point center ramp interchange to create new access between Suitland Parkway and Martin Luther King, Jr. Avenue.
- Reconstruct pedestrian over-pass over Suitland Parkway between Sheridan Road and Barry Farms.
- Implement signed bicycle routes along New Jersey Avenue and throughout the Project Area to provide connections and improved access to the Anacostia Riverwalk Trail, the riverfront, and Historic Anacostia.
- Install unifying landscape features at the intersections of South Capitol Street and Potomac Avenue and South Capitol Street and Suitland Parkway to visually anchor the two ends of the new Frederick Douglass Memorial Bridge.

A more detailed description of the FEIS Preferred Alternative can be found in the FEIS.

1.3.2 Summary of the Revised Preferred Alternative

Following completion of the FEIS, design changes were made to the FEIS Preferred Alternative, resulting in the development of a Revised Preferred Alternative. The major elements of these design changes include:

- The alignment for the new Frederick Douglass Memorial Bridge was shifted parallel to and approximately 30 feet from the south side or downstream from the existing bridge superstructure. This bridge alignment would avoid the need to obtain right-of-way from Joint Base Anacostia-Bolling (JBAB). In addition, the bridge would have a fixed span, not a moveable span as proposed in the FEIS Preferred Alternative.
- The size of the traffic oval on the western approach to the new bridge was slightly reduced.
- At the eastern approach to the new bridge, a traffic oval, similar in size and shape to the West Oval, replaced the traffic circle. The East Oval will be located entirely within the existing DDOT right-of-way. Similar to the previously proposed traffic circle, the oval will still provide connections to the realigned South Capitol Street and Suitland Parkway. The initial configuration of Howard Road would connect directly with Suitland Parkway. The east oval would sever the existing access roads into the Poplar Point section of Anacostia Park. To maintain park access, the northeast leg of the east oval would be used for both the park's ingress and egress at Poplar Point.
- At the I-695/Suitland Parkway interchange, the grade of Ramp B (southbound I-295 to westbound Howard Road SE) was adjusted to be 6.5 percent from 9 percent, which would have been substandard for an interstate highway ramp.
- Replaced a portion of the I-295 Bridge over Firth Sterling Avenue SE and an inactive railroad right-of-way. The railroad would be replaced with earthen fill.
- At the Martin Luther King Jr. Avenue SE overpass at Suitland Parkway, the proposed ramps would be configured into an urban diamond interchange, instead of an interchange with center ramps.
- The eastbound I-695 ramp to southbound South Capitol Street was changed to an urban interchange ramp with South Capitol Street.

A more detailed description of the Revised Preferred Alternative is provided in the SFEIS.

2.0 Natural Resources

Potential impacts to natural resources would be expected to occur as a result of either Build Alternative were identified for construction and operation of the South Capitol Street project. Analysis of natural resources compares existing conditions to conditions expected to occur as a result of construction (FEIS Alternative and Revised Preferred Alternative). Natural resources analyzed include the following:

- surface water and ground water (including water quality)
- wetlands
- fish and wildlife (including habitat)
- federally threatened and endangered species
- floodplains
- geology, topography and soils

A list of District of Columbia and federally required permits and consultations necessary for completion of the South Capitol Street project are also provided as they relate to natural resources.

2.1 Water Quality

2.1.1 Surface Water Resources

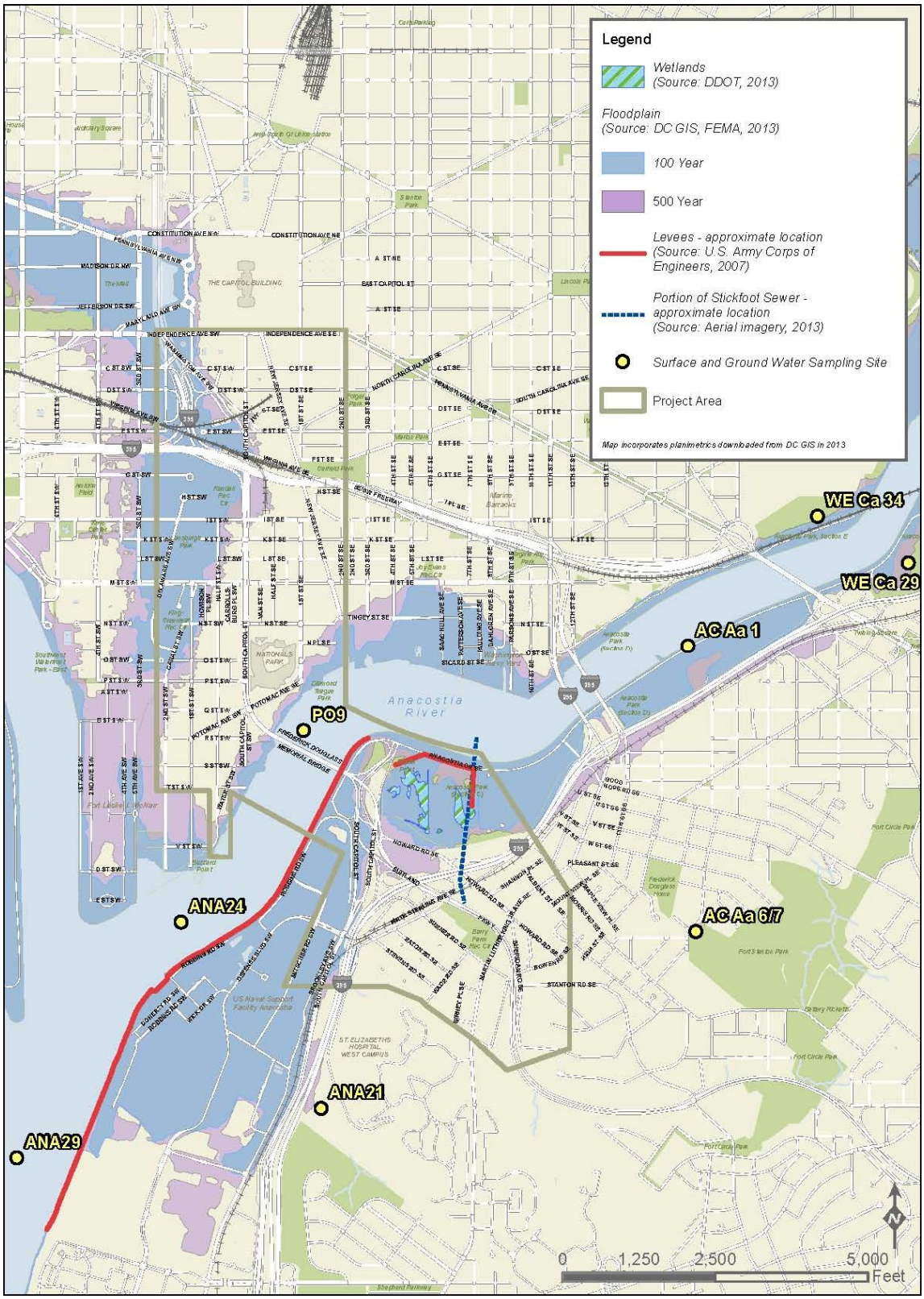
The federal Clean Water Act (CWA) establishes the structure for regulating discharges of pollutants into the Waters of the U.S. (WUS) and regulating water quality standards for surface waters. WUS include unvegetated ponds, seasonal pools, and perennial, intermittent, and ephemeral stream channels. WUS also includes wetlands, however, these are discussed separately in Section 2.2 of this report.

The boundaries of surface waters within the Project Area were identified on available existing mapping and in the field during the wetland delineation for the project. Detailed information on the results of the delineation is included within the wetland delineation section of this report. Surface water quality data were gathered from the U.S. Environmental Protection Agency (USEPA), Metropolitan Washington Council of Governments (MWCOG), District of Columbia Department of Environment (DDOE), National Oceanic and Atmospheric Administration (NOAA), Interstate Commission on the Potomac River Basin (ICPRB), U.S. Geological Survey (USGS), and other agencies.

The South Capitol Street Project Area is located entirely within the Anacostia River basin, a major tributary to the Potomac River. The Anacostia River watershed has a drainage area of 176 square miles, with Prince George's County comprising a majority of this area (49 percent), followed by Montgomery County (34 percent), and the District of Columbia (17 percent). The primary surface water resource in the Project Area is the lower Anacostia River, which is tidally influenced. The Anacostia River is classified as a navigable waterway by the U.S. Army Corps of Engineers (USACE). Other waterways identified within the Project Area during wetland delineations, conducted in 2005 and 2014, include a perennial tributary known as Stickfoot Branch (Figure 4). Historically, there were more small surface water resources draining to the Anacostia River within the Project Area, but these have been intercepted by storm drains and are no longer identified as surface waters. There are no national Wild and Scenic Rivers located within the Project Area.

Stickfoot Branch flows onto the southern end of the Project Area from a riprap channel on the west side of Suitland Parkway. The stream flows north into a reinforced concrete pipe under Suitland Parkway and is approximately five feet wide and one and a half feet deep at top of bank. During the time of the July 2014 fieldwork, this stream had an average water depth of one inch. From the culvert under Suitland Parkway, it appears that Stickfoot Branch eventually flows into a stormwater sewer pipe through Poplar Point and the Project Area. The Stickfoot Branch culvert through Poplar Point is over 72 inches in diameter and is considered in poor condition. The average pool depth is three feet. As part of the *Anacostia Waterfront Initiative Poplar Point Plan,* the Stickfoot Branch is being considered for daylighting by restoring the stream channel and exposing the stormwater to air, sunlight, soil, and other natural elements (DDOT 2003). Additionally, as part of the *Anacostia Waterfront Corporation Final Environmental Standards* (October 2012), one of the minimum standards to achieve its goal is to daylight streams including Stickfoot Branch.

Figure 4: Wetlands, Floodplains, and Surface Waters



2.1.1.1. Chemical Water Quality

Under the CWA, the USEPA has implemented pollution control programs and set water quality standards for all contaminants in surface waters. The CWA mandates that total maximum daily loads (TMDL) be established in order to bring existing water quality up to minimum established water quality standards in streams that have been categorized as "impaired." A TMDL is an estimate of the maximum amount of a pollutant that a given waterbody can absorb without violating environmental water quality standards (MDE 2011).

Historically, water quality in the tidal Anacostia River, as recorded in the Chesapeake Bay system (USEPA 1997), has been poor for both ecological and human health. High particulate loading is a major physical stressor, especially during storm events, which contribute to high turbidity and high rates of sedimentation (Syracuse Research Corporation and NOAA 2000). Biological stressors include fecal coliform pollution originating from combined sewer (sanitary and stormwater) overflows (CSO), which discharge sewage into the river during significant rainfall events.

Designated uses for all District waters are promulgated by the District of Columbia Municipal Regulations and the District of Columbia Water Quality Standards (WQS) (District of Columbia Law 5-188; District of Columbia Official Code § 8-103.01). The current uses of the Anacostia River include B, C, D, and E (Table 1). Primary contact recreation is not currently a designated use.

Table 1: Classification of Water and Designated Use of the Anacostia River as Defined by District of Columbia Water Quality Standards

Classification Code	Use Definition	Current use of the Anacostia River
A	Primary contact recreation	No
B	Secondary contact recreation and aesthetic enjoyment	Yes
C	Protection and propagation of fish, shellfish, and wildlife	Yes
D	Protection of human health related to consumption of fish and shellfish	Yes
E	Navigation	Yes

The lower Anacostia River from below the Pennsylvania Avenue Bridge to at the Potomac River was listed as an "Impaired Water" by USEPA in 2010 for Use Classes B and D, and considered a high priority for TMDL development for oil and grease and trash (MDE and DDOE 2010). Also in 2010, a joint TMDL was approved with the state of Maryland and the District of Columbia to limit the amount of trash in the Anacostia River. Three other TMDLs have been approved for the Anacostia River as a whole: organics and metals, biological oxygen demand, and total suspended solids (TSS).

In 2003, the District of Columbia established criteria within the WQS, as part of its Municipal Regulations for WUS and their designated uses. In 2013, these WQS were modified. Two important changes to these criteria from 2003 to 2013 were, 1) that fecal coliform or *Escherichia coli (E. coli*) no longer has a criterion for Classes B and C and 2) that dissolved oxygen criteria were adjusted to include both instantaneous minimum standards, as well as standards based on a seven or 30-day mean during different times of the year. These standards are detailed in Table 2. The District of Columbia does not

currently have numerical criteria for TSS, but a TMDL has been developed based on USEPA's interpretation of the District of Columbia's narrative criteria to protect aquatic life uses. This TMDL also considers water clarity and the requirements necessary for submerged aquatic vegetation growth and survival for each salinity regime. The TMDL requirement for TSS within the lower Anacostia River is less than or equal to 11.9 milligrams per liter (mg/l) during the growing season.

Table 2: District of Columbia Water Quality Standards for Designated Uses

Constituent	Criteria for Classes		
	A	B	C
Bacteriological (MPN/100 mL)			
E. coli[1]			
Geometric Mean (Maximum 30 day geometric mean for 5 samples)	126		
Single Sample Value	410		
Physical			
Dissolved Oxygen (mg/L)			
February 1 through May 31			
7-day mean			6.0
Instantaneous minimum			5.0
June 1 through January 31			
30-day mean			5.5
7-day mean			4.0
Instantaneous minimum			3.2
Temperature (^{o}C)			
Maximum			32.2
Maximum change above ambient			2.8
pH			
Greater than	6.0	6.0	6.0
And less than	8.5	8.5	8.5
Turbidity increase above ambient (NTU)	20	20	20
Secchi Depth (m)(seasonal segment average)			
April 1 through October 31			0.8
Total dissolved gases (maximum % saturation)			110
Hydrogen Sulfide (maximum μg/L)			2.0
Oil & grease (mg/L)			10.0
Biological			
Chlorophyll a (μg/L)(seasonal segment average)			
July 1 through September 30			25

Source: District of Columbia Municipal Regulations, 2013

There are a number of locations where water quality data have been collected by DDOE near the Project Area between 1999 and 2003. These stations, ANA-21, ANA-24, ANA-29, and PO9 are located in the Anacostia River and a tributary (Figure 4). These four stations were sampled for temperature, turbidity, dissolved oxygen, pH, fecal coliform, and TSS concentrations. Over this period, all of these parameters fell within the standard established for all of the designated uses set forth by the District of Columbia WQS

(ICPRB 1998, DDOE 2000). Between 2008 and 2012, water quality data were collected by the DDOE from PO9. Parameters measured were: temperature, turbidity, dissolved oxygen, pH, and chlorophyll a. Table 3 shows the percentage of readings that were out of compliance with WQS for each constituent measured from Station PO9 between 2008 and 2012. All water temperature and chlorophyll a values at the South Capitol monitoring station were in compliance with WQS. A majority of the pH values were in compliance with WQS, with less than one percent to three percent of the annual values not meeting WQS. Between 17 and 39 percent of the turbidity readings collected each year were out of compliance between 2008 and 2011; no turbidity data were available for 2012. Dissolved oxygen values were out of compliance periodically from 2008 to 2012. Seven-day dissolved oxygen averages did not meet WQS from eight to 57 percent of the time and instantaneous readings were out of compliance between two and 35 percent of the time. The 30-day minimum averages from June through January violated WQS from 29 to 71 percent of the time. While this portion of the Anacostia River no longer has an associated fecal coliform or *E. coli* standard, it did have an elevated average *E. coli* count (565MPN/100ml) from 2008 to 2011 (DDOE 2012).

Table 3: District of Columbia WQS for Designated Uses and the Percentage of Readings or Means Not Meeting WQS as Measured from Station PO9

Constituent	Standards for Criteria Classes B and C	2008	2009	2010	2011	2012
Dissolved oxygen (mg/L)						
February 1 - May 31						
7-day mean minimum	6	33%	57%	39%	8%	40%
Instantaneous minimum	5	20%	24%	18%	2%	19%
June 1 -January 31						
30-day mean minimum	5.5	29%	57%	38%	43%	71%
7-day mean minimum	4	21%	18%	15%	9%	44%
Instantaneous minimum	3.2	15%	17%	16%	35%	28%
Temperature (ºC)		met standards	met standards	met standards	met standards	met standards
Maximum	32.2					
Maximum change above ambient	2.8					
PH	6.0 - 8.5	<1%	<1%	3%	3%	3%
Turbidity (ambient (NTU))	≤ 20	17%	39%	31%	27%	no data available
Chlorophyll a (µg/L)(average July 1 through September 30)	<25	met standards	met standards	met standards	met standards	no data available

Sources: District of Columbia Municipal Regulations, 2013 and DDOE/District Rivers Monitoring Program (accessed 9/23/2013)

Data from the District of Columbia's 2001 and 2002 storm water monitoring stations suggest that the Anacostia River does not have significant oil and grease impairment. Samples taken from Stickfoot Branch exhibited no traces of oil and grease (DDOE 2003).

Between 1999 and 2003, the average TSS concentration for station ANA-21 was 21.75 milligrams per liter (mg/L), exceeding the District of Columbia standard. Additionally, both ANA-24 and ANA-29 fell just below the standard at 10.45 mg/L and 10.66 mg/L, respectively. Station ANA-21 also had slightly elevated turbidity concentrations (21.38 nephelometric turbidity units [NTU]), while concentrations at stations ANA-24 and ANA-29 fell within the standard. TSS concentrations have been linked to high turbidity levels, which adversely impact the designated uses of the Anacostia River (DDOE 2002). The primary sources of TSS loads come from stormwater runoff and from the Northeast and Northwest Branches of the Anacostia River, which drain a very large urbanized watershed.

The tidal Anacostia River has been shown to contain elevated levels of many toxic contaminants that include trace metals, organic compounds such as polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pesticides, and herbicides. PAHs are found in petroleum, coal, and other fossil fuels whose byproducts have a higher concentration of carcinogenic compounds. PCBs are used in electrical equipment including heat transfer systems, fluorescent lamp ballasts, television sets, and numerous other kinds of electrical appliances. Additionally, PCBs were used as plasticizers in paints, plastics, and rubber products and in pigments, dyes, carbonless copy paper, and in many other applications. These contaminants enter the river through non-point source loading, CSOs, erosion and sedimentation, and nutrient loading (Syracuse Research Corporation and NOAA 2000).

Many of these contaminants entering the Anacostia River settle into the lower estuarine portions of the river by way of its tributaries (i.e., Northwest Branch, Northeast Branch, Watts Branch, and Beaverdam Creek). A study conducted in 2003 involved the translocation of healthy Asiatic clams (*Corbicula fluminea*) from Potomac River sites to sites in the Anacostia River and its tributaries to locate watershed pollutant sources. The Potomac River site is located five kilometers (km) below the mouth of the Anacostia River estuary and serves as a reference site because of its ranking as the second best large-mouth bass fishing area in the United States (Phelps 2004). Organic compounds (PAHs and PCBs), pesticides, and six metals (cadmium, copper, chromium, iron, lead, and zinc) were biomonitored at four Anacostia estuary sites and 16 tributary sites. The total PAHs in clam tissues significantly exceeded the Potomac River reference at all Anacostia estuary sites and at a majority of the tributary sites. Total PCBs in translocated clam tissue significantly exceeded reference levels at all Anacostia River sites, as well as in the lower Northeast Branch and two sites in the lower Beaverdam Creek. Total pesticide accumulation in clam tissue significantly exceeded the reference in three tributaries, including a large percentage of chlordane in the Watts Branch and Northeast Branch tributaries. The Northeast Branch contributes approximately 45 percent of Anacostia River tributary flow (Phelps 2004). In 2008 and 2009, these same methods were used to evaluate toxic metals, PCBs, and PAHs at the outlet of Stickfoot Branch. At this site, metals did not exceed reference, but PAHs exceeded reference concentrations and were two times the average of all the Anacostia tidal sites (Phelps 2010). High chlordane was also detected in clams from the Stickfoot Branch site in 2008 and 2009.

In another study in the lower Anacostia River, liver and skin tumor prevalence in brown bullheads (*Ameiurus nebulosus*) was assessed to evaluate PAH concentrations in the sediment (Pinkney et al. 2004). Polynuclear aromatic hydrocarbons cause liver tumors in bottom-dwelling fish species. Tumor prevalence was assessed in two, five-year cycles (1996 to 2001 and 2009 to 2011). A statistically significant decrease in tumor prevalence was observed in the second monitoring cycle, suggesting that PAHs in Anacostia sediment have declined.

The District of Columbia WQS for trace metal and organics for the C and D Designated Uses of the lower Anacostia River are listed in Table 4. These concentrations are measured as either chronic or acute. A chronic concentration is the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (four day average), while an acute concentration is the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (one-hour average).

Table 4: District of Columbia WQS for Trace Metals and Inorganics

Constituent	Designated Use C		Designated Use D
	[1]CCC (Four day average)	[2]CMC (One hour average)	(30 day average)
Antimony, dissolved (mg/L)	-	-	4.3
Arsenic, dissolved (mg/L)	0.15	0.34	0.00014
Cadmium, dissolved (µg/L)	0.10 – 0.84	0.11 – 4.69	-
Chlorine, total residual (mg/L)	0.011	0.019	-
Chromium, trivalent, dissolved (µg/L)	57.19 – 554.01	176.31 – 1707.85	-
Copper, dissolved (µg/L)	3.47 – 37.10	4.61 – 62.82	-
Cyanide, free (mg/L)	0.0052	0.022	220.0
Iron, dissolved (mg/L)	1.0	-	-
Lead, dissolved (µg/L)	0.25 – 16.22	6.55 - 416.26	-
Mercury, total recoverable (mg/L)	0.000012	0.0024	0.00015
Nickel, dissolved (µg/L)	48.65 – 507.89	438.06 – 4573.23	4600
Selenium, total recoverable (mg/L)	0.005	0.02	-
Silver, dissolved (µg/L)	-	0.31 – 37.44	65000
Thallium, dissolved (mg/L)	-	-	0.0063
Zinc, dissolved (µg/L)	32.28 – 338.27	35.36 – 370.45	-

[1] CCC- Criteria Continuous Concentration
[2] CMC- Criteria Maximum Concentration
Source: District of Columbia Municipal Regulations, 2003

Samples from water quality monitoring stations within the Anacostia River (ANA-12, ANA-17, and ANA-21) were tested for the constituents listed in Table 4, except for chlorine, cyanide, and iron. Average concentrations for antimony from all of the stations fell within the District of Columbia's standard, while all other concentrations sampled from the stations far exceeded the standard.

Surface sediment samples taken from the top six inches of the channel bed throughout the tidal Anacostia River were analyzed for USEPA's list of priority pollutants. Concentrations for over 60 chemicals were on the list, with the greatest frequencies of those exceeding WQS occurring within the pesticide, PCB, and metal classes of chemicals. The highest contaminant levels and the greatest number of detected priority pollutants were found between the Benning Road Bridge and the Frederick Douglass Memorial Bridge (Syracuse Research Corporation and NOAA 2000).

2.1.2 Groundwater

Drinking water is supplied by the District of Columbia's Water and Sewer Authority (WASA), which purchases water from the Potomac River through the Washington Aqueduct Division of the USACE. The District of Columbia does not use groundwater as a potable water source, but still maintains regulations for the different use classes that relate to surface water recharge, drinking water in other jurisdictions, and potential future use as a raw drinking water source in the District of Columbia. All groundwater in the District of Columbia is classified as Class G1, which is considered the most restrictive use

class, until enough information is provided to warrant a different classification. Class G1 is defined as groundwater that is highly vulnerable to contamination within recharge areas of drinking water aquifers of adjacent jurisdictions, hydrologically connected to surface waters within the District of Columbia, and discharges to a sensitive ecological system that supports a unique habitat (District of Columbia Municipal Regulations 1994).

Available data from USGS, Maryland Geological Survey (MGS), DDOE, and USEPA published resources were used in determining the availability and quality of groundwater within the South Capitol Street Project Area. The Project Area is underlain by the Northern Atlantic Coastal Plain aquifer, which is composed of semi-consolidated sand aquifers of the regional Potomac Group aquifers (USGS 1984). Locally, the Patuxent and Patapsco aquifers of the Potomac Group are the only aquifers used for water supply in the District of Columbia. These sand and gravel aquifers are interlayered with silt and clay confining beds that create artesian systems, systems in which the water-bearing zone is overlain by a relatively impermeable layer.

A total of 340 million gallons per day (Mgal/d) of both surface and groundwater withdrawals are used within the District of Columbia. Approximately one Mgal/d of groundwater from the Potomac Group aquifers is used for industrial and municipal purposes (USGS 1984). Construction activities that use sump pumps for groundwater control and dewatering are the largest users of groundwater (DDOE 1992). The ability of groundwater to recharge in downtown Washington is documented as very poor and decreasing due to the impervious surfaces, sump pumps, and dewatering activities necessary to maintain subsurface transit and various other building maintenance and operations (UDC 1992).

Groundwater wells installed within the Potomac Group aquifers commonly range from 30 to 1,250 feet below the ground surface. According to well data from USGS, the median depth of groundwater observed in wells in the District of Columbia was 15 feet below the ground surface. Data from wells near the Project Area have a median depth of groundwater at 8.5 feet below the ground surface (Table 5).

Table 5: Wells Screened in the Potomac Group Aquifers of the District of Columbia Between 2002 and 2013*

Well Name	Latitude (Decimal)	Longitude (Decimal)	Well Depth (feet)	Average Water Level Below Ground Surface (feet)
AC Aa 1	38.87361111	-76.98361111	30	2.3
AC Aa 2	38.865944	-76.967583	17	8.4
WE Ca 29	38.87733333	-76.97091667	48.5	8.5
WE Cb 8	38.88119444	-76.95777778	265	38.3
WE Ca 34	38.879333	-76.976417	33	12.6

Source: (USGS 2005)
*Wells were not all monitored in all years

Average annual precipitation in the District of Columbia is approximately 43 inches, with about one-fourth to one-third of this precipitation reaching the water table (USGS 1984). The water table varies across the Project Area based on seasonality and local pre- and post-construction activity. The groundwater used for industrial and construction purposes is rarely directed into aquifers once it has been used, as most of this water is pumped into

storm and sanitary systems at the end of each day (DDOE 1992). Groundwater discharge occurs by upward leakage to shallower aquifers (USGS 2005). Water level measurements in the fill areas of Poplar Point are controlled by the topography of confining clay layers and by localized areas of recharge (Ridolfi 2003). Erratic water level patterns observed in monitoring wells within Poplar Point also suggest that there is no consistent direction of groundwater flow in the fill areas. Some of the monitoring well and cross section data in Poplar Point imply that the lower permeable unit of fill may be hydraulically connected to the Anacostia River and experiencing tidal fluctuation.

The quality of groundwater within the Potomac Group aquifers is generally high in iron, often exceeding the USEPA drinking water standard of 0.3 mg/L. The median concentration of dissolved solids is considerably lower than the drinking water standard. The groundwater is considered “soft” in these aquifers, with a median hardness of 14 mg/L. Chloride concentrations (10 mg/L) and nitrate (10 mg/L) plus nitrite (as nitrogen) fall below the USEPA standard (USGS 1987). However, elevated concentrations of chloride or nitrate plus nitrite were not detected at groundwater wells in the vicinity of the South Capitol Street Bridge.

Existing and potential sources of groundwater contamination include sources such as landfills, underground storage tanks, septic tank systems, landfills or open dumps, and military facilities. Groundwater contamination from septic system failure is usually localized around communities with numerous failing systems. Groundwater samples from wells installed within the Project Area were sampled for inorganic concentrations, volatile organic compounds, and petroleum hydrocarbons. Concentrations associated with these parameters were compared to existing screening levels that include USEPA Safe Drinking Water Act Maximum Contaminant Level (MCL), District of Columbia Groundwater Criteria, District of Columbia Risk-Based Screening Levels (RBLs) for Residential and Industrial Groundwater, District of Columbia Clean Up Standards for Hydrocarbon-Contaminated Groundwater, and USEPA’s III Risk-Based Concentrations (RBCs) for Tap Water (Ridolfi 2003).

Groundwater sampling in the Project Area identified several inorganic contaminants at levels exceeding the maximum contaminant levels for USEPA or DC standards: arsenic, iron, and manganese (Table 6). Arsenic was detected at concentrations above the USEPA RBC for tap water during all sampling events and was detected above the USEPA MCL on two occasions. Manganese and iron were consistently detected at concentrations above the District of Columbia’s Groundwater Criterion (Table 6). While benzene and petroleum hydrocarbons (diesel and gasoline) were found in levels that violated the USEPA and DC standards in 2002, neither was detected at elevated levels after this time (Ridolfi 2003).

A study was performed by the USGS and DDOE to determine pesticide concentrations in groundwater in the Anacostia River watershed (Koterba et al. 2010). Several groundwater wells throughout the watershed were monitored for pesticides, major ions, and nutrients in 2005 and 2008. No pesticides were found in the wells in close proximity to the Project Area, but were found in several other wells in the Anacostia River watershed. The authors of the study attribute the absence of pesticides in wells within the Project Area to their locations in large parks or open spaces, as opposed to the sites with pesticides that were in close proximity to developed areas.

Buzzards Point, located on the southeast side of the intersection of Potomac Avenue and the Frederic Douglass Memorial Bridge, has been cited to have groundwater contamination from Total Petroleum Hydrocarbons, Benzene/Tolunene/Ethylbenzene/Xylenes (BTEX), and naphthalene above DDOE action levels (EEE 2008). This site was previously owned by Amerada Hess Corporation and contained several petroleum underground storage tanks and aboveground storage tanks, some of which have been removed.

Table 6: Groundwater Results for Measured Parameters that Exceed Groundwater Screening Levels and US and DC Standards

Parameter Group		**Total Inorganics (mg/L)**		
Analyte		**Arsenic**	**Manganese**	**Iron**
USEPA Safe Drinking Water Act MCL		0.01	N/A	N/A
District of Columbia Groundwater Criteria Class		0.05	0.05	0.3
USEPA Region III RBC for Tap Water		0.000045	2.6	NA
District of Columbia Cleanup Standard for Hydrocarbon Contaminated Groundwater		-	-	-
Sample Date	**Station ID**			
9/15/2010	WE Cb 8	**0.00019**	**0.189**	**4.6**
9/7/2010	WE Ca 29	**0.0014**	**0.150**	**7.4**
9/8/2010	WE Ca 34	**0.00092**	**1.26**	**7.5**
9/4/2008	WE Cb 8	**-**	**1.59**	**3.5**
8/27/2008	WE Ca 34	-	**0.58**	**3.1**
Aug-Sept 2008	AC Aa 7	-	**0.57**	**4.2**
Aug-Sept 2008	AC Aa 6	-	**1.58**	**-**
12/20/2005	WE Cb 8	**0.00011**	**0.189**	**3.1**
9/27/2005	WE Ca 34	**0.021**	**0.64**	**7.9**
9/21/2005	AC Aa 1	**0.0399**	**0.0631**	**22.5**
9/19/2005	WE Ca 29	**0.0031**	**0.141**	**23.9**

Source: (Ridolfi 2003, Koterba et al. 2010)

2.1.3 Environmental Consequences

2.1.3.1. Surface Water Resources

Section 404 of the CWA provides regulatory authority and is administered by the USACE for issuance of permits for discharge of dredged or fill material into WUS. The USACE also issues permits for alterations in or over navigable waters such as the Anacostia River, under Section 10 of the Rivers and Harbors Act. Similarly, compliance with Section 401 of the CWA is also required for any impacts to the Anacostia River or other impacted streams or wetlands. Administered by the Water Quality Division of the District of Columbia DDOE, the Section 401 certification acknowledges the USACE issuance of the 404 permit and allows for the District of Columbia to add specific conditions to assure all the District of Columbia's water quality standards are met. Section 9 of the Rivers and Harbors Act is administered by the U.S. Coast Guard (USCG). This permit is required for construction of a new bridge over a navigable waterway.

As previously discussed, surface water resources within the Project Area are limited to two stream resources: the Anacostia River, andStickfoot Branch, including an above ground section just west of Suitland Parkway and the portion that drains in a culvert through Poplar Point to the Anacostia River. Potential impacts to surface waters from either of the Build Alternatives could include effects to physical aspects of Project Area streams as well as water quality impacts from runoff during construction and/or operation of the new bridge. Most impacts from the Project relate to temporary effects from construction and demolition activities, although permanent impacts from new bridge piers are anticipated within the Anacostia River.

FEIS Preferred Alternative

The FEIS Preferred Alternative involves the construction of a new Frederick Douglass Memorial Bridge over the Anacostia River and demolition of the existing bridge. The proposed design is an arched bascule, movable bridge, including two main piers in the river and one end pier half in and half out of the river. The end pier on the east side has ample clearance from the existing seawall and coincides with the existing levee. The interim navigation channel during construction is maximized through the east channel of the existing bridge. The impact to the riverbed is approximately 11,884 square feet. Pilings used to support the piers are generally seven feet in diameter, with an average depth of 18 feet. The seven piers supporting the existing bridge would be removed to a depth approximately 2 to 5 feet below the stream bed and the voids would be backfilled with suitable material.

Revised Preferred Alternative

The Revised Preferred Alternative involves construction of a new fixed span bridge parallel to and just south of the existing bridge. The new bridge will span the existing levee along the eastern shore of the Anacostia River. Impacts to the Anacostia River from the Revised Preferred Alternative would be associated with the construction of the new bridge and demolition of the existing bridge. Four in-stream piers will support the bridge structure, while two piers are proposed within the floodplain on either side of the Anacostia River. The impact to the riverbed is anticipated to be approximately 20,368 square feet. Pilings used to support the piers are similar in size to those proposed for the FEIS bridge piers.

2.1.3.2. Chemical Water Quality

Impacts to chemical water quality resulting from either of the Build Alternatives could include accidental spills or sediment releases during construction as well as increased or altered stormwater runoff characteristics during long-term operation of the bridge and approach roadways. However, surface water quality impacts are expected to be minimal from both Build Alternatives as designs incorporate stringent sediment and erosion control during construction, and stormwater treatments minimize permanent impacts from the impervious surfaces of the completed bridge and approaches. The treatments are designed to intercept pollutants from roadway runoff and prevent delivery to both the Anacostia River and groundwater entry points. The South Capitol Street Project provides an opportunity to meet and exceed regulatory requirements for stormwater runoff and further reduce pollutants entering the Anacostia River by use of appropriate and effective Best Management Practices (BMPs). Existing pavement scheduled for demolition outside the proposed roadway but inside the right-of-way is considered an opportunity for BMP

placement (DDOE 2013). Stormwater control systems for public space regulated by DDOT are mandated to utilize Low Impact Development (LID) technologies in the *Anacostia Waterfront Transportation Architecture Design Standards* (DDOT 2007b), or other measures approved by the Anacostia Waterfront Corporation (AWC) and DDOT. Since the project lies in the Anacostia Waterfront Development Zone, it will need to have additional stormwater management beyond those designated by the District and federal governments.

FEIS Preferred Alternative

The FEIS Preferred Alternative would decrease the impervious surface area from 76.0 acres to 74.5 acres. This would result in less stormwater runoff entering the Anacostia River. The FEIS Preferred Alternative would require that all stormwater entering storm sewers be treated to filter out debris and other pollutants before discharge into the Anacostia River. Because of the decrease in impervious surface area as a result of this alternative, stormwater from a 15-year storm event does not require retention before discharge into the Anacostia River (DDOT 2007b).

Stormwater treatment concepts examined for the FEIS Preferred Alternative are referenced in Section 3.1, Stormwater Filtering Systems, of the District of Columbia's *Stormwater Management Guidebook*. Seven treatment designs were identified and analyzed for the South Capitol Street Project. Inlet designs for the proposed treatments were based on sizing criteria for average rain events, 15-year storm events, and an extended detention basin. Types of treatments investigated include underground sand filters, bioretention filter boxes, catch basin inserts, two types of underground vaults, and combined sewer overflow systems. Specific stormwater treatments would be determined during final design.

Revised Preferred Alternative

The Revised Preferred Alternative would increase the impervious surface area from 67.3 to 68.0 acres. A variety of stormwater BMPs to meet pollution removal goals and reduce peak stormwater discharges from the Revised Preferred Alternative are presented in the *South Capitol Street Phase 1 Project/Task Order 6 Preliminary Stormwater Management Plan* (DDOT 2013). Phase 1 of this Project includes Segments 1 (Frederick Douglass Memorial Bridge and approaches) and 2 (I-295/Suitland Parkway interchange reconstruction).

Several structures will be constructed to capture, direct, and treat Project related and non-Project related stormwater, including catch basins, roadside ditches, and several types of BMPs. New catch basins are proposed along the Project roadways that will meet or exceed local and District of Columbia standards. All catch basins will connect with existing or proposed District of Columbia Water (DCW) storm sewer trunk lines via DCW manholes. Existing roadside ditches may be impacted by the construction of the new roadway. New roadside ditches will be constructed to direct offsite runoff to existing stormwater sewer systems. The three types of BMPs that are proposed for the Project are enhanced bioretention, dry swales, and permeable pavers. Also, buffer zones between the curb and the proposed sidewalk will be implemented upstream of each catch basin wherever possible so runoff will be captured and infiltrated before it is discharged into the catch basin. The Design-Builder is required to submit a Stormwater Management

Plan at key milestones. These plans will have more finalized stormwater management design depending on the final design of the roadway and bridge.

2.1.3.3. Groundwater

The impacts affecting Project Area surface waters directly relate to groundwater impacts as well. Groundwater impacts are generally described as alterations in quality and quantity. Impacts to groundwater quality relate to an increase in concentrations of undesirable or harmful substances introduced into groundwater. Impacts to groundwater quantity are associated with the reduction of groundwater. Groundwater is hydrologically connected to the Anacostia River in the vicinity of the Frederick Douglass Memorial Bridge and on the east side of the river where there are less impervious surfaces. The Anacostia River represents one of two major surface water bodies in the District of Columbia, and interactions between the river and groundwater are both induced and natural (University of District of Columbia [UDC] 1992). The induced interaction is through subsurface conduits, such as Stickfoot Branch and other underground drainage facilities.

The Build Alternatives are expected to have negligible effects on groundwater quality and quantity. Stormwater management designs for either Build Alternative will be implemented to prevent negative impacts to groundwater quality by intercepting pollutants from the roadway prior to their delivery to the Anacostia River or conveyance to a drainage swale. The stormwater BMPs are also designed to prevent impacts to groundwater quantity by utilizing more permeable design techniques, like permeable pavers, and by retaining runoff in catch basins that will potentially recharge into the groundwater after treatment.

2.1.4 Mitigation

Construction of either Build Alternative would be in accordance with all applicable state and federal regulations. Construction of the new Frederick Douglass Memorial Bridge, with either Build Alternative, will likely be permitted by a 404 Nationwide Permit (NWP) Number 15. The USACE and the DDOE typically require mitigation for waterway impacts on a project-specific basis. The agencies target compensatory stream mitigation projects to replace stream functions when feasible. In addition to stream channel improvements, mitigation measures for waterway impacts consider the size, stream order, and location of the stream to determine appropriate stream mitigation. Coordination will continue throughout the project, and all impacts will be mitigated in accordance with District of Columbia and federal regulations.

BMPs and currently acceptable design and construction procedures would be used to reduce or eliminate anticipated undesirable effects resulting from construction. Demolition of the old Frederick Douglass Memorial Bridge will likely be accomplished using non-blasting techniques to avoid impacts to the Anacostia River. Dredging is not currently proposed for construction or demolition for this project. Additionally, impact reduction techniques such as scare charges, physical barriers (e.g., cofferdams), and bubble curtains will be used to mitigate potential impacts to fish and other aquatic life from underwater blasting or pile driving, if they were to occur during construction of this project. Turbidity curtains may also be used around pier construction to provide a physical barrier around pile driving activities to contain suspended solids from leaving the construction site.

Erosion control and stormwater management is required during construction through the National Pollutant Discharge Elimination System (NPDES) permitting program. Adherence to District of Columbia and federal design criteria for the construction of roadways and bridges would eliminate the potential for long-term soil erosion due to the project.

Construction in contaminated areas would be subject to regulatory requirements of the DDOE. Dewatering activities near contaminated zones may result in the collection and discharge of contaminated groundwater. Where this occurs, treatment of the dewatering effluent may be necessary before discharge. In most cases, the contamination would likely consist of petroleum hydrocarbons, and treatment with an oil/water separator and carbon filtration system would reduce the petroleum concentrations sufficiently for discharge to the stormwater system. Dewatering treatment would be performed under a DDOE permit for the discharge of treated groundwater from oil-contaminated groundwater sources.

2.2 Wetlands

Wetlands are jointly defined by the USEPA, the USACE, and the District of Columbia as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions” (USEPA, 40 CFR 230.3, and USACE, 33 CFR 328.3, DC Law 5-188; D.C. Official Code §§ 8-103.04 and 8-103.20). In 2005, wetland areas were initially located using U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, the USGS maps for the Anacostia and Alexandria Quadrangles, and the US Department of Agriculture (USDA) *Soil Conservation Service Soil Survey of District of Columbia* (1976). The Project Area was subsequently delineated in 2005 and the results were included in the *South Capitol Street Natural Resources Technical Report* published in 2007 (DDOT 2007a). A new wetland delineation was performed in May and July2014 within portions of the Project Area that lie within the current limits of disturbance (LOD) for the Revised Preferred Alternative to verify originally delineated wetlands or any new wetlands not previously delineated.

Wetlands were identified in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region, Version 2.0* (USACE 2010). This approach is based on three parameters including hydrology, hydric soils, and hydrophytic vegetation. Soil color was identified using *Munsell Soil Color*

Charts (Munsell 1975). Hydric soil indicators were assessed using the *Field Indicators of Hydric Soils in the United States* (USDA 2010). The wetland indicator status of the observed vegetation was identified using the *National Wetland Plant List* (NWPL), *Version 2.0* (Lichvar 2012). The 2012 NWPL serves as an update to the previously used 1988 List; the reasons for the update and a thorough technical description of the various changes are detailed in *Concepts and Procedures for Updating the National Wetland Plant List* (USACE 2008). Wetland functions and values were evaluated in the field using best professional judgment. Wetland boundaries were marked in the field using pink wetland delineation survey ribbon and surveyed using a handheld Trimble global positioning system (GPS) unit.

A total of six wetlands were identified within the Project Area during the 2005 wetland delineation. The wetland cover types included four that were palustrine emergent (PEM); one that was palustrine forested (PFO); and one that was a combination of PFO, PEM, and palustrine scrub shrub (PSS). All of the wetlands were located within Anacostia Park on Poplar Point. Four of the wetlands were isolated and determined to be non-jurisdictional due to their lack of hydrologic connectivity to other streams and wetlands. Two wetlands were considered jurisdictional, as they drained through pipes to the Anacostia River. A copy of the original *Wetland Delineation Report* completed in 2005 can be found in the *South Capitol Street Natural Resources Technical Report* (DDOT 2007a).

Three additional wetlands were identified within the Project Area during the 2014 wetland delineation. One area, originally designated as a surface water (listed as “unnamed tributary”) in 2005, was changed to a PFO wetland (Figure 5). This 0.04-acre PFO wetland consists of a narrow drainage swale located between I-295 and Golden Raintree Drive, just south of Firth Sterling Avenue SE. The swale receives hydrology primarily from surface water, including drainage from I-295 and Golden Raintree Drive. Other hydrologic indicators observed included a high water table, sediment deposits, drainage patterns, and the presence of reduced iron. Wetland vegetation was dominated by hydrophytic plants, including green ash (*Fraxinus pennsylvanica*) and ash-leaf maple (*Acer negundo*). Soils were significantly disturbed due to the recent construction of the adjacent National Coast Guard facility, and consisted mostly of deposited sand and silt. However, a depleted matrix (Indicator F3) was observed under the deposition, indicating that hydric soils are present. The presence of reducing conditions was also confirmed using the alpha alpha-dipyridyl test, which also supports the presence of hydric soils.

Two additional wetland areas and one stream were also delineated between Dunbar Road and Suitland Parkway. Both wetlands lie adjacent to the above ground section of Stickfoot Branch discussed in Section 2.1.3.1.

The northern area consists of a 0.07-acre PEM wetland swale that originates from a reinforced concrete pipe under Dunbar Road. Wetland hydrology in this swale includes surface water from stormwater runoff and groundwater input from the adjacent hillslope. Hydrology indicators observed during the fieldwork include surface water, a high water table, saturation, sediment deposits, and drainage patterns. Wetland vegetation was dominated by rice cutgrass (*Leersia oryzoides*) and broadleaf cattail (*Typha latifolia*). Hydric soil indicators consisted of a depleted matrix (Indicator F3), which was observed in the upper 12 inches of the soil surface.

The southern area consists of a 0.08-acre PEM wetland swale near the southern boundary of the project area. Both soil and hydrology in this area appear to be significantly disturbed due to the recent construction of a Washington Metropolitan Area Transit Authority maintenance access area and adjacent water line. The hydrology in the wetland appears to originate from a broken water line, causing water to flow across the easement and downslope to Suitland Parkway. Due to recent grading and placement of rip-rap in the swale, the soils in this wetland are significantly disturbed. However, one centimeter of muck (Indicator A9) and the presence of reduced iron were observed, indicating that hydric soils are present in this wetland. Hydrophytic vegetation consisted of common fox sedge (*Carex vulpinoidea*), lamp rush (*Juncus effusus*), unknown goldenrod (*Solidago* sp.), and narrow-leaf cattail (*T. angustifolia*), Japanese honeysuckle (*Lonicera japonica*), and porcelainberry (*Ampelopsis brevipedunculata*).

Completed Routine Wetland Delineation Data Forms for the additional areas delineated in 2014 are included in **Appendix A**.

In April 2005, representatives from the USACE, NPS, DDOE, and DDOT conducted field verifications of the wetlands and waterways identified and their boundaries. A letter from the USACE, dated July 1, 2005, provided an official "Jurisdictional Determination" of all wetlands and waterways regulated by the USACE.

Agency correspondence is located in the *South Capitol Street Natural Resources Technical Report* (DDOT 2007a). An additional Jurisdictional Determination will be completed with the USACE and DDOE for the wetlands identified during the 2014 delineation.

2.2.1 Environmental Consequences

All transportation projects affecting wetlands are required to maintain the natural functions of wetlands, or provide appropriate mitigation or compensation. Where impacts are unavoidable, impacts must be minimized to the extent practicable and an evaluation of alternatives that have been considered to avoid or minimize the impacts must be prepared. Avoidance of wetland impacts is the preferred approach recommended by resource and regulatory agencies. A total of nine wetlands were identified within the Project Area. Most wetlands were located in the southeastern portion of the Project Area within Anacostia Park on Poplar Point and west of Suitland Parkway. The only other wetland was located adjacent to I-295 in the southern portion of the Project Area.

Figure 5: Delineated Wetlands and Streams within the Project Area

2.2.1.1. FEIS Preferred Alternative

All wetlands are located outside of the Project LOD for the FEIS Preferred Alternative. Construction of the FEIS Preferred Alternative would not impact wetlands within the Project Area.

2.2.1.2. Revised Preferred Alternative

Of the nine delineated wetlands, six are located are located outside of the Revised Preferred Alternative LOD, and would not be impacted by the Project. Although the two newly delineated wetlands along Suitland Parkway are present within the Project Area, the limits of disturbance were drawn using entire parcel boundaries to give the Design-Build team sufficient area to accommodate access and staging for the project. However, only portions of the parcels will be disturbed and the wetlands will be fenced off for protection so they are not impacted.

In addition, the newly identified wetland adjacent to I-295 currently falls within the Revised Preferred Alternative LOD, and would result in a permanent impact of 0.04 acre of PFO wetland. The current design includes replacement of the I-295 Bridge over Firth Sterling Avenue SE and the adjacent abandoned railroad right-of-way, which will be replaced by earthen fill. This work could result in at least a partial filling of this wetland. If the impact were to occur, it would be addressed in the same permit with the bridge, likely qualifying under USACE Nationwide Permit 14 for linear projects. Impact avoidance and minimization efforts will be explored during the further design of the project, and a final wetland impact assessment will be conducted at that time.

2.2.1.3. Mitigation

No wetland impacts were anticipated from completion of the FEIS Preferred Alternative. The LOD as currently depicted for the Revised Preferred Alternative would result in an impact of 0.04 acre of PFO wetland. As noted above, this impact may be avoided during the design of the project. If not, any required mitigation will be addressed at that time. Wildlife and Habitats

2.2.2 Aquatic Ecology

2.2.2.1. Submerged Aquatic Vegetation

Submerged aquatic vegetation (SAV) is defined as vascular plants that remain below the water surface during the growing season. The distribution, abundance, and species composition of submerged aquatic vegetation depends on several variables including salinity, water quality, water temperature, and water depth. Submerged aquatic vegetation provides important ecological functions, including the following:

- generating food and habitat for waterfowl, fish, shellfish, and invertebrates
- adding oxygen to the water column during photosynthesis
- filtering and retaining sediments
- absorbing excess nutrients (which they require for growth), such as nitrogen and phosphorus that may cause the growth of unwanted algae in surrounding waters

Activities affecting the removal or eradication of submerged aquatic vegetation are regulated by the USACE pursuant to Section 404 of the CWA, as amended, and Section 10 of the Rivers and Harbors Act of 1899. These areas are also regulated by the District of Columbia as promulgated under the Water Pollution Control Act of 1984 (D.C. Law 5-188, D.C. Code §6-923).

The Virginia Institute of Marine Sciences (VIMS), in coordination with the National Oceanic and Atmospheric Administration (NOAA), Virginia Department of Environmental Quality (VADEQ), Maryland Department of Natural Resources (MDNR), and the Virginia Coastal Zone Management Program (VCZMP), documents the presence of SAV within the Chesapeake Bay Watershed on a yearly basis (mid-1990s to present). Aerial photography is used to document SAV bed locations, size, and species present. These data are then used to develop trends, identify areas of decline and abundance, and implement preservation strategies. Historical SAV mapping, from 1994 to present, was reviewed to determine the extent of SAV beds within the Anacostia River and immediate vicinity of the Frederick Douglass Memorial Bridge. According to results presented by VIMS on their SAV web site (http://www.vims.edu/bio/sav), no SAV beds were observed within the tidal portion of the Anacostia River.

The Fisheries and Wildlife Division of the DDOE conducts an annual shoreline survey to monitor the extent and health of SAV populations through the Potomac and Anacostia River. Surveys are conducted from a slow moving boat driven along the shorelines, and SAV are documented by visual observation and rake sampling. All of the shoreline areas of the Anacostia River that are contained within the District of Columbia were surveyed for SAV. The results of this effort indicated that no SAV was observed in the Anacostia River in 2012 (DDOE 2012). DDOE reports that no observable SAV has been present in the Anacostia River since 2002 (Daniel Ryan personal communication August 27, 2013).

2.2.2.2. Benthic Macroinvertebrates

Benthic macroinvertebrates are small organisms that lack backbones living on, or in, the bottom sediments of streams and rivers. Benthic macroinvertebrates include crayfish, clams, snails, aquatic worms, and the immature forms of aquatic insects, such as stonefly and mayfly nymphs. Macroinvertebrate communities are indicators of localized water quality conditions, because many have limited migration patterns and include species that have a broad range of pollution tolerances. Site-specific impacts and cumulative effects on surface water quality can be assessed through the changes in composition and structure of the macroinvertebrate community. Due to the poor water quality conditions of the lower Anacostia River, benthic life is severely diminished. The clams and mussels found within the nearby Potomac River are missing in the Anacostia River due to sediment toxicity and contaminants transported in from the Anacostia tributaries (USEPA 1997).

Limited existing benthic macroinvertebrate sampling data were obtained from the USEPA and private research companies. Six sampling stations within the lower Anacostia River were used in 1988 to characterize the biological integrity of tidal systems in the District of Columbia. The benthic macroinvertebrate communities in the Anacostia River were categorized as severely degraded and rated as poor using the Hilsenhoff Biotic Index (HBI). The index evaluates pollution tolerance, as it relates to organic pollution, and increases with degradation. The samples were dominated by pollution-tolerant organisms

that include oligochaetes (worms) and chironomid larvae (e.g., midge, gnat) (USEPA 1997).

Sampling of benthic macroinvertebrates occurred in June 2003 north of the Frederick Douglass Memorial Bridge along the western bank, approximately between the US Capitol Pump House (near 1st Street SE) and the Washington Navy Yard (near 2nd Street SE) (Reible et al. 2003). The benthic community data were evaluated using the Shannon-Wiener diversity index. The Shannon-Wiener diversity index, which ranges from 0 to 4, reflects the diversity or complexity of a community, with an index of 4 representing a high community complexity. All of the samples had an average score of 2.4 for the Shannon-Wiener diversity index, representing a lower quality community complex (Reible et al. 2003). This study was repeated in 2005 (Reible et al. 2006). Benthic macroinvertebrate composition was similar between years, but other measures of community health described a more degraded condition in 2005. The number of taxonomic groups, mean benthic macroinvertebrate density, and average Shannon-Wiener diversity index (0.9) were lower in 2005.

2.2.2.3. Fish

The health of fish populations and the types of fish species residing in the stream are used to draw conclusions about the overall health of a stream. The Anacostia River has generally shown less diversity in its fish population in comparison to the Potomac River. However, the current condition of fish resources is improving for several game fish species that include largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), striped bass (*Morone saxatilis*), black crappie (*Pomoxis nigromaculatus*), and yellow perch (*Perca flavescens*). Approximately 45 species of fish representing 15 families and 30 genera were collected in 1990 from tidewater sites of the District of Columbia. Fish with various life stages and spawning requirements, including anadromous, catadromous, estuarine, and tidal fresh water taxa, were collected during these studies. Anadromous fish swim from the ocean into freshwater to spawn. When the young hatch, they migrate back to the ocean to grow and mature. Catadromous fish such as the American eel (*Anguilla rostrata*), migrate from freshwater into the ocean to spawn and reproduce. Redfin pickerel (*Esox americanus*) and hickory shad (*Alosa mediocris*) were collected during these surveys, while white perch (*Morone americana*) and young of the year (YOY) blueback herring (*Alosa aestivalis*) were most abundant. The occurrence of abnormalities (primarily lesions, deformities, and emaciation) was low at 0.7 percent for the Anacostia River. A 1994 fish survey by the Department of Consumer and Regulatory Affairs (DCRA) reported similar results, with a diversity that included 47 species, 13 families, and 30 genera (USEPA 1997).

According to the National Marine Fisheries Service (NMFS), the lower Anacostia River is a documented spawning ground and migratory corridor for several species of anadromous fish, including alewife (*Alosa pseudoharengus*), blueback herring, hickory shad, and white perch. These species are annually present in the lower Anacostia River during the period of early March to mid-June. These species have certain water quality and habitat requirements related to temperature and pH, as well as sediment composition and water flow, to maintain effective spawning. Anadromous fish will return to the same location each year to spawn, which makes accessibility to these habitats a key component in their reproduction within the lower Anacostia River. Sampling conducted by the DDOE Fisheries and Wildlife Division in 2000 and 2002, collected a dominance of anadromous species that included alewife, blueback herring, and white perch. Other dominant species

collected during this project include gizzard shad (*Dorosoma cepedianum*), spottail shiner (*Notropis hudsonius*), pumpkinseed (*Lepomis gibbosus*), and banded killifish (*Fundulus diaphanus*) (DDOE 2000).

Between 2008 and 2012, the dominant fish species collected by DDOE in the vicinity of the Frederick Douglass Memorial Bridge were blueback herring, gizzard shad, white perch, and bluegill (*Lepomis macrochirus*). Of the four anadromous fish species collected in 2000 and 2002, all were present between 2008 and 2012, except hickory shad, which was only collected in 2008, 2009, and 2010 (one individual). In 2010, the northern snakehead (*Channa argus*), a highly invasive fish species native to China, was first collected in the Project Area by the DDOE. In every subsequent year, the number of snakeheads collected by the DDOE doubled, with the length and weight of the largest individuals increasing each year. Northern snakeheads are an environmental concern because they are effective predators of fish, crustaceans, and amphibians. They may be able to outcompete native top predators and popular gamefish, and alter native fish populations and food webs (MDNR 2013).

Although gamefish species are rebounding in the Anacostia River, several species that were historically abundant in the Anacostia River now occur in lower numbers. These species include white perch, river herring, American shad (*Alosa sapidissima*), American eel, pumpkinseed, and channel catfish (*Ictalurus punctatus*) (DCRA 1996). However, all of these species were collected in the Project Area between 2008 and 2012. The numbers of alewife and blueback herring are very low compared to the one million pounds per year caught before 1975. Overall size of these species, particularly white perch, pumpkinseed, and yellow perch, has decreased, which may be a result of the absence of abundant predators to reduce competition among young life stages of fish. The present species diversity and abundance also represent a decline from historic levels, which is apparent in many taxa known to be sensitive to environmental degradation (Kazyak et al. 1990; LDCRA 1995).

Project coordination with the NMFS during preparation of the DEIS in 2006 indicated the potential occurrence of shortnose sturgeon (*Acipenser brevirostrum*) within the waters of the Anacostia River near the proposed bridge replacement project. The shortnose sturgeon is federally listed as endangered and recent surveys at that time, conducted by the USFWS, had documented the presence of shortnose sturgeon in the nearby Potomac River. A Biological Assessment (BA), addressing potential project impacts to shortnose sturgeon, was prepared by the FHWA during the fall of 2006. In a letter dated February 20, 2007, the NMFS concurred with the findings of the BA that the presence of shortnose sturgeon within the Anacostia River is unlikely and that any impacts to shortnose sturgeon from any activity associated with the project would be discountable.

On April 6, 2012, the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) was formally listed by the USFWS as a federally-endangered species. FHWA and the DDOT prepared a BA for the Atlantic sturgeon in the spring of 2014, as recommended by NMFS (Christine Vaccaro personal correspondence on August 16, 2013). The new BA detailed the Revised Preferred Alternative and included information pertaining to the status of the Atlantic sturgeon within the Project Area. See section 2.4, Threatened and Endangered Species, for further discussion on the shortnose sturgeon and Atlantic sturgeon.

2.2.3 Terrestrial Ecology

2.2.3.1. Vegetation

Due to the urban nature of the Project Area, vegetation and wildlife are limited in diversity. A majority of the Project Area is paved as part of the urban street grid, with few landscaped areas. There are substantial areas of maintained grass on the Navy Yard and the Anacostia Park properties. Large areas of more naturalized vegetation, including trees, occur on the St. Elizabeths property and the Poplar Point portion of the Anacostia Park. The Chesapeake Bay watershed is part of the Atlantic Flyway migration route for Neotropical and intracontinental migrants. As part of the watershed, the Anacostia River provides breeding and stopover habitat for a variety of migrants moving north and south during the respective seasons.

Vegetative communities and wildlife within the Project Area were assessed in detail during field reconnaissance in November and December 2004. Vegetative communities were identified and mapped according to the Anderson Land Use Classification System (Anderson et al. 1976). Cover types were identified to level II, except for wetlands, which are discussed in greater detail in Section 2.2. Lists of all flora and fauna observed during field investigations are provided in Appendix B of the *South Capitol Street Natural Resources Technical Report* (DDOT 2007a). Vegetative communities and Specimen/Special Trees were reevaluated in the field during fall 2013 to verify previously identified trees and add any new trees that had become Specimen/Special Trees since the 2004 fieldwork.

Specimen/Special Trees

As part of the Urban Forest Preservation Act of 2001, the DDOT Urban Forestry Administration reviews all projects that require a permit to alter, build, construct, or demolish. The Urban Forestry Administration requires a permit for the disturbance of any tree within a project with a circumference of 55 inches or greater. These specimen trees are referred to as “Special Trees.” Impacts to a Specimen/Special Tree by an individual or non-governmental organization must be permitted and mitigated prior to disturbance. During preparation of the 2007 NRTR, all trees having a diameter measured at 4.5 feet above the ground of 30 inches or more in diameter were identified and surveyed within Anacostia Park on Poplar Point. This effort was done to facilitate the review process, as well as provide data to the District of Columbia’s tree inventory in support of the legislation. This survey was conducted to supplement the existing data for Special Trees identified and located within the District of Columbia by Casey Trees, a non-profit organization whose mission is to restore, enhance, and protect the tree canopy of the nation’s capital. A total of 64 Specimen/Special Trees were identified within the Project Area during the 2007 NRTR. The 64 trees consisted of 34 American elms (*Ulmus Americana*); 16 willow oaks (*Quercus phellos*); four silver maples (*Acer saccharinum*); two ginkgos (*Ginkgo biloba*); two pin oaks (*Quercus palustris*); and one each of catalpa (*Catalpa speciosa*), American sycamore (*Platanus occidentalis*), weeping willow (*Salix* sp.), and an unknown species.

Specimen/Special Trees were reevaluated within and immediately adjacent to the proposed LOD for the Revised Preferred Alternative by viewing the Casey Trees D.C. Street Trees Map (accessed online at http://caseytrees.org/resources/maps/dc-street-trees/). Surveys were also conducted in October and November of 2013 to augment the

data obtained from the D.C. Street Trees Map. The revised tree survey updated the original survey conducted during the 2007 NRTR. Figure 5 shows the locations of the 97 Specimen/Special Trees identified within the Project Area. The additional trees identified since the 2007 NETR included American elms, willow oaks, red maples (*Acer rubrum*), silver maples, American sycamores, and pin oaks.

Residential Related Vegetation

Much of the vegetation associated with residential land use is limited to lawns and streetscapes. The largest area of residential land use is located on the east side of the Anacostia River, south of I-295. The second area lies west of the Anacostia River between Independence Avenue and the Southeast-Southwest (SE-SW) Freeway. The third area, located on the east side of the Anacostia River and Firth Sterling Avenue east of I-295, borders a small section of deciduous forest but the vegetation is still limited to lawns and street trees. Many of the street trees and landscaped areas are comprised of non-native ornamental species. Maples (*Acer* spp.) comprise approximately 38 percent of all street trees, followed by oaks (31 percent) and elms (10 percent) in the District of Columbia (Casey Trees Endowment Fund 2005). These percentages are also representative of the street tree community within the Project Area.

Commercial Related Vegetation

Commercial land use is concentrated west of I-295 in the northern portion of the Project Area. A majority of the surfaces in this part of the Project Area are paved parking lots for the numerous office buildings and restaurants. The vegetation is limited to street trees and landscaped areas.

Industrial Related Vegetation

Many of the properties within the Project Area are classified as industrial. These areas include the portion of the Project Area west of the Anacostia River, which are located south of Q Street SW on the west side of South Capitol Street and on the east side of South Capitol Street between the Anacostia River and the SE-SW Freeway. The Anacostia Naval station located south of the Frederick Douglass Memorial Bridge also falls into this category. The industrial areas have substantial areas of maintained grass with few trees.

Figure 6: Locations of Specimen Trees within the Project Area

Transportation, Communications, and Utilities

The transportation, communication, and utilities landcover includes the roadways, railways, and the Metro station in the Project Area. The major highways and secondary roadways do not have forested right-of-ways or buffers associated with them, with the exception of Suitland Parkway, but do have a number of street trees and landscaped medians. These small tree lined strips are often very disturbed and are dominated by invasive species, such as rambler rose (*Rosa multiflora*) and Asiatic tearthumb (*Persicaria perfoliata*) and vines, such as horsebrier (*Smilax rotundifolia*) and poison ivy (*Toxicodendron radicans*). Suitland Parkway is characterized by a fringe of trees along the right of way between Suitland Parkway and Howard Road. A thin wooded buffer is located along the south side of Suitland Parkway between Firth Sterling Avenue and Martin Luther King, Jr. Avenue. Vegetation in these areas are characterized as scrub-shrub with a variety of trees including maples, oaks (*Quercus* spp.), and other common hardwoods. The abandoned CSX railway right of way along Firth Sterling Avenue and the Anacostia Metro station are both located on the east side of the Anacostia River adjacent to I-295, and have no vegetation other then maintained grass and a few street trees.

Other Urban or Park Lands

Other urban lands include all urban park areas, such as Anacostia Park and Garfield Park, and recreational baseball fields distributed through the residential areas. The dominant vegetation in these areas is comprised of maintained lawns.

Within the Project Area, Anacostia Park is approximately 100 acres in size but contains several other land class divisions including forest and wetlands. This portion of Anacostia Park is specifically called Poplar Point and was established on a fill area that has characteristically been devoid of trees and includes many exotic species (USEPA 1997). Currently Poplar Point contains primarily early-successional vegetation with a mix of young trees, meadows, and wetland areas. The trees located in the park and concentrated along the Anacostia River include black willow (*Salix nigra*), green ash (*Fraxinus pennsylvanica*), and American elm (*Ulmus Americana*). The vegetation found in Poplar Point includes some uncommon species such as Engleman's spikerush (*Eleocharis engelmanii*) which is state-listed in Maryland and the only known District of Columbia location, and fiveangled dodder (*Cuscuta pentagona*). Correspondence from National Park Service indicated that other non-federally listed rare species include field dodder (*Cuscuta campestris*), (now lumped into the fiveangled dodder), honeyvine (*Cynanchum leave*), pale dock (*Rumex altissumus*), Virginia winged rockcress (*Sibara virginica*), and halberdleaf rosemallow (*Hibiscus laevis*).

Garfield Park is bounded by the Southeast/Southwest Freeway, Virginia Avenue, New Jersey Avenue, F Street, South Carolina Avenue, and 3rd Street. The park facilities support a number of recreational uses, including racket and field sports, as well as providing a state of the art playground. The park contains a variety of tree species including swamp white oak (*Quercus bicolor*), pin oak (*Q. palustris*), red oak (*Q. rubrum*), American elm, slippery elm (*Ulmus rubra*), English elm (*Ulmus procera*), hackberry (*Celtis* spp.), magnolia (*Magnolia* spp.), pines (*Pinus* spp.), English holly (I*lex aquifolium*), cherry plum (*Prunus cerasifera*), sweetgum (*Liquidambar styraciflua*), red cedar (*Juniperus virginiana*), horse chestnut (*Aesculus hippocastanum*), maple, and American sycamore.

Forested and Non-forested Wetlands

There are two forested wetlands located in Anacostia Park (Poplar Point) in the area west of the abandoned greenhouses. The dominant vegetation in these areas include American sycamore, black willow, eastern cottonwood (*Populus deltoids*), and pin oak. Approximately 0.57 acre of non-forested emergent and shrub-scrub wetlands are also located in Anacostia Park.

Deciduous Forest

A forest, as defined by the Maryland Department of Natural Resources, must be at least 10,000 square feet in area and contain at least 100 trees with a diameter at breast height of at least two inches. Within the Project Area, there are only two such areas meeting that definition; one north of the intersection of I-295 and Suitland Parkway and the other on the Anacostia Park property on Poplar Point. Both of these areas are significantly disturbed and are comprised of younger aged trees. Smaller areas of upland deciduous vegetation forming woodlots or narrow tree lines are located elsewhere within the Project Area, including west of the Anacostia River near the intersection of the SE-SW Freeway and New Jersey Avenue SE and along many of the main highways east of the Anacostia River. Given the intensive urbanization of the city there is little space available for these smaller woodlots to increase in size. The St. Elizabeths Hospital property adjacent to I-295 contains the largest tract of mid-successional forest. The forest provides the least-disturbed wildlife habitat in the Project Area, although invasive species are also present throughout this forested area including rambler rose and Asiatic tearthumb.

2.2.3.2. Wildlife

The Anacostia River provides an important wildlife corridor linking less developed areas along the Potomac River with habitat in the upper areas of the Anacostia watershed. Based on the habitats available, the wildlife inhabiting the Project Area are species adapted to human disturbance and urbanized conditions. These species include raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), and gray squirrel (*Sciurus carolinensis*), as well as various mice and rats (family Muridea). A few less tolerant species have also been documented in the less-developed portions of the project.

The NPS has documented numerous species of plants and animals known to occur within the Anacostia Park property (http://www.nps.gov/archive/nace/poplar-point-species.pdf). A complete list of flora and fauna encountered during field investigations are provided in the 2007 NRTR (DDOT 2007a). No new wildlife species were documented during follow up fieldwork in fall 2013 and spring 2014.

Migratory Birds

The Chesapeake Bay Watershed includes the Potomac River and Anacostia River, and provides an important migratory pathway for migrating birds. Neotropical migrants (birds that spend winters in Central America and South America but nest in North America) are provided protection under the Migratory Bird Treaty Act. This act defines prohibitions and outlines permit requirements.

The Maryland/District of Columbia Records Committee of the Maryland Ornithological Society lists 326 different species of birds that have been documented within the District of Columbia since 1842 (see Appendix B: Maryland Ornithological Society 2007). Many species of Neotropical migrants have been observed along the banks of the Anacostia

River and within Anacostia Park and Poplar Point. These are listed in Appendix B of the 2007 NRTR (DDOT 2007a). Species such as the willow flycatcher (*Empidonax traillii)* is one such species that has been documented breeding within Poplar Point and is known to inhabit only one other location in the District of Columbia. According to NPS personnel, in 2013 there were four pairs of osprey (*Pandion haliaetus*) nesting on or near the Frederick Douglass Memorial Bridge and several others that nested on light boxes along Anacostia Drive. Also, there was an attempted breeding on the Frederick Douglass Memorial Bridge by a pair of peregrine falcons (*Falco peregrinus*) in 2013.

2.2.4 Environmental Consequences

Impacts to fish and wildlife are generally related to terrestrial habitat, such as modification of habitat, and physical and chemical influences that could result in a change in community structure and composition. Other effects could include a minor shift in the wildlife community. The DDOE Fisheries and Wildlife Division identified the major threats to the species of greatest Conservation needs and their habitats in the *District of Columbia Wildlife Action Plan* (DDOE 2006). The primary threats to terrestrial habitats are invasive and alien species, recreation, fragmentation, dumping, and contaminants. The primary threats to aquatic habitats are invasive and alien species, sedimentation, changes to hydrologic regimes, stormwater erosion, and pollution. Impacts to aquatic habitats, such as the Anacostia River wetlands and the Anacostia River, are discussed in Sections 2.2 and 2.1. The only threats to aquatic biota that have the potential to be affected by the project are sedimentation, changes to hydrologic regime, and stormwater erosion. According to the *Anacostia River Hydraulic Analysis and Bridge Scour Evaluation for the Replacement of the Frederick Douglass Memorial Bridge*, CH2M HILL 2013, the new bridge will have no significant adverse impacts on the backwater computations of the Anacostia River. Additionally, since all projected bridge piers of the Revised Preferred Alternative will be placed normal to the flow of the Anacostia River, it will allow maximum conveyance. Sedimentation and stormwater erosion will be mitigated by stormwater runoff treatments and BMPs. Since the project aims to convert existing pavement outside the proposed roadway but within the project right-of-way to BMPs, wherever possible, there may be a reduction in erosive stormwater flows and potentially contaminated runoff and sedimentation.

As part of the Urban Forest Preservation Act of 2001, the DDOT Urban Forestry Administration reviews and inspects every tree affected by a potential project requiring a permit to alter, build, construct, or demolish.

2.2.4.1. No Build Alternative

The No Build Alternative would not affect fish, wildlife, or habitat.

2.2.4.2. FEIS Preferred Alternative

As described in the 2011 FEIS (DDOT 2011), impacts to fish and wildlife within the limits of disturbance of the FEIS Preferred Alternative would be minimal due to the existing level of human disturbance and urbanized conditions of the Project Area. The FEIS Preferred Alternative generally involves the addition of pavement for widened or extended roadways immediately to the outside of the existing roadway and/or on existing roadway right-of-way. The majority of these effects would be to maintained grassy strips or narrow rows of

street trees. These features, particularly the street trees, provide limited terrestrial habitat in the urban setting, though do provide some air quality and aesthetic benefits. Additionally, the FEIS Preferred Alternative would include removal of some existing paved surfaces, including existing interchange ramps and bridge approach roadways. These areas would potentially offer the ability to restore terrestrial habitat.

Based on the data compiled for the *South Capitol Street Natural Resources Technical Report* (DDOT 2007a), the FEIS Preferred Alternative would impact approximately 0.1 acre of wooded areas, primarily in the southeastern part of the Project Area between Howard Road SE and Suitland Parkway. These trees are located along the edge of existing right of way in several wooded areas between Howard Road and Suitland Parkway, the largest wooded area being less than 0.75 acre. These wooded areas are currently located in highly urbanized and disturbed areas; therefore, the loss of these trees would not reduce the current quality of the habitat.

Stormwater management design features associated with the FEIS Preferred Alternative may provide a benefit to certain terrestrial species of amphibians and birds. Stormwater management designs intended to detain roadway runoff may retain water during spring and early summer and act as breeding sites for various species of frogs and toads. Areas that are permitted to become vegetated with cattail, sedges, and rushes may also provide habitat for migrating and breeding birds.

A total of three live specimen trees located along the east side of South Capitol Street, north of M Street would be impacted These three trees are willow oaks measuring 30 inches in diameter at breast height (dbh). Additionally, a lone dead standing silver maple measuring 37 inches dbh is located at the southeast corner of South Capitol Street and N Street. Two specimen trees are located within the limits of disturbance for the FEIS Preferred Alternative along New Jersey Avenue SE but would not be impacted by the project. Two American elms (46 and 36 inches dbh), located between 1st Street and L Street, also would not be impacted. All of these potential impacts are to trees assessed and measured during the 2004 survey.

Impacts to migratory birds are expected to be negligible, with exception to the annually occupied osprey nests located on breakwater piers of the existing Frederick Douglass Memorial Bridge. Any nests will be removed during the non-nesting season, once the new Frederick Douglass Memorial Bridge is completed and demolition of the old bridge begins. Impacts to migratory birds would result from the clearing or demolishing of nesting habitat during the nesting season when eggs and young are present.

2.2.4.3. Revised Preferred Alternative

Differences between the FEIS Preferred Alternative and the Revised Preferred Alternative are minimal with respect to potential impacts to terrestrial and aquatic habitat and wildlife. As noted for the FEIS Preferred Alternative, most impacts would be the result of widening or extending existing roadways, and these impacts would be mostly to disturbed forested or shrubby habitat or managed lawns.

Impacts to aquatic biota, primarily fish, would be expected to be minimal, as the project proposes to use specific conservation measures during construction of the new bridge. During bridge construction, time of year restrictions will be in place between February 15 and July 1 to protect anadromous fish and to minimize the potential impact to shortnose and Atlantic sturgeon (See Section 2.4). Further protective measures, such as

cofferdams, will also be used during bridge pier construction to contain disturbed sediments, as well as to reduce sound and shock waves to further minimize impacts to fish.

Based on the current limits of disturbance for the Revised Preferred Alternative, forest impacts would total 2.1 acres. These impacts would primarily occur within Anacostia Park. Smaller woodlot and tree line impacts would also occur to the area along New Jersey Avenue just east of the Southeast/Southwest Freeway and adjacent to major highways east of the Anacostia River. Forest impacts for the Revised Preferred Alternative would be only slightly greater than for the FEIS Preferred Alternative. However, the difference likely will not be significant once the design of the Revised Preferred Alternative has been refined to show actual cut/fill limits for proposed grading, as the impacts are all associated with minor roadway widening/improvements. These impacts are not expected to result in a significant decline in wildlife, as the impacted resources are already disturbed and support primarily transient species of birds and smaller mammals.

Specimen/Special Tree impacts would potentially be greater for the Revised Preferred Alternative than that described for the FEIS Preferred Alternative. The greater number of Specimen/Special Tree impacts results from an increase in the number of identified trees since 2007 and because of the larger limits of disturbance described in the previous paragraph. New Specimen/Special Tree impacts would occur along South Capitol Street and adjacent side streets west of the Anacostia River (24 trees), New Jersey Avenue (five trees), on Anacostia Drive SE where it loops onto westbound South Capitol Street at the bridge (one tree), north of Howard Road SE west of I-295 (one tree), along Martin Luther King Jr. Avenue SE north of Summer Road SE (one tree), and along Suitland Parkway east of Martin Luther King Jr. Avenue SE (ten trees), totaling 42 trees.

Impacts to migratory birds are anticipated to be negligible for the Revised Preferred Alternative similarly to what was described for the FEIS Preferred Alternative. However, impacts to migratory birds could occur if clearing of vegetation during the breeding season disrupts nesting. Impacts would also occur during demolition of the old Frederick Douglass Memorial Bridge if the osprey or peregrine falcons return to the bridge to nest. While peregrine falcons are no longer a federally listed species, the USFWS continues to monitor their populations. Also, both species are protected by the Migratory Bird Treaty Act.

2.2.4.4. Mitigation

Continued coordination with DDOT's Urban Forestry Administration would ensure avoidance and minimization of Specimen/Special Tree impacts resulting from the Build Alternatives. Unavoidable impacts to trees designated as a Specimen/Special Tree will not require a permit, because only individuals or non-governmental entities are required to obtain permits and to comply with compensation measures. However, the project proposes to plant trees as part of the project landscaping design, and these trees will have the potential to become Specimen/Special Trees in the future. Trees and shrub species, which provide wildlife habitat, would be included in the project's landscape plan.

Under the Migratory Bird Treaty Act, removal of an existing osprey or peregrine falcon nest from the Frederick Douglass Memorial Bridge before demolition would require a permit from the USFWS. Coordination with the USFWS during the permit application

process will likely include identifying an alternative nest platform for the osprey. Placement of a nest box onto the new Frederick Douglass Memorial Bridge for use by peregrine falcons could also mitigate for the lost breeding opportunities on the old bridge. This method was used successfully on the replacement Woodrow Wilson Bridge over the Potomac River.

BMPs and currently acceptable design and construction procedures would be used to reduce or eliminate anticipated undesirable effects resulting from construction. Construction activities would be planned to minimize unnecessary disturbance to wildlife habitat. Habitat could be removed during months when migratory birds are not nesting. Erosion control and stormwater management would also be implemented during construction to further minimize disturbance to adjacent terrestrial and aquatic habitat areas. Demolition of the old Frederick Douglass Memorial Bridge will likely be accomplished using non-blasting techniques to avoid impacts to Anacostia River aquatic biota. Dredging is not currently proposed for construction or demolition for this project. Additionally, impact reduction techniques such as scare charges, physical barriers (e.g., cofferdams), and bubble curtains will be used to mitigate potential impacts from underwater blasting or pile driving, if they were to occur during construction of this project. Turbidity curtains may also be used around pier construction to provide a physical barrier around pile driving activities to contain suspended solids from leaving the construction site.

2.3 Threatened and Endangered Species

Threatened and endangered species are regulated at the federal level by the Endangered Species Act of 1973, as amended. The Endangered Species Act was established to help in the preservation and recovery of listed species. The law is administered by the USFWS and the NMFS. The USFWS is responsible for terrestrial and freshwater species, while the NMFS is responsible for marine and anadromous species.

At the local level, the NPS Center for Urban Ecology, in support of the Endangered Species Act, has created the Threatened and Endangered Species Program. Those species considered rare in the District of Columbia are the same species that are federally listed by the NMFS and USFWS as being threatened or endangered. This program participates in conservation efforts for these species through research, reintroduction, species monitoring, and invasive plant management. This program also assists parks with compliance under the Endangered Species Act and cooperates with the USFWS and NMFS.

2.3.1 Agency Coordination

Between June 2005 and February 2007, DDOT coordinated with both the USFWS and NMFS to ensure the South Capitol Street project did not jeopardize the existence of any federally threatened or endangered species. Early coordination with the NMFS focused on planning for a new Frederick Douglass Memorial Bridge crossing of the Anacostia River. A letter dated July 7, 2005 from the NMFS indicated that their primary concern pertained to the replacement of the Frederick Douglass Memorial Bridge (DDOT 2007). This correspondence outlined a variety of issues regarding anadromous fishes for their avoidance or minimization of construction impacts such as sedimentation, heavy underwater shockwaves, erosion, waterway blockage, and habitat modification.

Additionally, the NMFS determined that the endangered shortnose sturgeon (*Acipenser brevirostrum*) is present in the upper tidal Potomac River, and could potentially occur in the lower Anacostia River.

USFWS correspondence dated August 31, 2005, indicated that there are no federally proposed or listed threatened or endangered species known to exist in the South Capitol Street Project Area. The letter stated that a Biological Assessment (BA) or further Section 7 consultation under the Endangered Species Act would not be necessary for species under their jurisdiction (DDOT 2007). This correspondence also included a statement suggesting that DDOT contact the NPS for a list of rare species within the District of Columbia.

In correspondence, dated November 29, 2005, the NPS identified five non-federally listed rare plants within the South Capitol Street Project Area.

A letter dated June 22, 2006 from the USFWS reiterated that no species under their jurisdiction were known to occur within the Project Area and that no further Section 7 consultation with USFWS was necessary. The letter also outlined a concern of the USFWS for impacts related to communication towers on migratory birds.

Project coordination with the NMFS during preparation of the original NRTR and DEIS in 2006 indicated the potential occurrence of shortnose sturgeon within the waters of the Anacostia River near the proposed bridge replacement project. The shortnose sturgeon is federally listed as endangered and recent surveys at that time, conducted by the U.S. Fish and Wildlife Service (USFWS), had documented the presence of shortnose sturgeon in the nearby Potomac River. In December 2006, the DDOT requested consultation with the NMFS pursuant to Section 7 of the Endangered Species Act, as amended, for the shortnose sturgeon. A BA addressing potential project impacts to shortnose sturgeon was prepared by the DDOT during the fall of 2006. In a letter dated February 20, 2007 (DDOT 2007), the NMFS concurred with the findings of the BA that the presence of shortnose sturgeon within the Anacostia River is unlikely and that any impacts to shortnose sturgeon from any activity associated with the project would be discountable. See the *South Capitol Street Natural Resources Technical Report* (DDOT 2007) for additional information.

Further correspondence with the NMFS in August 2013 (email correspondence from Christine Vaccaro, Fisheries Biologist, National Oceanic and Atmospheric Administration) confirmed that a BA for the Atlantic sturgeon would also be required for the project. The Atlantic sturgeon was formally listed by the USFWS as an endangered species on April 6, 2012. The DDOT prepared a new BA to address the likelihood of occurrence of the Atlantic sturgeon within the Anacostia River and what, if any, impacts to the species could occur from construction of the South Capitol Street project. The Atlantic sturgeon BA was submitted to the NMFS and concurrence on the findinngs has been received from the NMFS.

2.3.2 Biological Assessment

The *Biological Assessment* (BA) *of Impacts to the Shortnose Sturgeon (Acipenser brevirostrum)* prepared by DDOT in December 2006 follows requirements outlined in 50 CFR 402.12. The BA discusses in detail the various construction activities related to the new Frederick Douglass Memorial Bridge crossing and demolition of the existing bridge. A copy was provided in the *South Capitol Street Natural Resources Technical Report*

(DDOT 2007). The BA determined that the South Capitol Street project "May Affect, but is Not Likely to Adversely Affect" the shortnose sturgeon. This determination is appropriate as any effects are considered discountable, meaning that they are extremely unlikely to occur, as defined in the USFWS and NMFS Consultation Handbook (USFWS and NMFS 1998). In a letter dated 20 February 2007, the NMFS concurred with the determination that the project is "Not Likely to Adversely Affect" any listed species under NMFS jurisdiction, including the shortnose sturgeon. See the *South Capitol Street Natural Resources Technical Report* (DDOT 2007) for additional information.

The *Biological Assessment of Impacts to the Atlantic Sturgeon (Acipenser oxyrinchus oxyrinchus)* prepared by DDOT in May of 2014 addressed the potential presence of that species within the Project Area and discussed potential impacts to the species from construction activities associated with replacement of the Frederick Douglass Memorial Bridge. The BA concluded that, as with the shortnose sturgeon, the project is "Not Likely to Adversely Affect" the Atlantic sturgeon. This determination was made based on the extreme low likelihood of occurrence of Atlantic sturgeon within the Anacostia River and specific construction techniques and time of year restrictions that will minimize any potential impacts to sturgeon. The Atlantic sturgeon BA was submitted to the NMFS in June of 2014. A final determination by the NMFS has not yet been received.

2.3.3 Conservation Measures

Conservation measures are defined as actions that benefit or promote the recovery of a listed species that are included as an integral part of a proposed action. The following conservation measures were developed from similar projects that are or have occurred within the Potomac River watershed: the Woodrow Wilson Bridge and 11th Street Bridges replacement projects. These methods have been proven effective in reducing impacts to fish during construction of the Woodrow Wilson Bridge.

2.3.3.1. Time-of-Year Restrictions

Time-of-year restrictions on construction activities (underwater blasting, cofferdam installation, pile driving, dredging) will be employed to ensure that in-stream construction activities will occur outside of the likely period of shortnose sturgeon or Atlantic sturgeon occurrence. The life history of the shortnose sturgeon suggests that young of the year shortnose sturgeon could be present in the Project Area from February 15 to July 1. Any potential occurrence of Atlantic sturgeon would be transient adults on spawning runs between March 1 and April 30. Therefore, in-stream construction work, such as described above, would be restricted between February 15 and July 1. This restriction would exclude work within previously constructed cofferdams.

2.3.3.2. Dredging Techniques

Dredging is not currently proposed for construction of the new Frederick Douglass Memorial Bridge or demolition of the existing bridge. Regulatory agencies generally recommend the use of mechanical (clamshell) dredging rather than hydraulic dredging. Should dredging become necessary during activities associated with replacement of the Frederick Douglass Memorial Bridge, then only mechanical dredging will be used and a time-of-year work restriction will be discussed and agreed to between all appropriate regulatory agencies.

2.3.3.3. Technical Impact Reduction Techniques

These techniques can be used to reduce the pressure wave from pile driving or to repel potentially impacted fish from the immediate area. Impact reduction techniques, such as scare charges, physical barriers (e.g., cofferdams), and bubble curtains would be used to mitigate potential impacts from underwater blasting or pile driving during construction. Turbidity curtains may also be used around pier construction to provide a physical barrier between pile driving activities and fish. These curtains would also act to contain suspended solids from leaving the construction site.

Cofferdams would be the likely technique used to reduce the shock wave from pier construction. However, shock waves resulting in fish kills are still possible depending upon the force of the pile driving, depth of the water, substrate, and size of the piles. If piles larger than 66 inches in diameter will be needed for construction of the Frederick Douglass Memorial Bridge, then consideration would be given to using cofferdams in conjunction with bubble curtains to reduce shock waves in the surrounding water to below six pounds per square inch (PSI), the cutoff pressure at which other bridge construction projects have noted fish kills.

2.3.4 Environmental Consequences

2.3.4.1. FEIS Preferred Alternative

A BA for the shortnose sturgeon was prepared in 2006 by DDOT for compliance with the Endangered Species Act. Based on the natural history of the sturgeon, general construction activities, and chemical and physical characteristics of the Anacostia River, the BA determined that the South Capitol Street project “May Affect, but is Not Likely to Adversely Affect” the shortnose sturgeon. This determination is appropriate, as any effects are considered discountable, meaning that they are extremely unlikely to occur as defined in the USFWS and NMFS Consultation Handbook (USFWS and NMFS 1998). In a letter dated 20 February 2007, the NMFS concurred with the determination that the project is “Not Likely to Adversely Affect” any listed species under NMFS jurisdiction, including the shortnose sturgeon.

2.3.4.2. Revised Preferred Alternative

In April of 2012, the Atlantic sturgeon became listed as an endangered species under the Endangered Species Act. A BA for the Atlantic sturgeon was prepared in 2014 by DDOT to evaluate potential impacts to the species from the Revised Preferred Alternative bridge design. The BA determined that the likelihood of occurrence of Atlantic sturgeon within the Anacostia River is extremely low and that conservation measures agreed to during consultation for the shortnose sturgeon would also apply for the Atlantic sturgeon. The BA reached a determination of “Not Likely to Adversely Affect” the Atlantic sturgeon. The BA is currently under review by DDOT and will be submitted to the NMFS for their review and final determination.

2.3.4.3. Mitigation

Mitigation is not required for the shortnose sturgeon and is likewise not anticipated to be required for the Atlantic sturgeon. However, to reach the determination of "May Affect, Not Likely to Adversely Affect" for the shortnose sturgeon, the conservation measures discussed in the BA relating to construction techniques were agreed upon by DDOT and the FHWA. The same conservation measures would apply to the Atlantic sturgeon. Conservation measures are not mitigation but actions to benefit or promote the recovery of listed species.

2.4 Floodplains

The National Flood Insurance Program defines 100-year floodplains as "areas that will be inundated by the flood event having a one percent chance of being equaled or exceeded in any given year". Executive Order 11988 (Floodplain Management) and 23 CFR 650.11 require that federal actions, to the extent possible, avoid short-and long-term impacts to floodplains and avoid direct or indirect support of floodplain development where a practicable alternative exists. The DDOE, Watershed Protection Division reviews all projects proposed within the District of Columbia floodplains as part of the District of Columbia Floodplain Management Program to ensure that the development is consistent with the need to minimize or eliminate flood damage. The District of Columbia's program also coordinates most of its activities with the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP) and the USACE. The 100-year floodplains were located within the Project Area using the FEMA Digital Flood Insurance Rate Maps (DFIRM) for Washington, District of Columbia. The DFIRM database is derived from Flood Insurance Studies (FIS), previously published FIRMs, flood hazard analysis preformed in support of the FISs and FIRMs, and new mapping data where available. Floodplains in the Project Area were revised in 2010, and therefore, are different from the floodplain boundaries described in the *South Capitol Street Natural Resources Technical Report* that was published in 2007. Generally, the 100-year floodplain has been expanded east and west of the Anacostia River within the Project Area.

The Project Area crosses the 100-year floodplain of the Anacostia River. The floodplain extends out east and west of the Anacostia River to the north and south of the existing Frederick Douglass Memorial Bridge. West of the river, the floodplain extends outside of the banks an average of 200 feet with some areas reaching inward of 200 to 500 feet along low-lying areas and approximately 1,200 feet over the Navy Yard property. East of the river, the floodplain extends outside of the banks an average of 800 to 1,600 feet. A majority of the floodplain in the Project Area has been modified to accommodate the development and urbanization of the lower Anacostia River.

Two flood control devices are located in the Project Area on the east bank of the Anacostia River along Poplar Point. A levee extends from the Bolling Air Force Base and the Anacostia Naval Station to the tip of Poplar Point. Inside the military bases, this levee consists primarily of an earthen berm, upon which exists a paved multi-use trail. Outside of the Anacostia Naval Station fence, the levee continues upstream as an earthen berm without a trail, ending near the Poplar Point pump station. Upstream of the levee, a floodwall starts at the point where the higher Poplar Point ground meets the lower ground near the NPS park headquarters facility in Anacostia Park. The remainder of the levee is

comprised of steel pilings. The levee is maintained by public agencies, including the NPS and U.S. Navy.

Executive Order 11988 regulates floodplain impacts and is administered locally by a floodplain coordinator, the DDOE within the District of Columbia. This order requires federal actions to avoid impacts, short-term and long-term, to floodplains to the extent possible. A Finding of No Practical Alternative is prepared for projects with unavoidable impacts to floodplains.

Bridge projects are generally assessed using the USACE's Hydrological Engineering Center-River Analysis System program or similar computer analysis programs to evaluate whether or not a bridge would increase the floodwater elevations before they are approved by floodplain regulation administrators.

Within the Project Area, the 100-year floodplain of the Anacostia River extends primarily onto the western shore of the Project Area. The eastern shore of the Project Area, however, provides minimal floodplain storage for the Anacostia River. That area is located between Anacostia Drive to just upstream of the Poplar Point pump house and associated flood control devices within the Project Area.

2.4.1 Environmental Consequences

The environmental consequences of the FEIS Preferred Alternative are based on the earlier Anacostia River hydraulic model that was shown on FEMA's published FIS and FIRM dated November 15, 1985. The FEIS Preferred Alternative involves construction of an arched-bascule bridge that would span the floodplain transversely. The Revised Preferred Alternative bridge would span the Anacostia River more perpendicularly, and would also extend over approximately 1.59 acres of the east and west floodplains. Spanning generally avoids backwater effects upstream of the bridge. Currently, the majority of the western floodplain area is a concrete helipad and large petroleum-based fuel storage tanks with a very small vegetated riparian zone. The eastern floodplain lies behind a levee and includes Poplar Point Park.

2.4.1.1. FEIS Preferred Alternative

The length of the new Frederick Douglass Memorial Bridge for the FEIS Preferred Alternative is 1,650 feet between the abutments, and the arched-bascule bridge type provides the required 250-foot width navigation channel. The new bridge would provide a minimum of 35-foot vertical clearance (freeboard) from the maximum high water level of the Anacostia River to the bottom of the bridge. This vertical clearance is the required minimal clearance for the marine navigation channel. The proposed dimensions for the navigational envelope, which have been approved by the USCG, are slightly smaller than dimensions provided by the existing bridge. The current navigational envelope has a 250-foot horizontal clearance and a 42-foot vertical clearance. The height of the FEIS Preferred Alternative bridge is constrained by the grades and elevations of the approach roadway connections to South Capitol Street and Suitland Parkway. The vertical profile developed for the new bridge maintains relatively flat grades across the bridge. Further design details, renderings, and profiles of the bridge type are provided in the *Frederick Douglass Memorial Bridge Alignment Study Report* (DDOT 2007).

The arched-bascule bridge type minimizes the total number of piers as well as the number of piers in the water. The FEIS Preferred Alternative proposes placement of one pier

within the 100-year floodplain. Furthermore, design of the new bridge would span the existing levee along the eastern shoreline of the Anacostia River avoiding any impact to the levee. Further design details, renderings, and profiles of the bridge type are provided in the *Frederick Douglass Memorial Bridge Alignment Study Report* (DDOT 2007) and the *Frederick Douglass Memorial Bridge Design Workshop and Preferred Alternative Technical Report* (DDOT 2009).

An analysis of the hydraulic effects of a new arched-bascule bridge over the Anacostia River was conducted. Existing, interim, and proposed conditions were modeled for 10-year, 50-year, 100-year, and 500-year storm events from the mouth of the Anacostia River to approximately 1.48 river miles upstream of the existing Frederick Douglass Memorial Bridge (the existing bridge is located at river mile 0.56). The computed water surfaces showed little or no variation between the storm events (*South Capitol Street Project Hydrology/Hydraulics Technical Report,* DDOT 2007). The computed water surface elevations along the study reach of the existing conditions model show, at most, a 0.02-foot increase for each of the selected storm events. These minor variation cross-sections occur upstream of the existing bridge location.

Construction of a new arched-bascule bridge would have less impact to the flood conveyance capacity (including the Anacostia River plus the 100-year floodplain) than the existing bridge by providing for fewer piers and longer spans. Additionally, once the new bridge is operational, the old bridge would be removed completely. Therefore, the proposed bridge would not pose a substantially larger restriction on the flood conveyance capacity. The *South Capitol Street Project Hydrology/Hydraulics Technical Report* (DDOT 2007) provides further detail regarding the effects of a new bridge.

2.4.1.2. Revised Preferred Alternative

The environmental consequences of the Revised Preferred Alternative are based on FEMA's published FIS and FIRM Panel for the Anacostia River, revised dated September 27, 2010. The Revised Preferred Alternative involves construction of a new fixed span bridge. This new bridge is approximately 1,595 feet long and 122 feet wide. The highest elevation point is about 61 feet, which would provide a maximum of 42 feet of vertical clearance. The bridge would provide a horizontal clearance of 150 feet and will consist of 6 piers ranging from 7.5 to 12 feet wide. The Revised Preferred Alternative proposes the placement of two piers in the 100-year floodplain, one on either side of the Anacostia River. A total of 1.95 acres of floodplain will be impacted by the new bridge design. The new bridge will span the existing levee along the eastern shore of the Anacostia River.

A preliminary hydraulic analysis and preliminary bridge scour evaluation was prepared for DDOT for the Revised Preferred Alternative (*Anacostia River Hydraulic Analysis and Bridge Scour Evaluation for the Replacement of Frederick Douglass Memorial Bridge*, CH2M HILL 2013). This analysis evaluates the potential impacts of the new bridge on floodplains using the methods and criteria listed in DDOT's Design and Engineering Manual (DDEM) and the NFIP regulation. The information below was derived from the *Anacostia River Hydraulic Analysis and Bridge Scour Evaluation for the Replacement of Frederick Douglass Memorial Bridge* prepared by CH2M HILL in 2013.

Water surface elevations were computed for the 10-year, 50-year, 100-year, and 500-year flood events. Comparison of the water surface elevations of the existing and proposed condition reveals no increase in water surface elevation and a maximum decrease of 0.02 feet for the 100-year water surface elevations upstream of the proposed bridge crossing.

In addition, the hydraulic analysis determined that no pressure flow conditions exist for the 100-year and 500-year discharge from the Anacostia River. The 100- and 500-year events flood elevations from the Anacostia River, at the upstream face of the proposed bridge, are about 11 feet and 14 feet. Since the minimum low chord elevation of the proposed bridge is 26 feet, no pressure flow will occur for the 100-year and 500-year flooding conditions.

Since all projected bridge piers of the Revised Preferred Alternative will be placed normal to the flow of the Anacostia River, it will allow maximum conveyance. In addition, piers that are aligned with the flow will minimize scour. Results of the preliminary hydraulic analysis conclude that the new bridge has no significant adverse impacts on the backwater computations of the Anacostia River (CH2M HILL 2013). Further details regarding the effects of the new bridge are provided in the *Anacostia River Hydraulic Analysis and Bridge Scour Evaluation for the Replacement of Frederick Douglass Memorial Bridge* (CH2M HILL 2013).

2.4.1.3. Mitigation

Design of the new Frederick Douglass Memorial Bridge and its approaches would be in accordance with current drainage practices and standards to minimize the impacts to floodplains and flood elevations. DDOT would work with local agencies and the FEMA as required, to ensure project development in accordance with local flood hazard development permit requirements, floodway plans, and floodplain management programs.

2.5 Geology, Topography, and Soils

Information on topography, geology, and soils was gathered from the USGS, MGS, and NRCS sources. Soils information is derived from the USDA *Soil Conservation Service Soil Survey of District of Columbia* (1976) and the updated *Soil Survey Geographic Database for District of Columbia* (2006). The geology, topography, and soils in the Project Area have remained primarily unchanged since the published *South Capitol Street Natural Resources Technical Report* (DDOT 2007).

2.5.1 Geology

The South Capitol Street Project Area is located entirely within the Coastal Plain Physiographic Province. It is underlain by Quaternary lowland sedimentary deposits of the Pleistocene throughout the western portion of the Project Area. The thickness of these deposits ranges from zero to 150 feet with a composition of gravel, silt, and clay. The eastern portion of the Project Area is composed of both Quarternary lowland and the Potomac Group, a Cretaceous period formation composed of interbedded quartzose gravels, protoquartzitic to orthoquartzitic argillaceous sands, in addition to multicolored silts and clays. The USDA *Soil Conservation Service Soil Survey of District of Columbia* (1976) states that this deposit has a thickness of zero to 800 feet. No areas of bedrock outcrops or important mineral resources were identified in the Project Area.

2.5.2 Topography

Topography in the Project Area is relatively flat, with elevations ranging from zero to 25 feet above sea level. The highest elevations are located in the eastern and western-most portions of the Project Area, along Interstate-295 (I-295) and surrounding the Capitol

building. The lowest elevations are along the Anacostia River. Much of the topographic landscape has been altered for development, such as raised berms for highways and grading of topographic relief for the urban street grid.

2.5.3 Soils

A total of six soil associations and 27 soil types are located within the South Capitol Street Project Area according to USDA (1976). These soil associations include the Urban Land, Urban Land-Galestown-Rumford, Urban Land-Christiana-Sunnyside, Urban Land-Sassafras-Chillum, Luka-Lindside-Cordorus, and the Udorthents association, and consist of the following characteristics as described by USDA (1976):

- Urban Land association – consists of nearly level to moderately sloping areas, most of which are occupied by structures
- Urban Land-Galestown-Rumford association – consists of urban land and deep, nearly level to moderately sloping, somewhat excessively drained soils that are mostly sandy throughout
- Urban Land-Christiana-Sunnyside association – consists of urban land and deep, nearly level to steep, well drained soils that are underlain by unstable clayey sediment
- Urban Land-Sassafras-Chillum association – consists of urban land and deep, nearly level to steep, well drained soils that are underlain by sandy and gravelly sediment
- Luka-Lindside-Cordorus association – consists of deep, nearly level, moderately well drained soils that are underlain by stratified alluvial sediment or man-made deposited dredged material
- Udorthents association – consists of deep to moderately deep, nearly level to steep, well drained soils composed of cuts, fills, or otherwise disturbed land; soils in this association are widely varied and generally reflect the texture of soils mapped in adjacent areas

Soils in the Project Area are dominated by Urban Land west of the Anacostia River. East of the Anacostia River, dominant soils include Urban Land, Udorthents, Christiana Urban Land Complex, and Melvin silt loam. Melvin silt loam, Fluvaquents, Udifluvents, and Dunning soils are all located within the Project Area east of the Anacostia River, and are listed as hydric soils by NRCS. Geotechnical investigations presented in the *Preliminary Geotechnical Subsurface Conditions Assessment Report* (DDOT 2006) confirmed soil types present within the Project Area. Table 7 depicts each of the 27 soil units found in the Project Area and characteristics of the units. Figure 6 shows the locations of the soil units within the Project Area.

Table 7: Soils within the Project Area

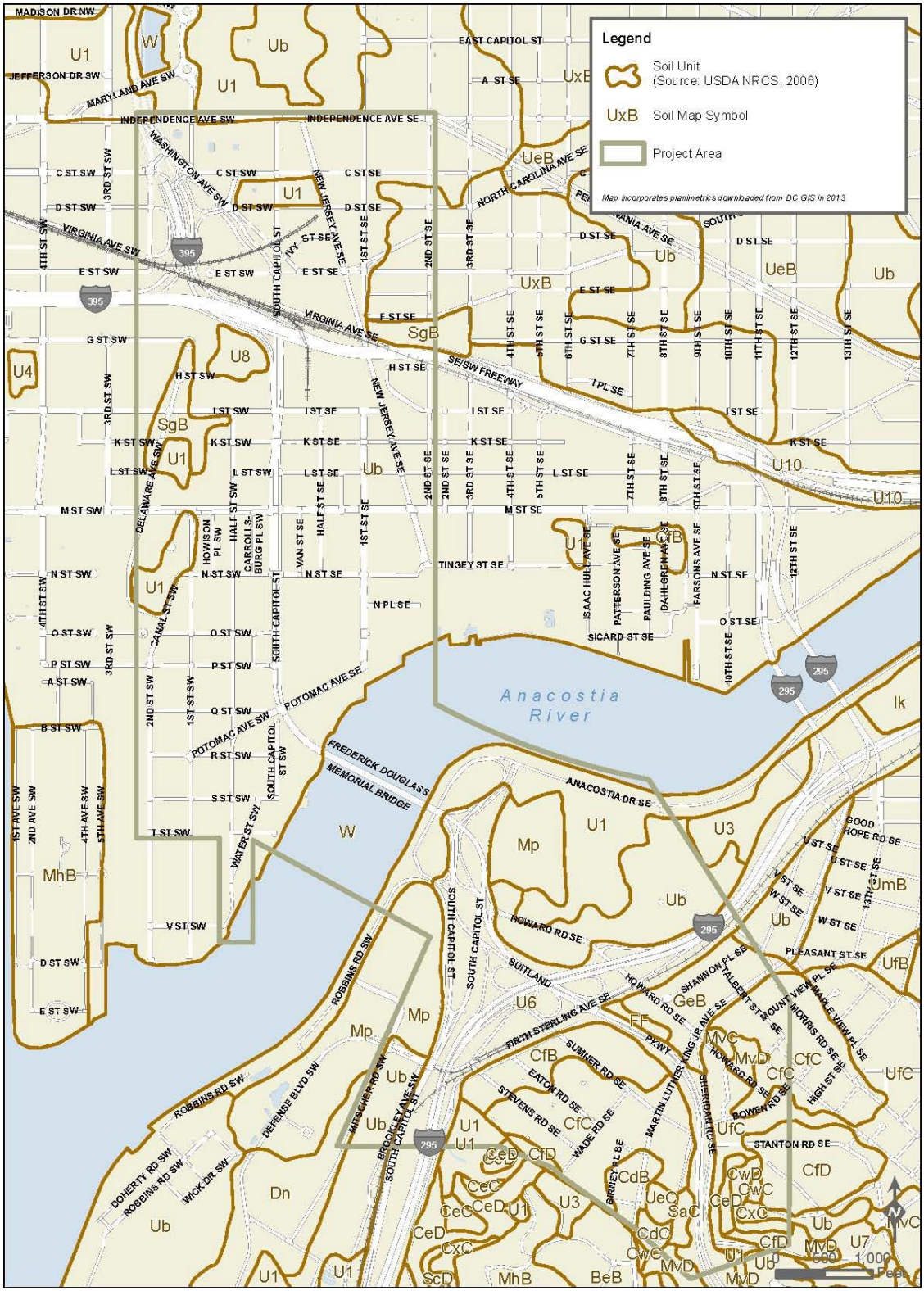
Map Symbol	Soil Name	Drainage Class	Highly Erodible Land	Hydric
CdB	Chillum-Urban Land Complex, 0-8 percent slopes, moderately to severely eroded	Well Drained	Potentially	No
CdC	Chillum-Urban Land Complex, 8-15 percent slopes, moderately to severely eroded	Well drained	Potentially	No

Table 7: Soils within the Project Area

Map Symbol	Soil Name	Drainage Class	Highly Erodible Land	Hydric
CeC	Christiana Silt Loam, 8-15 percent slopes, severely eroded	Well Drained	Yes	No
CeD	Christiana Silt Loam, 15-40 percent slopes, severely eroded	Well Drained	Yes	No
CfB	Christiana Urban Land Complex, 0-8 percent slopes, severely eroded	Well Drained	Potentially	No
CfC	Christiana Urban Land Complex, 8-15 percent slopes, severely eroded	Well Drained	Potentially	No
CfD	Christiana Urban Land Complex, 15-40 percent slopes, severely eroded	Well Drained	Potentially	No
CwC	Croom very gravelly sandy loam, 8-15 percent slopes	Well Drained	Yes	No
CwD	Croom very gravelly sandy loam, 15-40 percent slopes	Well Drained	Yes	No
CxC	Croom-Urban Land Complex, 8-15 percent slopes, severely eroded	Well Drained	Potentially	No
Dn	Dunning soils	Very poorly drained	Potentially	Yes
FF	Fluvaquents-Udifluvents Complex, frequently flooded	N/A	No	Yes
GeB	Galestown-Urban Land Complex, 0-8 percent slopes, moderately eroded	Well Drained	Potentially	No
MhB	Matapeake-Urban Land Complex, 0-8 percent slopes, moderately to severely eroded	Well Drained	Potentially	No
Mp	Melvin Silt Loam, slight erosion	Poorly Drained	No	Yes
MvC	Muirkirk Variant Complex, 8-15 percent slopes, severely eroded	Well Drained	Yes	No
MvD	Muirkirk Variant Complex, 15-40 percent slopes, severely eroded	Well Drained	Yes	No
SaC	Sassafras sandy loam, 8-15 percent slopes	Well Drained	No	No
SgB	Sassafras-Urban Land Complex, 0-8 percent slopes, moderately to severely eroded	Well Drained	Potentially	No
U1[1]	Udorthents, varied erosion	Varied	Potentially	No
U3[1]	Udorthents, Sandy, varied erosion	Varied	Potentially	No
U6[1]	Udorthents, Smoothed, varied erosion	Varied	Potentially	No
U8[1]	Udorthents, Sandy, Smoothed, varied erosion	Varied	Potentially	No
Ub	Urban Land, varied erosion	Varied	No	No
UeC	Urban land-Chillum complex, 8-15 percent slopes	Well Drained	Yes	No
UfC	Urban Land-Christiana Complex, 8-15 percent slopes, severely eroded	Well Drained	Potentially	No
UxB	Urban Land-Sassafras Complex, 0-8 percent slopes, moderately to severely eroded	Well Drained	Potentially	No

Note: Soils in this unit area are widely varied and generally reflect the texture of soils mapped in adjacent areas (USDA Soil Survey of District of Columbia 1976).

Figure 7: Soils within the Project Area



Seven of the 27 soil types in the Project Area are classified as "highly erodible land," with 16 listed as potentially highly erodible. Highly erodible land is susceptible to the erosive forces of wind and water. If precautions are not taken during construction, these soils can be washed into nearby streams resulting in stream channel destabilization, increased flooding, and loss of aquatic habitat. Implementing sediment erosion control measures such as vegetative stabilization, silt fences, and sediment traps can minimize soil erosion impacts.

A description of each soil map unit from the USDA Soil Survey follows:

- Chillum-Urban Land Complex **(CdB)** consists of nearly level to gently sloping, well drained soils of the Chillum series, most areas that have been altered by grading for housing developments, shopping centers, industrial areas and similar uses. The Chillum soils and Urban land occur together in such an intricate pattern in this complex, but it was not practical to separate them in USDA soil survey mapping so they are addressed together. The predominant texture of this soil is silt loam, and many areas have been covered over by 20 inches of fill. This complex is found in urbanized upland areas of the Coastal Plain and is located in the southeastern portion of the South Capitol Street Project Area.
- Christiana Silt Loam 8-15% slopes **(CeC)** and 15-40% slopes **(CeD)** is a moderately to steep sloping soil found on the higher elevations of the Coastal Plain. This soil has a high available water capacity and has been determined to have poor potential for building purposes due to instability. Areas that have been graded or disturbed can be dangerous to build on and cuts and excavations are extremely difficult to stabilize. In areas where it is unlimed, this soil is very strongly acid to extremely acid, posing a risk to the adjacent environment. This soil unit is located in the southeastern portion of the South Capitol Street Project Area.
- Christiana Urban Land Complex 0-8% slopes **(CfB)**, 8-15% slopes **(CfC)**, and 15-40% slopes **(CfD)** consists of nearly level to steep sloping, well drained soils of the Christiana series, most areas of which have been altered by grading for housing developments, shopping centers, industrial areas, and similar uses. It is found on high elevations of urbanized areas of the Coastal Plain. The predominant texture of this soil is silt loam, and many areas have been covered over by 20 inches of fill or have had as much as two-thirds of the original profile removed by cutting and grading. This complex has poor potential for most building purposes because of poor stability, with cuts and excavations becoming difficult to stabilize. Areas that have been graded or disturbed can be dangerous to build on. When under pressure, clay in this soil can squeeze out from under building foundations and footings causing settlement and cracks that can lead to significant building damage. Banks and fills of soil material have collapsed in some areas. Available water capacity is high in relatively undisturbed areas and low in Urban land cut and fill situations. In areas where it is unlimed, this soil is very strongly acid to extremely acid, posing a risk to the adjacent environment. This soil unit is located in the southeastern portion of the South Capitol Street proejct area.
- Croom very gravelly sandy loam 8-15% slopes **(CwC)** and 15-40% slopes **(CwD)** consists of moderately to strongly sloping, well drained soils found on ridge tops and sides of slopes of strongly dissected upland areas of the Coastal Plain. The

predominant texture of this soil is very gravelly loam. Runoff on this soil is rapid and the hazard of erosion is severe. In unlimed areas, this soil is generally very strongly acid throughout the profile, posing a risk to the environment. This soil has a fair potential for use as building sites because of slope. This soil unit occurs minimally in the southeast portion of the Project Area.

- Croom-Urban Land Complex **(CxC)** consists of moderately sloping, well drained soils of the Croom series, most areas of which have been graded, cut, filled, or otherwise disturbed during urbanization. This complex is found on ridge tops and side slopes of urbanized areas of the Coastal Plain. The predominant texture of this soil is gravelly sandy loam, and many areas have been covered over by 20 inches of fill or have had as much as two-thirds of the original profile removed by cutting and grading. The available water capacity of this soil is low, with most unlimed areas becoming extremely acidic, posing a risk to the adjacent environment. This complex has only fair potential for most building purposes because of slope. This soil unit is located in the southeastern portion of the South Capitol Street Project Area.
- Dunning soils **(Dn)** consist of nearly level, very poorly drained soils located on floodplains of the Coastal Plain. This soil is one of three hydric soils mapped in the South Capitol Street Project Area. The predominant texture of this soil is silty clay loam. Permeability and runoff is slow in this soil. The water table is at or near the surface for long periods. Due to wetness, this soil has poor building potential. This soil occurs in the southwestern portion of the South Capitol Street Project Area.
- Fluvaquents-Udifluvents **Comple**x **(FF)** is a frequently flooded soil, and one of three hydric soils found in the South Capitol Street Project Area. These poorly drained soils are nearly level and consist of deposited soil materials washed from uplands. They represent unconsolidated alluvium that is stratified and range in texture from loamy sand to fine sandy loam. This unit is subject to frequent changes from stream overflow, and experience flooding at least twice per year. These soils are poorly suited to most uses because of this flooding, but are valuable for natural areas and as habitat for some kinds of wetland wildlife. This soil unit is found in one location in the southeastern portion of the Project Area directly east of the intersection formed by Firth Sterling Avenue and Suitland Parkway.
- Galestown-Urban Land Complex **(GeB)** consists of **nearl**y level to gently sloping, well drained areas of Galestown soils and areas of Urban Land, and is found on urbanized uplands and terraces of the Coastal Plain. The Galestown soils and Urban land occur together in such an intricate pattern in this complex that it was not practical to separate them in USDA soil survey mapping. Consequently, they and are discussed together. Texture has been classified as loamy sand. Galestown soils in this unit have been altered by grading for housing developments, shopping centers, industrial areas, and other similar uses. Urban land has many areas that have been covered over by 20 inches of fill, and have had nearly all of the original profile removed by cutting and grading. Fill material is commonly from adjacent Galetstown areas that have been cut or graded. Areas that are undeveloped in this complex have good potential for building purposes. These soils are droughty and may require irrigation for plant growth. An onsite

investigation is needed to determine the potentials and limitations for any proposed land use. This soil unit is located in the southeastern portion of the Project Area.

- Matapeake-Urban Land Complex 0-8% slopes **(MhB)** consists of nearly level to gently sloping well drained soils of the Matapeake series, and is found on urbanized uplands of the Coastal Plain. The Matapeake soils and Urban land occur together in such an intricate pattern that it was not practical to separate them in the USDA soil survey mapping. Consequently, these soils are discussed together. Most areas in this unit have been altered by grading for housing developments, shopping centers, industrial areas, and other similar uses. Urban land has many areas that have been covered over by more than 20 inches of fill, and have had nearly all of the original profile removed by cutting and grading. Fill material is commonly from adjacent Matapeake areas that have been cut or graded. Available water capacity is high in relatively undisturbed areas and variable in Urban land cut and fill situations. Most unlimed areas are strongly acid, posing a risk to the adjacent environment. This complex has good potential for building purposes. It is located in the southeastern portion of the Project Area.
- Melvin Silt Loam **(Mp)** is the third of three hydric soils found in the South Capitol Street Project Area. It is a nearly level, poorly drained soil found on floodplains along the Anacostia and Potomac rivers. This soil type is located on the northeastern portion of the Project Area. Some areas in this soil type are subject to flooding but most areas along the Anacostia River are protected by berms and levees. These soils are poorly suited to most uses because of this flooding, but are valuable for natural areas and as habitat for some kinds of wetland wildlife.
- Muirkirk Variant Complex 8-15% slopes **(MvC)** and 15-40% slopes **(MvD)** consists of moderately to steep sloping soils on the higher elevations of the Coastal Plain. Muirkirk Variant soils are so variable and occur together in such an intricate pattern with several other similar soils that it was not practical to separate them in USDA soil survey mapping. Consequently, these soils are discussed together. Texture for this soil unit has been determined to be loamy sand. This complex has poor potential for most building purposes because of poor stability with cuts and excavations becoming difficult to stabilize. Areas that have been graded or disturbed can be dangerous to build on. When under pressure, clay in this soil can squeeze out from under building foundations and footings causing settlement and cracks that can lead to significant building damage. Banks and fills of soil materials have collapsed in areas of this soil type further making it dangerous for building purposes. Disturbed areas are highly erodible and present a pollution problem to nearby waterways if adequate sediment retention devices are not employed. It is located in the eastern region of the South Capitol Street Project Area.
- Sassafras sandy loam **(SaC)** consists of moderately sloping, well drained soils located on ridge tops and side slopes of strongly dissected upland areas of the Coastal Plain The predominant soil texture is sandy loam. Permeability and runoff is moderate in this soil. Water capacity and the hazard of erosion are moderate. In unlimed areas, this soil is generally strongly acid, which poses a danger to the environment. This soil has only fair building potential because of slope. This soil unit is located in the southern portion of the Project Area.

- Sassafras-Urban Land Complex 0-8% slopes **(SgB)** consists of nearly level to gently sloping well drained soils of the Sassafras series, and is found on urbanized uplands of the Coastal Plain. Sassafras soils and Urban land occur together in such an intricate pattern that it was not practical to separate them in USDA soil survey mapping. Consequently, these soils are discussed together. Most areas in this unit have been altered by grading for urban land uses. Fill material is commonly from adjacent Sassafras areas that have been cut or graded. Available water capacity is high in relatively undisturbed areas and low to very low in Urban land cut and fill situations. Most unlimed areas are strongly acid, posing a risk to the adjacent environment. This complex has good potential for building purposes and only fair potential for recreation due to limited open space. It is limited to two areas in the central portion of the western region of the South Capitol Street Project Area.
- Udorthents **(U1)** consist of very heterogeneous, earthy, and inorganic man-made fill material that has been placed on poorly drained to somewhat excessively drained soils on the upland terraces of the Coastal Plain to provide building and roadway sites. Slopes are complex and irregular and the thickness of fill is quite variable, with an average measure of more than 20 inches. The majority of places were this soil type is found are covered by urbanized uses. These soils vary in texture and generally reflect the texture of soils mapped in adjacent areas. Due to subsidence, these soils have a poor potential for nearly any use. This soil is located throughout the South Capitol Street Project Area.
- Udorthents **(U3)** consists of heterogeneous man made material and organic soils that mirror U1 areas with the exception of their texture, which is predominantly sandy. This soil is located in the northeast corner of the South Capitol Street Project Area.
- Udorthents **(U6)** consists of areas that have been cut or filled during grading for roadway and railroad projects. Composition is variable, with a texture that is predominantly smoothed. Areas of this soil that needed fill to complete a project were leveled with material cut in the same area. Most unlimed areas are strongly acid, posing a risk to the adjacent environment. Due to subsidence, these soils have a poor potential for building uses. This soil is limited to the eastern half of the South Capitol Street Project Area.
- Udorthents **(U8)** consists of areas that have been cut or filled during grading for various construction projects. Composition is variable, with a texture that is predominantly sandy and smoothed. This unit has poor potential for building use due to subsidence and poor potential for recreation due to sandiness. This soil is limited to one location in the north central portion of the western half of the South Capitol Street Project Area.
- Urban Land **(Ub)** consists of areas that are over 80 percent covered by urban land and its associated uses. Soil is extremely variable and made up of miscellaneous artificial fills placed over wetlands, tidal marshes, and floodplains. This soil is found throughout the South Capitol Street Project Area.
- Urban land-Chillum complex **(UeC)** consists of areas of Urban land and Chillum soils, located in moderately sloping upland areas of the Coastal Plain that have been urbanized. This soil has been greatly altered by grading for housing

developments, shopping centers, industrial areas, and similar uses. The predominant soil texture is silt loam. Permeability is moderate where the soils are relatively undisturbed and is variable in disturbed areas. Water capacity is moderate where the soils are relatively undisturbed and low in disturbed areas. Runoff is rapid and the hazard of erosion is severe. Due to the urbanized nature of these soils, an onsite investigation is needed to determine the potentials and limitations of this complex for any use. This soil unit is located in the southern portion of the Project Area.

- Urban Land-Christiana Complex 8-15% slopes **(UfC)** consists of nearly level to gently sloping, well drained soils of the Christiana series, which have been altered by grading for housing developments, shopping centers, industrial areas, and similar uses. It is found on high elevations of urbanized areas of the Coastal Plain. The predominant texture of this soil is silt loam, and many areas have been covered over by 20 inches of fill or have had as much as two-thirds of the original profile removed by cutting and grading. This complex has poor potential for most building purposes because of poor stability, with cuts and excavations becoming difficult to stabilize. Areas that have been graded or disturbed can be dangerous to build on. When under pressure, clay in this soil can squeeze out from under building foundations and footings causing settlement and cracks that can lead to significant building damage. Available water capacity is high in relatively undisturbed areas and low in Urban land cut and fill situations. In areas where it is unlimed, this soil is very strongly acid to extremely acid, posing a risk to the adjacent environment. This soil unit is located in the southeastern portion of the South Capitol Street Project Area.
- Urban Land-Sassafras Complex 0-8% slopes **(UxB)** consists of Urban Land and well drained Sassafras soils, which have been altered by grading for housing developments, shopping centers, industrial areas, and similar uses. Available water capacity is high in relatively undisturbed areas and low to very low in Urban land cut and fill situations. In areas where it is unlimed, this soil is very strongly acid to extremely acid, posing a risk to the adjacent environment. This soil has limited potential for building sites due to lack of space. Most projects occur where existing buildings have been removed. This soil unit is located in the northeast corner of the western region of the South Capitol Street Project Area.

2.5.4 Environmental Consequences

Geologically, there are no areas of important mineral resources or bedrock outcrops within the Project Area. Similarly, much of the topographic landscape has been manipulated for development, such as raised berms for highways and grading of topographic relief for the urban street grid. Of the 27 soil types found within the Project Area, 23 have erodible qualities.

2.5.4.1. FEIS Preferred Alternative

Construction of the FEIS Preferred Alternative would require grading of existing land surfaces for placement of new roadway components, primarily near the new Frederick Douglass Memorial Bridge approaches. On the west side of the Anacostia River, the northern edge of the traffic oval would be approximately equal to the existing elevation at Potomac Avenue. On the east side of the Anacostia River, the northern edge of the

proposed traffic circle is approximately 15 feet higher than the existing ground. The southern edge of the traffic circle is approximately equal to the existing elevation; however, it is nearly 15 feet lower than the existing northbound South Capitol Street elevation.

Eleven soil types are found within the limits of disturbance for the FEIS Preferred Alternative. Three soil types are considered not erodible, six potentially erodible, and two highly erodible. The locations of the two highly erodible soil types are along Howard Road SE in the eastern portion of the Project Area where construction impacts would be limited because the FEIS Preferred Alternative does not include widening of Howard Road SE.

Within the limits of disturbance, the soil type along the west shore of the Anacostia River is classified as Urban Land, varied erosion (Ub), while the east shore is comprised of Udorthents, varied erosion (U1) and Melvin Silt Loam, slight erosion (Mp). Topography is relatively flat in these areas and soil erosion during construction is anticipated to be minimal. The majority of the construction would occur in areas with an already high level of urban ground disturbance.

2.5.4.2. Revised Preferred Alternative

Construction of the Revised Preferred Alternative would require grading of existing land surfaces for placement of new roadway components, primarily near the new Frederick Douglass Memorial Bridge approaches. Both the west side and east side traffic ovals would require some grading, predominately using fill material.

A total of 13 soil types are found within the limits of disturbance for the Revised Preferred Alternative. Four soil types are considered not erodible, eight potentially erodible, and one highly erodible. The location of the highly erodible soil type is along Dunbar Road SE in the southern portion of the Project Area, where construction impacts would be limited because the Revised Preferred Alternative does not include improvements to Dunbar Road SE.

Within the limits of the disturbance, the soil type along the western shore of the Anacostia River is classified as Urban Land, varied erosion (Ub), while the eastern shore is comprised of Udorthents, varied erosion (U1) and Udorthents, Smoothed, varied erosion (U6). Topography is relatively flat in these areas and soil erosion during construction is anticipated to be minimal. In addition, the majority of the construction would occur in areas with an already high level of urban ground disturbance..

2.5.4.3. Mitigation

Best Management Practices (BMPs) and currently acceptable design and construction procedures would be used to reduce or eliminate anticipated undesirable effects, such as soil erosion, resulting from construction. Erosion control and stormwater management is required during construction through the NPDES permitting program. Adherence to District of Columbia and federal design criteria for the construction of roadways and bridges would eliminate the potential for long-term soil erosion due to the project.

2.6 Required Permits and Consultations

A variety of permits and consultations would be required for construction of the project. These authorizations assure that proper coordination pursuant to federal and District of

Columbia legislation has been satisfied. The anticipated permits and consultations for natural resources are discussed below.

2.6.1 Section 404 Clean Water Act

The USACE administers this program, which regulates the discharge of dredge and fill material in to waters of the United States, and includes streams and wetlands. Depending on final design, this project is likely to be permitted under a Nationwide USACE Permit (NWP 15: US Coast Guard Approved Bridges and NWP 14: Linear Transportation Projects).

2.6.2 Section 401 Water Quality Certification

Administered by the Water Quality Division of the District of Columbia Environmental Health Administration, this permit acknowledges the USACE issuance of the 404 permit and allows for the District of Columbia to add specific conditions to assure all water quality standards are meet.

2.6.3 Section 9 Rivers and Harbors Act

Administered by the USCG, this permit is required for construction of a new bridge over a navigable waterway. This permit ensures that appropriate horizontal and vertical clearances are met during design. It also requires prior issuance of the 401 Water Quality Certification and prior approval of the environmental document (for this project a Final Environmental Impact Statement and Record of Decision).

2.6.4 Section 10 Rivers and Harbors Act

This permit is administered by the USACE for any work in, over, or under navigable waters of the United States. After the submission of the formal permit application, the USACE will determine what type of permit is needed depending on the type of work proposed.

2.6.5 National Pollution Discharge Elimination System

This permit is required for stormwater discharge from construction sites. Administered by the USEPA Region III, this permit must also meet the DDOE water quality regulations. The DDOE must review and approve plans for stormwater management including sediment and erosion control practices.

2.6.6 FEMA 100-Year Floodplain

Project coordination is required with the DDOE, Watershed Protection Division to ensure that the development is consistent with the need to minimize or eliminate flood damage. The District of Columbia's program also coordinates most of its activities with the Federal Emergency Mangement Agency's (FEMA) National Flood Insurance Program (NFIP) and the USACE.

2.6.7 Endangered Species Act

Section 7 Endangered Species Act consultation with the NMFS regarding the federally endangered shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) is necessary. Concurrence that the Project would have discountable impacts on the shortnose sturgeon, and is not likely to adversely affect the species, was received February 20, 2007. A similar ruling is being sought for the Atlantic sturgeon, and must be obtained prior to construction.

2.6.8 Migratory Bird Treaty Act

The USFWS administers this act. This law makes it illegal by any means or any manner to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755) as amended. A permit for removal and relocation of any osprey nest located on the existing Frederick Douglass Memorial Bridge pier will be necessary from the USFWS prior to bridge demolition.

3.0 References

Anderson, James R., Ernest E. Hardy, John T. Roach, and Richard E. Witmer. 1976. *A Land Use and Land Cover Classification System for Use with Remote Sensor Data*

Atlantic Sturgeon Status Review Team. 2007. Status Review of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). Report to the National Marine Fisheries Service (NMFS), Northeast Regional Office, Glouchester, MA. 174 pp.

Casey Trees Endowment Fund 2005. The State of our Trees: The Status and Health of the Street Trees of Washington, D.C.

Casey Trees. D. C. Street Trees Map available online at http://caseytrees.org/resources/maps/dc-street-trees/. Accessed November 2013.

CH2M HILL. 2013. *Anacostia River Hydraulic Analysis and Bridge Scour Evaluation for the Replacement of the Frederick Douglass Memorial Bridge.*

Dadswell, M.J., B.D. Taubert, T.S. Squiers, D. Marchette, and J. Buckley. 1984. *Synopsis of biological data on shortnose sturgeon (Acipenser brevirostrum) LeSueur 1818*. National Oceanic and Atmospheric Administration Technical Report NMFS 14, Washington DC.

District of Columbia Code § 2-1226.38. Site Planning and Preservation Standards.

DCRA. 1996. DC FMP (District of Columbia, Department of Consumer and Regulatory Affairs, Housing and Environmental Regulation Administration - Environmental Control Division/Fisheries Management Program). 1993-97. *Biological Sampling of Anadromous and Resident Fishes of Potomac and Anacostia Rivers*. Annual reports prepared by DC DCRA ERA Fisheries Management Program, Washington, D.C.

District of Columbia Department of Environment (DDOE). 2013. *2012 Submerged Aquatic Vegetation Survey of the Potomac and Anacostia Rivers Within the District of Columbia.* Fisheries Management Studies, Job 3.1: Aquatic Vegetation Monitoring.

DDOE, District Rivers Monitoring Program. Water quality monitoring results for the Anacostia River South Capitol Street at Nationals Stadium sampling station available online at: http://green.dc.gov/service/anacostia-and-potomac-river-monitoring-program. Accessed September 2013.

DDOE. 2012. *The District of Columbia Water Quality Assessment: 2012 Integrated Report to the US Environmental Protection Agency and Congress Pursuant to Sections 305(b) and 303(d) Clean Water Act.*

DDOE, Fisheries and Wildlife Division. *Fish Survey Data Collected Between 2008 and 2012.*

DDOE. 2010. *Total maximum daily loads of trash for the Anacostia River watershed, Montgomery and Prince George's Counties, Maryland and the District of Columbia*. Report prepared for USEPA.

DDOE. 2006. *District of Columbia Wildlife Action Plan*. Washington, D.C.: DDOE.

DDOE. 2003. *District of Columbia Final Total Maximum Daily Load for Oil and Grease in Anacostia River*. Washington, D.C.: DOH.

DDOE. 2002. *Total Maximum Daily Loads, Upper Anacostia River, Lower Anacostia River, District of Columbia Total Suspended Solids*. Washington, D.C.: DOH.

DDOE. 2000. *The District of Columbia Water Quality Assessment Executive Summary*. Washington, D.C.: DOH.

DDOE. 1992. *Background Study of the Ground Water in the District of Columbia*: *D.C. WMRC Report 103*. Washington, D.C.: DOH.

District of Columbia Department of Transportation (DDOT). 2013. *South Capitol Street Phase 1 Project/Task Order 6 Preliminary Stormwater Management Plan*.

DDOT. 2011. *South Capitol Street Final Environmental Impact Statement/4(f) Evaluation*.

DDOT. 2007a. *South Capitol Street Natural Resources Technical Report*.

DDOT. 2007b. *Anacostia Waterfront Transportation Architecture Design Standards*.

DDOT. 2007c. *South Capitol Street Hydrology/Hydraulics Technical Report*.

DDOT. 2007d. *Frederick Douglass Memorial Bridge Alignment Study Report*.

DDOT. 2006. *Preliminary Geotechnical Subsurface Conditions Assessment Report*.

DDOT. 2006. *Potential Impacts to Shortnose Sturgeon: 11th Street Bridge Project Washington, DC*.

DDOT. 2006. *Biological Assessment of Impacts to the Shortnose Sturgeon (Acipenser brevirostrum): South Capitol Street Project Replacement of the Frederick Douglass Memorial Bridge over the Anacostia River*.

DDOT. 2004. *South Capitol Gateway Corridor and Anacostia Access Studies*.

DDOT. 2003. *The South Capitol Gateway and Corridor Improvement Study*.

District of Columbia Law 5-188, Code § 8-103.01. Water Quality Standards.

District of Columbia Law 5-188, Code § 6-923. Water Pollution Control Act.

District of Columbia Municipal Regulations 21-1104. 2013.

District of Columbia Municipal Regulations 21-1150. Groundwater. 1994.

District of Columbia Office of Planning (DCOP). 2003. *The Anacostia Waterfront Framework Plan – 2003*.

DCOP. 2000. *Anacostia Waterfront Initiative (AWI) Memorandum of Understanding (MOU)*.

Environmental, Engineering, and Educational Solutions. 2008. *Phase II Environmental Site Assessment for South Capitol Street Protective Buying (Jemal's Buzzard Point, LLC and Florida Rock Properties, Inc.)*.

Munsell. 1975. *Munsell Soil Color Charts.* MacBeth Division of Kollmorgen Instruments Corporation, Baltimore, Maryland.

Horne Engineering Services, Inc. 2005. *Draft First Post-Cap Benthic Survey Report*: Anacostia River, Washington, DC.

Horne Engineering Services, Inc. 2003. *Revised Draft Site Characterization report for Comparative Validation of Innovative "Active Capping" Technologies*: Anacostia River, Washington, DC.

Interstate Commission Potomac River Basin. 1998. *Anacostia-The Other River*. ICPRB Publication Number: ICPRB-98-7.

Kazyak, P.F., et al. 1990. *1989 Fishery survey results and habitat enhancement recommendation for the District of Columbia*. Vol. I. Versar, Inc./ESM Operations.

Koterba, M.T., Dieter, C.A., and Miller, C.V., Pesticides in groundwater in the Anacostia River and Rock Creek Watersheds in Washington, D.C., 2005 and 2008: U.S. Geological Survey Investigations Report 2010-5130, 90 p.

Lichvar, Robert W. 2012. *The National Wetland Plant List.* ERDC/CRREL TR-12-11.U.S. Army Corps of Engineers. Cold Regions Research and Engineering Laboratory. Hanover, NH. Available online at: http://acwc.sdp.sirsi.net/client/search/asset:asset?t:ac= $N/1012381.

Maryland Department of Environment (MDE), Water Management Administration. 2011. *2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control*.

MDE and DDOE. 2010. *Total Maximum Daily Loads of Trash for the Anacostia River Watershed, Montgomery and Prince George's Counties, Maryland and District of Columbia*.

Maryland Department of Natural Resources. Retrieved September, 2013. *Northern Snakehead, Maryland's Invasive Northern Snakehead.* Available on-line: http://www.dnr.state.md.us/fisheries/snakehead/index.asp.

Maryland Ornithological Society. 2007. Official List of the Birds of the District of Columbia from 1842 as of February 21, 2007. Maryland/District of Columbia Records Committee of the Maryland Ornithological Society.

Metropolitan Washington Council of Governments. 2003.

Munsell. 1975. *Munsell Soil Color Charts.* MacBeth Division of Kollmorgen Instruments Corporation, Baltimore, Maryland.

National Oceanic and Atmospheric Administration. August 2013. Email correspondence from Christine Vaccaro, Fisheries Biologist, regarding ESA listing of the Atlantic sturgeon and updating of the South Capitol Street Biological Assessment to include potential effects on the Atlantic sturgeon.

National Park Service. 2013. National Capital Parks – East. Poplar Point Species Lists (Birds, Mammals, Amphibians, Reptiles), provided by Mikaila Milton, Biologist, Resource Management Division.

National Marine Fisheries Service. 1998. *Final Recovery Plan for the Shortnose Sturgeon (Acipenser brevirostrum)*.

Phelps, H.L. 2010. *Clam Active Biomonitoring with Corbicula fluminea and POM Passive Monitoring for Anacostia Watershed Contaminant Point Sources.* Report, DC Water Resources Research Center, Washington, DC.

Phelps, H.L. 2004. *Sources of Bioavailable Toxic Pollutants in the Anacostia Watershed* (Part III). Report, DC Water Resources Research Center, Washington, DC.

Phelps, H.L. 1985. *Summer 1984 Survey of Mollusk Populations of the Potomac and Anacostia Rivers near Washington, DC*.

Pinkney, A. E., J.C. Harshbarger, E.B. May, and W.L. Reichert. 2004. Tumor prevalence and biomarkers of exposure and response in brown bullhead (*Ameriurus nebulosus*) from the Anacostia River, Washington, DC and Tuckahoe River, Maryland, USA. Environmental Toxicology and Chemistry 23, 638-647.

Reible, D., Lampert, D., Constant, D., Mutch, Jr., R.D., Zhu, Y. 2006. *Active capping demonstration in the Anacostia River, Washington, D.C.* Remediation Journal. 17(1):39.53.

Reible, D., Constant, W.D., Roberts, K., Zhu, Y.W. 2003. *Active capping demonstration in Anacostia D.C.* Battelle Sediments Conference Proceedings Paper.

Richmond, A., and B. Kynard. 1995. *Ontogenic behaviour of shortnose sturgeon*. Copeia 1995:172-182.

Ridolfi Engineers. 2003. *Phase I Environmental Site Assessment Poplar Point Site (Section One) Washington, DC*. Report prepared for District of Columbia and NOAA.

Syracuse Research Corporation and National Oceanic and Atmospheric Administration. 2000. *Interpretive Summary of Existing Data Relevant to Potential Contaminants of Concern within the Anacostia River Watershed*. Accessed online: http://archive.orr.noaa.gov/cpr/watershed/anacostia/guide/home/Ana_jn00.pdf.

University of the District of Columbia, D.C. Water Resources Research Center. 1992. *Ground Water Resource Assessment Study for the District of Columbia*. 97pp. plus Appendices.

U.S. Army Corps of Engineers (USACE). 2008. *Concepts and Procedures for Updating the National Wetland Plant List.* eds. Lichvar RW and Minkin P. U.S. Army Engineer Research and Development Center. Vicksburg, MS. Report# ERDC/CRREL TN-08-3. Available online at: http://rsgisias.crrel.usace.army.mil/apex/f?p=703:19:0::NO.

USACE. 1987. *1987 Corps of Engineers Wetland Delineation Manual*.

USACE. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*, *Version 2.0.* eds. JS Wakeley, RW Lichvar, and CV Noble. U.S. Army Engineer Research and Development Center. Vicksburg, MS. Report# ERDC/EL TR-10-20.

U.S. Department of Agriculture (USDA), Natural Resource Conservation Service. 2010. *Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating*
Hydric Soils, Version 7.0. 44pp.

USDA, Natural Resource Conservation Service. 2006. *Soil Survey Geographic Database for District of Columbia*, Fort Worth, Texas.

USDA. 1976. *US Department of Agriculture Soil Conservation Service Soil Survey of District of Columbia*.

U.S. Environmental Protection Agency. 1997. *A Scientific Foundation for Setting an Environmental Agenda: An Environmental Characterization of the District of Columbia*. USEPA Region 3.

U.S. Geologic Survey (USGS). 2005. *Identification of PCB and Chlordane Source in the Anacostia River Watershed*. Project ID 2004DC61B.

USGS. 2005. Aquifer Basics. http://capp.water.usgs.gov/aquiferBasics/semiconsol.html. Accessed online: August 2005.

USGS. 1987. *Preliminary assessment of water quality and its relation to hydrogeology and land use; Potomac-Raritan-Magothy aquifer system, New Jersey*. 79pp.

USGS. 1984. *National Water Summary - Groundwater Resources, Maryland and the District of Columbia*. Water Supply Paper 2275.

U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1998. *Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act.*

Velinsky, D. J. and J. T. F. Ashley. 2001. Deposition and Spatial Distribution of Sediment-bound contaminants in the Anacostia River, District of Columbia. Report No. 01-30. Report submitted to the District of Columbia from the Patrick Center for Environmental Research, The Academy of Natural Sciences, Philadelphia, PA.

Supplemental Natural Resources Technical Report

Appendix A

Routine Wetland Delineation Data Sheets

May/June 2014

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Capitol Street Project City/County: Washington DC Sampling Date: 5/20/14
Applicant/Owner: DDOT State: MD Sampling Point: WET 1
Investigator(s): SS, MN, R Section, Township, Range: _____
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2-3
Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: PFO1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Yes Are "Normal Circumstances" present? Yes ✓ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____
Hydric Soil Present?	Yes ✓	No _____
Wetland Hydrology Present?	Yes ✓	No _____

Is the Sampled Area within a Wetland? Yes ✓ No _____

Remarks:
Plot taken within disturbed swale, sediment deposits on top of hydric soil layer.
Photo 5 - looking down slope (South) from WET 1
Photo 6 - looking upslope (North) from WET 1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ☐ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ✓ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes ✓	No _____	Depth (inches): 1"
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET 1

Tree Stratum (Plot size: irregular swale)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	8	✓	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	8 = Total Cover		
50% of total cover: 4	20% of total cover: 1.6		

Sapling/Shrub Stratum (Plot size: irregular swale)			
1. Ulmus pumila	10		FACU
2. Lonicera maackii	5		UPL
3. Fraxinus pennsylvanica	60	✓	FACW
4.			
5.			
6.			
7.			
8.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		

Herb Stratum (Plot size: irregular swale)			
1. Acer rubrum	5	✓	FAC
2. Rumex crispus	4		FAC
3. Ulmus pumila	6	✓	FACU
4. Fraxinus pennsylvanica	10	✓	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		

Woody Vine Stratum (Plot size: irregular swale)			
1. Lonicera japonica	15	✓	FACU
2. Parthenocissus quinquefolia	5	✓	FACU
3.			
4.			
5.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 4/2	70					SL	
	10YR 3/1	30						
2-14	10YR 5/3	80	7.5YR 4/4	20	C	M	SCL	
14-20*	10YR 4/1	90	7.5YR 4/6	10	C	M	C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3) *
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

*Sand layer ⇒ sediment deposit from recent construction
Presence of sand/sediment causing hydric soil to begin further down in the soil profile

District Department of Transportation

appendix F

biological assessment of impacts to the atlantic sturgeon

BIOLOGICAL ASSESSMENT OF IMPACTS TO THE ATLANTIC STURGEON (*ACIPENSER OXYRINCHUS OXYRINCHUS*)

SOUTH CAPITOL STREET PROJECT

REPLACEMENT OF THE FREDERICK DOUGLASS MEMORIAL BRIDGE OVER THE ANACOSTIA RIVER

DISTRICT OF COLUMBIA

Prepared For:
National Marine Fisheries Service
Northeast Region
One Blackburn Drive
Gloucester, MA 01930-2298

Prepared By:
The District Department of Transportation
(On behalf of the Federal Highway Administration)
2000 14th Street, NW, 6th Floor
Washington, DC 20009 (202) 673-6813

Federal Highway Administration

July 2014

Introduction

The District of Columbia Department of Transportation (DDOT) is undertaking a Supplemental Final Environmental Impact Statement (SFEIS) for the South Capitol Street Project to account for potential impacts as a result of the design refinements that have been proposed since the 2011 FEIS. The project includes replacing the Frederick Douglass Memorial Bridge (FDMB), reconstructing connecting roadways and interchanges, and adding streetscape features. The FDMB on South Capitol Street is a major entrance into the Nation's Capital from the southeast, and this project will be a key to the Anacostia Waterfront Initiative project to revitalize the entire Anacostia waterfront area. It is located approximately 1.3 river miles above the mouth of the Anacostia River (**Figure 1**) and approximately one river mile downstream of the 11th Street Bridges.

Consultation Activities to Date

Project coordination with the National Marine Fisheries Service (NMFS) during preparation of the DEIS in 2006 indicated the potential occurrence of *Acipenser brevirostrum* (shortnose sturgeon) within the waters of the Anacostia River near the proposed bridge replacement project (**Appendix A**). The shortnose sturgeon is federally listed as endangered and recent surveys at that time, conducted by the U.S. Fish and Wildlife Service (USFWS), had documented the presence of shortnose sturgeon in the nearby Potomac River. A Biological Assessment (BA) addressing potential project impacts to shortnose sturgeon was prepared by the Federal Highway Administration (FHWA) during the fall of 2006. In a letter dated February 20, 2007 (See Appendix A), the NMFS concurred with the findings of the BA that the presence of shortnose sturgeon within the Anacostia River is unlikely and that any impacts to shortnose sturgeon from any activity associated with the project would be discountable.

On April 6, 2012, the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) was formally listed by the USFWS as an endangered species. Because the South Capitol Street project has initiated a SFEIS to address the Revised Preferred Alternative, FHWA and the DDOT are now examining potential project impacts to the Atlantic sturgeon. The requirement to complete this assessment was confirmed in correspondence from Christine Vaccaro of the NMFS dated August 16, 2013 (See Appendix A for this correspondence).

This revised BA identifies the Revised Preferred Alternative and includes information on the status of the Atlantic sturgeon within the project study area. The BA does not reevaluate potential impacts to shortnose sturgeon, as the elements of the bridge design and the conditions within the Anacostia River have not changed substantially from the original BA. The NMFS August 16, 2013 correspondence indicates that the assessment must be updated to address potential impacts to Atlantic sturgeon.

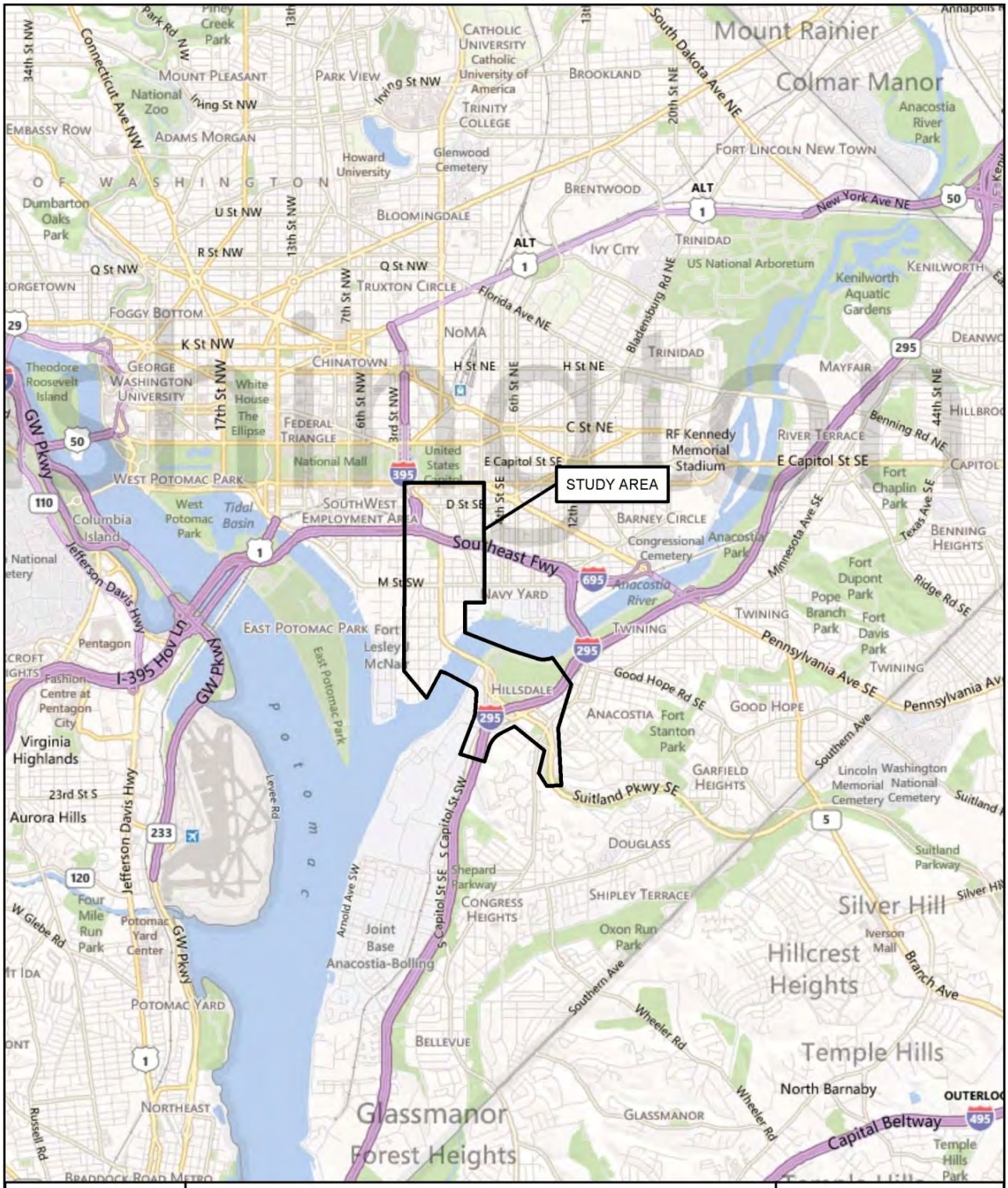


FIGURE 1: VICINITY MAP

SOUTH CAPITOL STREET PROJECT
WASHINGTON D.C.

OCTOBER 2013

COASTAL RESOURCES INC.

N W E S

SCALE: 1 in = 1 miles

Project Description: Revised Preferred Alternative

The Revised Preferred Alternative is comprised of 5 segments, as described below and shown in Figure 2. A description of each of the 5 segments is provided below.

- Segment 1 encompasses the Anacostia River and the land areas immediately on both the west (near the Nationals Ballpark and Buzzard Point) and east (near Anacostia and Poplar Point) ends of the river.

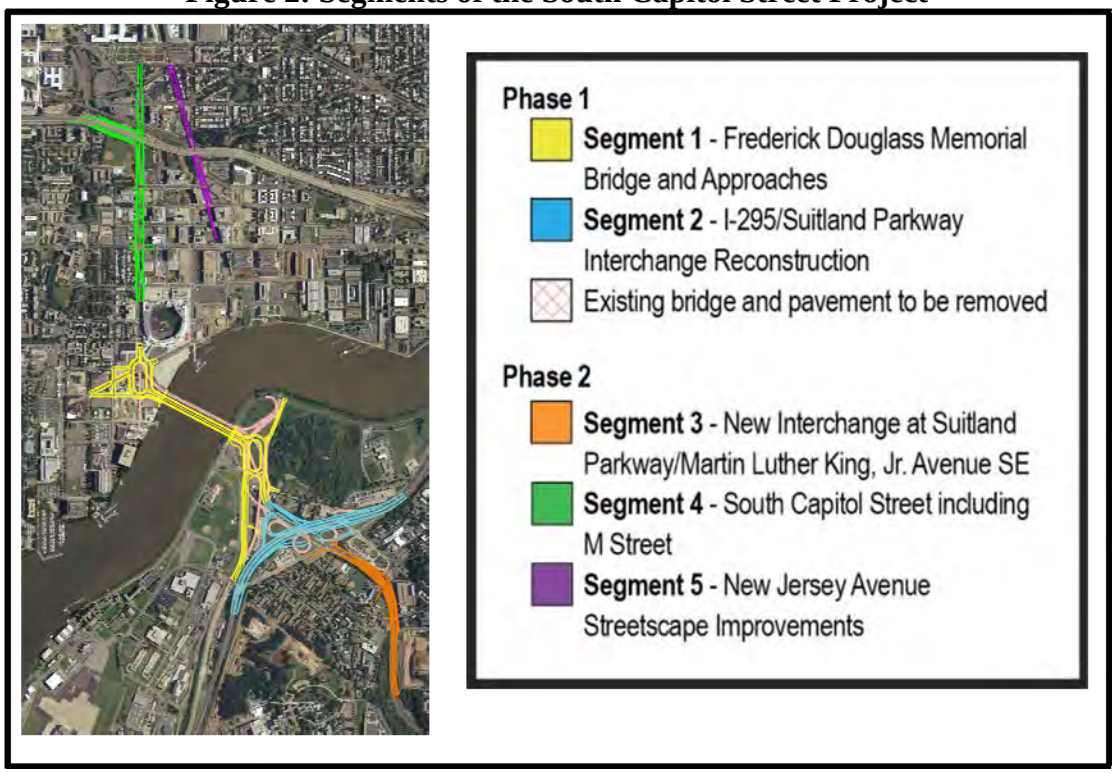
- Segment 2 encompasses I-295 and the area between South Capitol Street SE and Firth Sterling Avenue SE, including Suitland Parkway.

- Segment 3 includes Suitland Parkway from Firth Sterling Avenue SE east to just south of Stanton Road SE.

- Segment 4 includes South Capitol Street from N Street to D Street.

- Segment 5 encompasses the areas north of I-695 to Independence Avenue, but also includes New Jersey Avenue SE between M Street SE and Independence Avenue SE.

Figure 2: Segments of the South Capitol Street Project



The proposed project would be constructed in two phases. The first phase would include Segments 1 and 2, and the second phase will include Segments 3, 4 and 5. The demolition of the existing FDMB would be included in Phase 1. Currently, the procurement for the construction of Phase 1 is underway as a design build project. For the purposes of this study, the analysis will be focused on Segment 1 and primarily the replacement of the FDMB over the Anacostia River and the demolition of the existing FDMB, as described below and detailed in the definition of the Action Area at the end of this section.

Frederick Douglass Memorial Bridge

The proposed FDMB alignment of the Revised Preferred Alternative would be located parallel to and approximately 30 feet from the south side or downstream of the existing bridge. The replacement bridge would be a fixed span, meaning that passage of vessels with heights greater than the vertical clearance below the structure, approximately 42 feet, would no longer be allowed to pass. The 42 feet vertical clearance was based on the information collected for the Anacostia River Navigation Evaluation, which found that 99.9 percent of vessels require less than 42 feet vertical clearance. The decision to identify a Revised Preferred Alternative with a fixed span bridge was made because very few vessels navigating the river now and in the future require vertical clearances greater than what could be provided by a fixed span bridge.

Similar to the FEIS Preferred Alternative, the new proposed bridge associated with the Revised Preferred Alternative would support six travel lanes (three lanes in each direction), and bike/pedestrian paths. The bike/pedestrian paths would be located on opposite sides of the bridge, the same as what was proposed for the FEIS Preferred Alternative. However, each path would be approximately 18 feet wide, or two feet narrower than what was proposed in the FEIS. For each path, separate areas would be provided for cyclists and pedestrians. For cyclists, both paths would provide for two-way traffic.

Action Area

The action area for the South Capitol Street project includes all areas of potential effect; both direct and indirect (**Figure 3**). The specific limits include approximately 1,000 feet downstream of the proposed bridge crossing and 500 feet upstream of the existing FDMB. These limits were established based on the potential direct effects from shock waves from pile driving and demolition of the existing bridge and indirect effects from drift of suspended solids within this tidal portion of the Anacostia River.

COASTAL RESOURCES INC.

FIGURE 3: ACTION AREA MAP

SOUTH CAPITOL STREET PROJECT
WASHINGTON D.C.

OCTOBER 2013

LEGEND:

Action Area

Limit of Disturbance

N W E S

SCALE: 1 inch = 1,000 feet

Existing Conditions

Topography

The entire South Capitol Street project area is located within the Coastal Plain physiographic province. Topography in the project area is relatively flat with elevations ranging from zero to 25 feet above sea level. The highest elevations are located in the eastern and western-most portions of the project area, along Interstate-295 (I-295) and surrounding the Capitol building. The lowest elevations are along the Anacostia River. Much of the topographic landscape has been altered for development, such as raised berms for highways and grading of topographic relief for the urban street grid.

Bathymetry of the Anacostia River

Anacostia River depths adjacent to the existing FDMB are shown in the bathymetry study completed for the Anacostia River in 2012 (**Figure 4**). Bottom depths along both shores just south of the existing bridge drop off quickly to about 15 feet. Depths then increase to about 20 feet within the approximately 300-foot wide navigation channel within the middle of the river.

Water Quality

The Anacostia watershed (Federal Hydrologic Unit Code (HUC) 02140205) extends north through the eastern portion of the District of Columbia into Montgomery and Prince George's counties in south central Maryland. The watershed originates within the eastern Piedmont physiographic province and drains across the Fall Line to the western Coastal Plain province. The Anacostia watershed drains 176 square miles comprising mainly urban and suburban land.

The District of Columbia Department of the Environment (DDOE) has a fixed daily monitoring station on the Anacostia River just upstream of the existing FDMB (South Capitol Street/Nationals Stadium Station). Water quality data from the monitoring station were available for most months from 2008 through 2012 for dissolved oxygen (DO), temperature, and salinity. Mean values from 2012 and historical ranges are listed below in ***Table 1***.

Figure 4

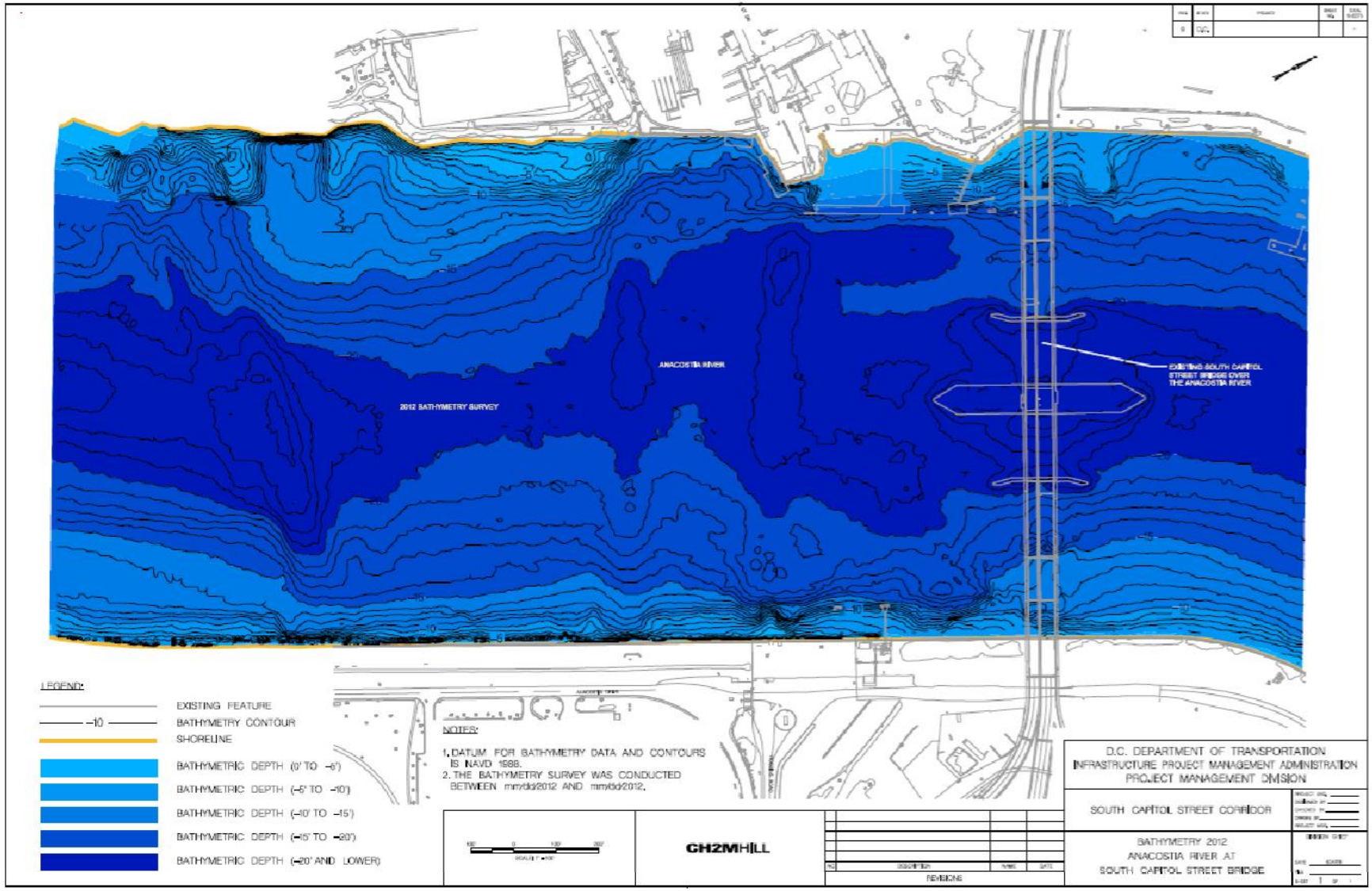

ANACOSTIA RIVER
2012 BATHYMETRY SURVEY
EXISTING SOUTH CAPITOL STREET BRIDGE OVER THE ANACOSTIA RIVER
LEGEND:
EXISTING FEATURE
-10
BATHYMETRY CONTOUR
SHORELINE
BATHYMETRIC DEPTH (0' TO -5')
BATHYMETRIC DEPTH (-5' TO -10')
BATHYMETRIC DEPTH (-10' TO -15')
BATHYMETRIC DEPTH (-15' TO -20')
BATHYMETRIC DEPTH (-20' AND LOWER)
NOTES:
1. DATUM FOR BATHYMETRY DATA AND CONTOURS IS NAVD 1988.
2. THE BATHYMETRY SURVEY WAS CONDUCTED BETWEEN mm/dd/2012 AND mm/dd/2012.
CH2MHILL
REVISIONS
D.C. DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE PROJECT MANAGEMENT ADMINISTRATION
PROJECT MANAGEMENT DIVISION
SOUTH CAPITOL STREET CORRIDOR
BATHYMETRY 2012
ANACOSTIA RIVER AT
SOUTH CAPITOL STREET BRIDGE

Table 1. Water Quality Monitoring Results for the Anacostia River at the South Capitol Street/Nationals Stadium Station.

Monitoring Station Anacostia River South Capitol Street at Nationals Stadium												
	Dissolved Oxygen (mg/L)				**Temperature (°C)**				**Salinity (ppt)**			
Month	**Min.**	**Mean**	**Max**	**2012[1]**	**Min.**	**Mean**	**Max**	**2012[1]**	**Min.**	**Mean**	**Max**	**2012[1]**
January	8.81	10.98	13.05	-	0.61	7.68	20	-	0.18	0.32	0.62	-
February	10.67	12.27	13.90	-	3.63	4.92	7.52	-	0.20	0.34	0.57	-
March	5.79	9.26	13.77	7.87	3.93	9.91	14.23	15.44	0.12	0.21	0.67	0.16
April	1.98	7.44	12.56	7.37	6.08	15.28	21.74	15.92	0	0.17	0.24	0.17
May	1.49	6.14	12.06	5.14	11.87	19.70	26.68	21.82	0.06	0.14	0.21	0.15
June	0.18	4.34	14.20	4.54	18.97	26.17	31.02	25.48	0.07	0.14	0.18	0.12
July	0.31	5.85	15.34	4.01	25.16	28.48	31.99	29.15	0.07	0.16	0.19	0.14
August	0.22	4.32	13.66	2.93	22.76	27.73	31.11	28.02	0.01	0.15	0.19	0.15
September	0.36	5.14	15.51	3.97	20.25	23.49	29.26	24.58	0	0.15	0.21	0.14
October	0	5.88	10.36	5.49	10.03	17.18	22.28	18.21	0.01	0.14	0.19	0.15
November	2.32	7.22	11.53	8.51	6.39	11.31	15.78	7.08	0.09	0.16	0.20	0.16
December	5.72	8.81	14.74	8.81	-0.92	6.98	12.91	6.69	0.01	0.15	1.24	0.17

Source: District Department of Environment/District Rivers Monitoring Program (accessed 9/23/13)

[1]Mean

Range of data- 2008 to 2011

Water quality parameters were measured from 2008 to present, creating a historical reference range for the monitoring site. The 2012 readings were excluded from this range for comparison. DO, water temperature, and salinity fluctuate seasonally in the Anacostia River as shown in the data tables above. The 2012 readings were generally within the historical ranges, falling outside only for temperature in March, where the 2012 March average temperature was higher than the maximum for the 2008 through 2011 range. Also, the mean monthly temperatures for 2012 exceeded the 2008 through 2011 mean temperatures in all months except June, November, and December. DO measurements taken in 2012 were below average for all months except June and November. The lowest monthly average DO measurements taken in 2012 were recorded in August and September with readings of 2.93 milligrams/liter (mg/L) and 3.97 mg/L, respectively. Average monthly salinity measurements in 2012 are similar to the longer term averages for those months, ranging from 0.12 to 0.17 parts per thousand (ppt). These values fall within the tidal freshwater range.

The Virginia Institute of Marine Sciences (VIMS), in coordination with the National Oceanic and Atmospheric Administration (NOAA), Virginia Department of Environmental Quality, Maryland Department of Natural Resources, and the Virginia Coastal Zone Management Program, documents the presence of submerged aquatic vegetation (SAV) within the Chesapeake Bay Watershed on a yearly basis (mid-1990s to present). Aerial photography is used to document SAV bed locations, size, and species present. These data are then used to develop trends, identify areas of decline and abundance, and implement preservation strategies. Historical SAV mapping, from 1994 to present, was reviewed to determine the extent of SAV

beds within the Anacostia River and immediate vicinity of the FDMB. According to results presented by VIMS on their SAV web site (http://www.vims.edu/bio/sav), no SAV beds were observed within the tidal portion of the Anacostia River. SAV surveys of the tidal Anacostia River within the District of Columbia are conducted annually by the Fisheries and Wildlife Division (FWD) of the DDOE. Surveys are conducted from a slow moving boat driven along the shorelines and SAV are documented by visual observation and rake sampling. All of the shoreline areas of the Anacostia River that are contained within the District of Columbia were surveyed for SAV. The results of this effort indicated that no SAV was observed in the Anacostia River in 2012 (DDOE 2013). DDOE reports that no observable SAV has been present in the Anacostia River since 2002 (Daniel Ryan personal communication August 27, 2013).

The Anacostia River has had a long history of contamination from human activities such as development, waste disposal, and hazardous materials. The BA completed for the 11th Street Bridges project (CH2M HILL 2006) references information on contaminants collected by the District of Columbia Department of Health (DCDOH), Metropolitan Washington Council of Governments, and others. The report discusses contaminants within bottom sediments and degraded water quality of the Anacostia River as it relates to the potential presence of Atlantic sturgeon within the Anacostia River.

Status of Atlantic Sturgeon in the Potomac River

The Atlantic sturgeon was once an abundant fish resource along the Atlantic coast, ranging from Hamilton Inlet along the Atlantic coast of Labrador to at least the St. Johns River in Florida (Smith 1985). Atlantic sturgeon served as an important commercial fishery during colonial and post Civil War days (Smith 1985). By 1890, the Chesapeake Bay Atlantic sturgeon fishery peaked at 726,036 pounds, but fell rapidly after the turn of the twentieth century to a harvest of only 22,898 pounds in 1920 (Murdy et al. 1997). Through this period and into the late twentieth century, declines in the Atlantic sturgeon fishery continued in the Chesapeake Bay and throughout its range with reasons for the decline being directly attributable to human impacts, including over-harvesting, construction of dams on spawning rivers, and pollution from industrial and domestic sources (Smith 1985).

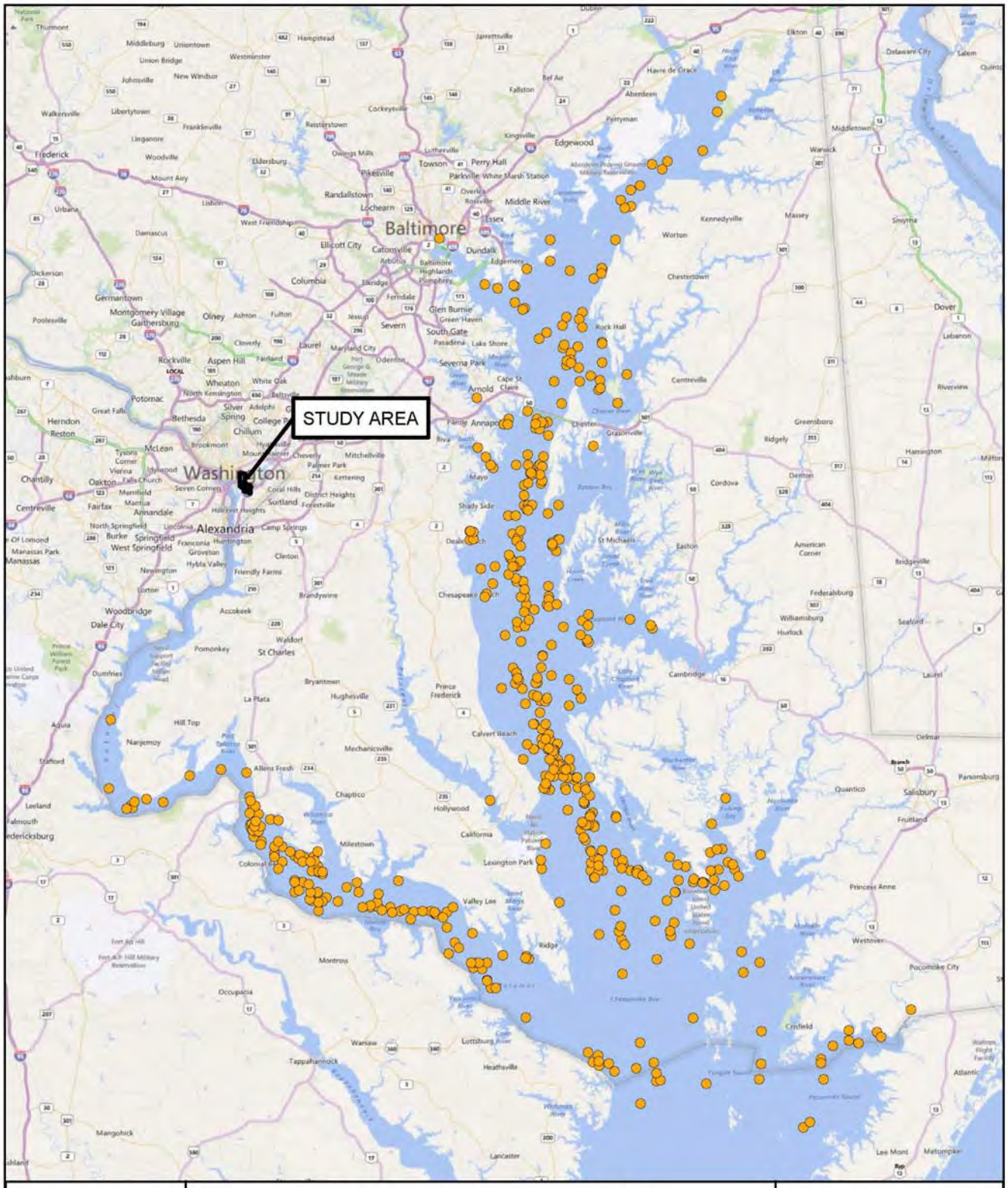
In 1997, the NMFS added the Atlantic sturgeon to its candidate species list (later Species of Concern list). A status review of the Atlantic sturgeon was completed by the NMFS in 1998, but the species was not determined to meet the criteria for listing at that time. During this same period, the Atlantic States Marine Fisheries Commission completed an amendment to the 1990 Atlantic Sturgeon Fishery Management Plan that imposed a 20-40 year moratorium on all Atlantic sturgeon fisheries (ASSRT 2007). In 2003, the NMFS again began a review of the status of the Atlantic sturgeon. The results of the review were published in 2007 (ASSRT 2007). In 2010, the NOAA proposed listing the Atlantic sturgeon under the Endangered Species Act. The final listing was published in the Federal Register (50 CFR parts 223 and 224) on February 6, 2012 and became effective on April 6, 2012. Five Distinct Population Segments (DPS) were identified in the listing, including the Gulf of Maine, New York Bight, Chesapeake Bay, Carolina, and South Atlantic. The Gulf of Maine DPS was listed as threatened, while the New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPS were listed as endangered.

Mitochondrial DNA studies of Atlantic sturgeon taken from the Chesapeake Bay indicate the presence of a resident Chesapeake Bay population and migrant sturgeon from the Delaware Bay and Hudson River sub-populations of the New York Bight DPS (King et al. 2001).

Historically, Atlantic sturgeon were common within the Chesapeake Bay and they are believed to have spawned within most of the major rivers of the Bay, including the Potomac River (ASSRT 2007). However, following the 1998 moratorium on fishing for Atlantic sturgeon, few sturgeon were reported as bycatch by commercial fisherman in Maryland waters of the Chesapeake Bay, though anecdotal evidence from fishermen indicated that Atlantic sturgeon were more abundant than sparse bycatch reports would indicate (Mangold et al. 2007). In 1992, the Maryland Fishery Resources Office (MFRO) and USFWS initiated a coast-wide sturgeon tagging program designed to coordinate sturgeon tagging and research efforts across several Atlantic states. A smaller tagging program was started in Maryland to gather detailed data on Atlantic sturgeon in Maryland waters. From 1994 to 1996, the MFRO sought live sturgeon from commercial fishermen in the Maryland portion of the Chesapeake Bay. Only two Atlantic sturgeon were reported to the program over those two years. In 1996, the MFRO initiated a reward program to provide a monetary incentive to commercial fisherman for turning in live sturgeon captured during fishing operations. This incentive substantially increased the number of sturgeon supplied to the program. Also in 1996, the MFRO released approximately 3,000 hatchery-reared Atlantic sturgeon in the Nanticoke River (Mangold et al. 2007, Secor et al. 2000). These juvenile Atlantic sturgeon were individually tagged, and the reporting of these hatchery-reared Atlantic sturgeon was encouraged through their inclusion in the sturgeon reward program. The award program was continued through April 2012 when the Atlantic sturgeon endangered species listing took effect.

The number of Atlantic sturgeon reported during the more than 16 years of the sturgeon reward program included 1,590 wild adult Atlantic sturgeon and 463 hatchery-reared juvenile Atlantic sturgeon (USFWS 2013). **Figure 5** shows the capture locations of adult Atlantic sturgeon reported between 1996 and 2012, while **Figure 6** depicts the capture locations of hatchery-reared juvenile Atlantic sturgeon through that same period (USFWS 2013). Numerous wild Atlantic sturgeon were caught within the Potomac River; however, only eleven (11) were documented above the Harry Nice Bridge crossing of US 301. Significantly fewer juvenile Atlantic sturgeon were captured within the Potomac River, and only one capture occurred above the Harry Nice Bridge crossing. No Atlantic sturgeon have been reported within the Anacostia River or within the Potomac River above Indian Head, some 23 miles downriver of the FDMB.

As described above, historical reasons for Atlantic sturgeon declines were attributed to over-harvesting, the construction of dams, and pollution. Current Atlantic sturgeon impacts occur through alterations of foraging and spawning habitat from dam construction and operation, dredging and disposal, water quality modifications, and vessel strikes (ASSRT 2007). Dams can directly affect Atlantic sturgeon by cutting off spawning habitat, altering flow regimes, and releasing excess sediment that can bury sturgeon spawning or foraging habitats. However, within the Chesapeake Bay DPS, dams are not thought to be a significant threat to Atlantic sturgeon, as few dams exist within the known or historic spawning areas of the Chesapeake Bay rivers (ASSRT 2007).

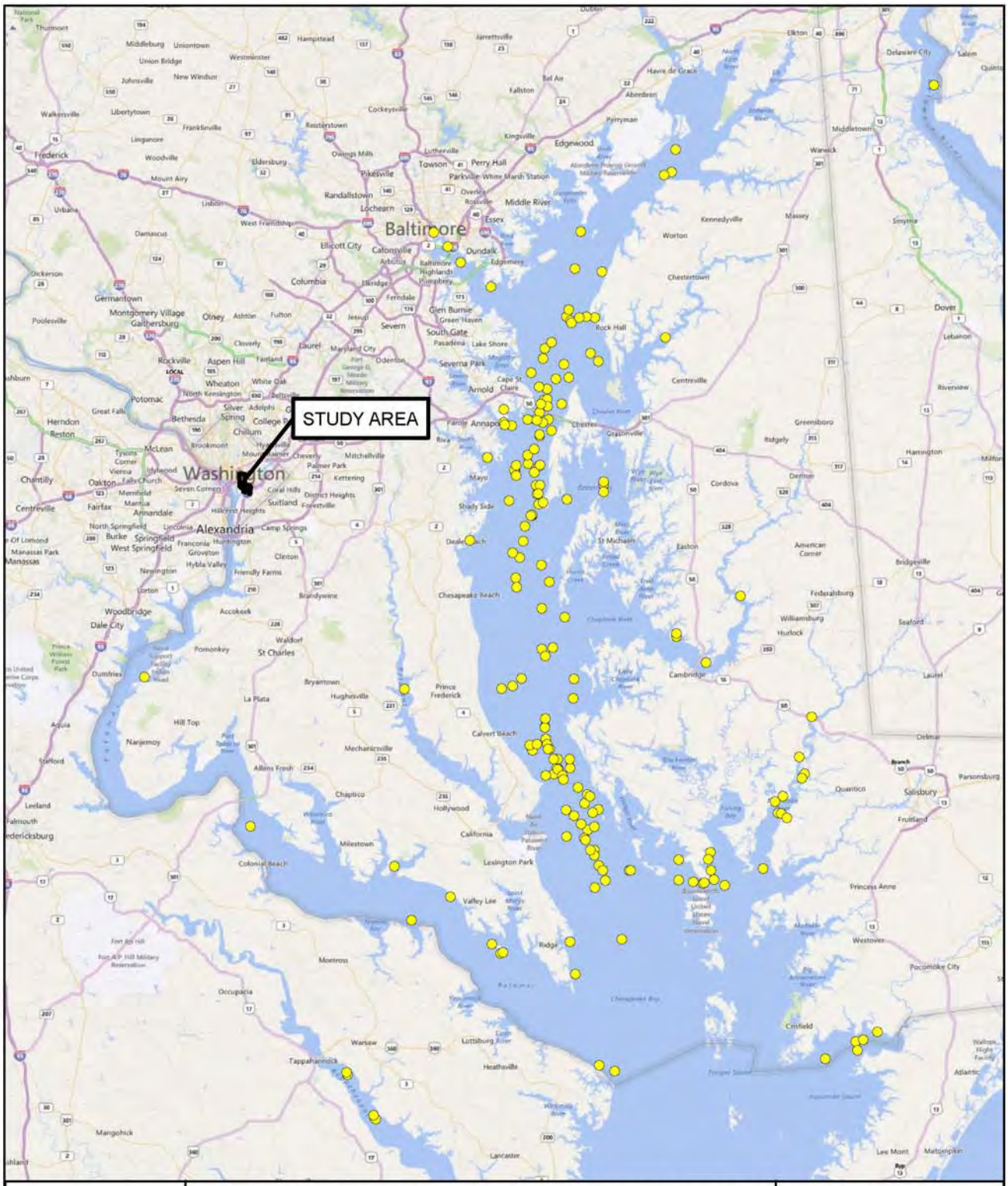


COASTAL RESOURCES INC.

FIGURE 5: CAPTURE LOCATIONS OF WILD ATLANTIC STURGEON (1996-2012)

SOUTH CAPITOL STREET PROJECT
WASHINGTON D.C.

OCTOBER 2013



COASTAL RESOURCES INC.

FIGURE 6: CAPTURE LOCATIONS OF HATCHERY-REARED WILD ATLANTIC STURGEON (1996-2012)

SOUTH CAPITOL STREET PROJECT
WASHINGTON D.C.

OCTOBER 2013

Dredging operations pose significant threats to Atlantic sturgeon habitat through the disturbance of bottom sediments, removal of spawning substrates, and disruption of macroinvertebrate communities (ASSRT 2007). In a study in the St. Lawrence River in Canada, Atlantic sturgeon avoided areas of dredged sediment dumping (McQuinn and Nellis 2007). Hydraulic dredging operations have also been shown to directly cause mortality of Atlantic sturgeon (ASSRT 2007).

Poor water quality is thought to contribute to the slow recovery of Atlantic sturgeon within the Chesapeake Bay (ASSRT 2007). In a study within the Chesapeake Bay, low Atlantic sturgeon abundance was correlated with decreasing water quality resulting from increased nutrient loading and increased spatial and temporal frequencies of hypoxic (low DO and high temperature) conditions (Secor 1995, Niklitschek and Secor 2005). However, some evidence suggests that water quality has not degraded everywhere within the Chesapeake Bay to the point where sturgeon can no longer be supported. For example, captures of hatchery-reared Atlantic sturgeon in subsequent years following their 1996 release in the Nanticoke River indicated survival and growth rates that suggest the availability of suitable foraging habitat in the Bay (Secor et al. 2000, Welsh et al. 2002). Direct and indirect effects from these various sources can be avoided or minimized during bridge construction through the use of approved dredging techniques, cofferdams during in-stream construction, and adherence to approved stormwater management practices.

Habitat Suitability

Atlantic sturgeon throughout their range along the Atlantic Coast have similar life history strategies as shortnose sturgeon (Shepherd 2006), but tend to use saline waters more as adults compared to shortnose sturgeon (Smith 1985, Collins et al. 2000, Niklitschek and Secor 2010, Fernandes et al. 2010). Pre-spawning adults begin migrations in February in southern populations, April in the Chesapeake Bay and Delaware Bay populations, and May-June in the Gulf of Maine and Gulf of St. Lawrence populations (Smith 1985, Smith & Clungston 1997). Fall spawning has been documented in southern populations and recent evidence was presented by researchers from the Virginia Commonwealth University of fall spawning occurring within the James River in the Virginia portion of the Chesapeake Bay (Virginia Commonwealth University 2012). Spawning habitat is similar to that of shortnose sturgeon and is identified as hard substrates including rock, rubble, gravel (Smith 1985) that lies between the saltwater/freshwater interface and the fall line of large rivers (ASSRT 2007).

Foraging habitat of juvenile and subadult Atlantic sturgeon is typically within the freshwater/saltwater interface of tidal rivers (Collins et al. 2000, Secor et al. 2000, Guilbard et al. 2007, ASSRT 2007). Atlantic sturgeon are bottom feeders, consuming a wide variety of benthic prey. Prey items reported in the diet of Atlantic sturgeon include crustaceans, mollusks, amphipods, polychaete and oligochaete worms, insect larva, fish, and gastropods (ASSRT 2007, Guilbard et al. 2007). In the St. Lawrence River, young-of-year (YOY) Atlantic sturgeon were found to consume mostly gammarid amphipods, while juvenile and subadult sturgeon fed mainly on oligochaete worms (Guilbard et al. 2007). Other prey items consumed by subadults included small fish, mollusks, and insects (Guilbard et al. 2007). Gut contents of juvenile hatchery-reared Atlantic sturgeon released into the Chesapeake Bay and later recaptured through a fishery

dependent reward program, contained mostly annelid worms with lesser amounts of isopods, amphipods, chironomid larvae, and mysids (Secor et al. 2000).

The physical tolerances of Atlantic sturgeon also vary by life stage and range. As noted above, YOY typically remain in freshwater portions of rivers and juveniles and subadults occur in the saltwater/freshwater interface. Some subadults and most adults enter the marine environment outside the spawning period, and may undergo coastal migrations (Smith and Clungston 1997, Secor et al. 2000). Laboratory studies on juvenile Atlantic sturgeon have demonstrated lethal effects under hypoxic conditions (low DO and high temperature), with nearly 100 percent mortality of sturgeon exposed to water temperatures of 26° Celsius (C) and DO levels of 3 mg/L (Secor and Gunderson 1998). Another laboratory experiment documented behavioral responses of YOY Atlantic sturgeon to varying combinations of water temperature, salinity, and DO (Niklitschek and Secor 2010). Results of the study showed that YOY Atlantic sturgeon avoided hypoxic conditions (DO = 40% and water temperatures of 28°C) and preferred salinities of 8‰. These laboratory data showed agreement with inferred habitat preferences of juvenile Atlantic sturgeon captured in the wild (Niklitschek and Secor 2010).

Potential Occurrence

The Atlantic sturgeon is not known to occur within the project study area. As described above, of the 1,590 wild and 463 hatchery-reared juvenile Atlantic sturgeon captures in the Chesapeake Bay, only 11 wild and one hatchery-reared sturgeon were captured in the Potomac River above the Harry Nice Bridge crossing of US 301. All but a few of the captures was within mesohaline waters and no captures occurred within tidal freshwater areas.

Based on this life-history information and knowledge of the habitat conditions within the Anacostia River, some assumptions can begin to be made as to the likelihood that Atlantic sturgeon would be within or passing through the South Capitol Street/FDMB project area at any given time of the year. The Anacostia River and its tributaries generally lack suitable spawning areas for sturgeon, reducing the likelihood that Atlantic sturgeon are moving up the Anacostia River to spawn. Lack of spawning Atlantic sturgeon would also eliminate the possibility of YOY moving back downstream through the project area. Therefore, the only likely scenario for Atlantic sturgeon to be present within the Anacostia River would be juvenile fish seeking suitable foraging habitat.

A benthic macroinvertebrate sampling effort was conducted in a 2005 study within the Anacostia River, just upriver from the FDMB. The most commonly encountered macroinvertebrate species collected included oligochaete worms, gastrapod snails, pelecypod clams, and chironomid midge flies (Horne Engineering Services 2005). Worms and midge flies were the only taxa found within all sample locations. As described above, no SAV habitat exists within the tidal portions of the Anacostia River, further indicating poor foraging habitat conditions. These results suggest that suitable prey for juvenile sturgeon exists within the Anacostia River, though quantities of available macroinvertebrates and area of suitable foraging habitat may be low.

Water quality parameters in the Anacostia River likely do not limit the potential for Atlantic sturgeon to be present within the project study area. As presented in the Existing Conditions

section, mean historic DO levels during the summer months (June, July, and August) are over 4.3 mg/L, though the most recent data from 2012 had a reading in August of just under 3 mg/L. Water temperature also generally falls within the acceptable range for Atlantic sturgeon except for the warmest periods during summer months. However, Atlantic sturgeon would likely seek out deeper water refuges in summer to avoid thermal and anoxic stress. Water depths at the FDMB exceed 20 feet in the deepest part of the channel. These deeper channel areas could be used by juvenile Atlantic sturgeon during stressful summer water quality conditions.

Based on available scientific data and the general lack of suitable spawning and foraging habitat for Atlantic sturgeon in the Anacostia River, it is unlikely that these fish would be found within the action area of the South Capitol Street/FDMB project during any time of the year.

Conservation Measures

Bridge Demolition

Demolition of the old FDMB will be accomplished using non-blasting techniques such as diamond wire sawing, expandable epoxy, or hydraulic splitting. These non-blasting techniques were recommended by the NMFS for the WWB (PCC 2000). During bridge demolition and bridge construction, no dredging will be required, further reducing the potential disturbance to stray Atlantic sturgeon in the Anacostia River.

Technical Impact Reduction Techniques

These are techniques that can be used to reduce the pressure wave from pile driving or to repel potentially impacted fish from the immediate area. Impact reduction techniques such as scare charges, physical barriers (e.g., cofferdams), and bubble curtains described in the BAs for the WWB (PCC 2000, 2003) will be used to mitigate potential impacts from pile driving during construction of this project. Turbidity curtains may also be used around pier construction to provide a physical barrier between pile driving activities and fish. These curtains would also act to contain suspended solids from leaving the construction site.

Cofferdams will be the likely technique used to reduce the shock wave from pier construction on this project. However, as was discovered during construction of the WWB, shock waves resulting in fish kills are still possible depending upon the force of the pile driving, depth of the water, substrate, and size of the piles (PCC 2003). If piles larger than 66 inches in diameter will be needed for construction of the FDMB, then consideration will be given to using cofferdams in conjunction with bubble curtains to reduce shock waves in the surrounding water to below six pounds per square inch (PSI), the cutoff pressure at which the WWB noted fish kills.

Analysis of Effects on Atlantic Sturgeon

Direct and Indirect Effects

Direct effects of the project on Atlantic sturgeon seem unlikely since the likelihood of sturgeon being present in the action area is extremely low. As indicated above, the availability of foraging and spawning habitat for adults is absent from the Anacostia River. While extremely unlikely, the possible occurrence of Atlantic sturgeon in the action area is from transient adults that may wander into the Anacostia River from the Potomac River during spring (March 1 through April 30) spawning runs. To reduce the chances of impacts to sturgeon during this time period, conservation measures outlined above, including the use of cofferdams and avoidance of underwater blasting techniques and dredging, will further reduce the possibility for direct impacts to Atlantic sturgeon.

The secondary impacts to sturgeon that could occur from degradation of water quality during demolition and construction will also be reduced through use of the conservation measures described above. For this reason, the project is not expected to have negative effects on water quality. Likewise, the project is not expected to affect Atlantic sturgeon habitat, as habitat is not available within the Action Area.

Cumulative Effects

No other non-federal projects along the Anacostia River are known at this time.

Conclusions

The South Capitol Street project will include replacement of the FDMB over the Anacostia River. The replacement bridge would be aligned slightly downstream from the existing bridge. The Revised Preferred Alternative proposes a fixed span bridge with a 42-foot clearance for boat traffic, and would likely be built using four piers. The existing FDMB would also be demolished.

For the construction of the new bridge, it is anticipated that dredging would not be required and the new pier construction would likely occur within cofferdams. Bridge demolition would likely occur by first removing the pavement and deck, followed by the superstructure. Demolition would incorporate non-blasting techniques.

There are no known records of the Atlantic sturgeon within the Anacostia River. The nearest record of Atlantic sturgeon within the Potomac River is downstream of Indian Head. Habitat for Atlantic sturgeon in the Anacostia River is much poorer than in the Potomac River. The likely possible occurrence of Atlantic sturgeon in the Anacostia River would be transients during spawning runs between March 1 and April 30.

Conservation measures will be incorporated into the bridge construction and demolition of the old bridge to minimize potential impacts to sturgeon and other fishes. These measures will include techniques used by the WWB Project (use of bubble curtains) to reduce potential impacts to sturgeon and other fishes from shock waves associated with pile driving, cofferdam installation, and bridge demolition.

Determination of Effect

FHWA has determined, based on the best available scientific and commercial data and professional judgment, that the construction of the FDMB, as part of the South Capitol Street project, is not likely to adversely affect the federally listed endangered Atlantic sturgeon based on discountable effects.

References

ASSRT. 2007. Status Review of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). Report to the National Marine Fisheries Service (NMFS), Northeast Regional Office, Glouchester, MA. 174 pp.

Bain, M.B. 1997. Atlantic and Shortnose sturgeons of the Hudson River: common and divergent life history attributes. *Environmental Biology of Fishes.* Vol. 48. pp. 347-358.

Brundage, H.M. and O'Herron, J.C. 2009. Investigations of juvenile shortnose and Atlantic sturgeons in the lower tidal Delaware River. *Bulletin of the New Jersey Academy of Science*. Vol. 54. No. 2. pp. 1-8.

CH2M HILL. 2006. *Potential Impacts to Shortnose Sturgeon, 11th Street Bridge Project, Washington, D.C.* Prepared for the National Marine Fisheries Service, Northeast Region. 20pp.

Collins, M.R., S.G. Rogers, T.I.J. Smith, M.L. Moser. 2000. Primary Factors Affecting Sturgeon Populations in the Southeastern United States: Fishing mortality and degradation of essential habitats. *Bulletin of Marine Science.* Vol. 66. No. 3. pp. 917-928.

District of Columbia Department of Environment, District Rivers Monitoring Program. Water quality monitoring results for the Anacostia River South Capitol Street at Nationals Stadium sampling station available online at: http://green.dc.gov/service/anacostia-and-potomac-river-monitoring-program. Accessed September 2013.

DDOE, Natural Resource Administration, Fisheries & Wildlife Management Division. 2013. 2012 Submerged Aquatic Vegetation Survey of the Potomac and Anacostia Rivers within the District of Columbia. 50pp.

Fernandes, S.J., G.B. Zydlewski, J.D. Zydlewski, G.S. Wippelhauser, M.T. Kinnison. 2010. Seasonal Distribution and Movements of Shortnose Sturgeon and Atlantic Sturgeon in the Penobscot River Estuary, Maine. *Transactions of the American Fisheries Society.* Vol. 139. pp. 1436-1439.

Gilbert, C.R. 1989. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Mid-Atlantic Bight)—Atlantic and Shortnose sturgeons. USFWS. Biological Report 82(11.122). United States Army Corps of Engineers. Report No. TR EL-82-4. 28 pp.

Guilbard, F., J. Munro, P. Dumont, D. Hatin, R. Fortin. 2007. Feeding ecology of Atlantic sturgeon and lake sturgeon co-occuring in the St. Lawrence estuarine transition zone. Pages 85–104 in J. Munro, D. Hatin, J.E. Hightower, K. McKown, K.J. Sulak, A.W. Kahnle, and F. Caron, editors. *Anadromous sturgeons: habitats, threats, and management*. American Fisheries Society, Symposium 56. Bethesda, MD.

Horne Engineering Services, Inc. 2005. *Draft Benthic Survey Report Anacostia River, Washington, D.C.* Prepared for the Hazardous Substance Research Center South and Southwest, Louisiana State University, Baton Rouge, Louisiana. 12pp.

King, T.L., B.A. Lupinski, A.P. Spidle. 2001. Microsatellite DNA variation in Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) and cross-species amplification in the Acipenseridae. *Conservation Genetics.* Vol. 2. pp. 103-119.

Mangold, M. USFWS. Personal communication. January 7th & 9th, 2013.

Mangold, M., S. Eyler, S. Minkkinen, B. Richardson. 2007. Atlantic Sturgeon Reward Program for Maryland Waters of the Chesapeake Bay and Tributaries 1996-2006. USFWS, Maryland Fishery Resources Office, Annapolis, MD.

McQuinn, I.H. & Nellis, P. 2007. An Acoustic-Trawl Survey of Middle St. Lawrence Estuary Demersal Fishes to Investigate the Effects of Dredged Sediment Disposal on Atlantic Sturgeon and Lake Sturgeon Distribution. Pages 257–271 in J. Munro, D. Hatin, J. Hightower, K. McKown, K. J. Sulak, A. W. Kahnle, and F. Caron, editors. *Anadromous sturgeons: habitats, threats, and management*. American Fisheries Society, Symposium 56. Bethesda, MD.

Murdy, E.O., R.S. Birdsong, J.A. Musick. 1997. Fishes of Chesapeake Bay. *Smithsonian Institution Press.* Washington, D.C.

Niklitschek, E.J. & Secor, D.H. 2005. Modeling spatial and temporal variation of suitable nursery habitats for Atlantic sturgeon in the Chesapeake Bay. *Estuarine, Coastal and Shelf Science*. Vol. 64. pp. 135-148.

Niklitschek, E.J. & Secor, D.H. 2010. Experimental and field evidence of behavioural habitat selection by juvenile Atlantic *Acipenser oxyrinchus oxyrinchus* and shortnose *Acipenser brevirostrum* sturgeons. *Journal of Fish Biology.* Vol. 77. pp. 1293-1308.

Phelps, H.L. 1985. *Summer 1984 Survey of Mollusc Populations of the Potomac and Anacostia Rivers near Washington, D.C.* Report to D.C. Environmental Services. 67pp.

PCC. 2003. *Supplemental Shortnose Sturgeon Biological Assessment, Woodrow Wilson Bridge Project*. Prepared for the United States Federal Highway Administration. 18pp. plus Appendices.

PCC. 2000. *Shortnose Sturgeon Biological Assessment, Woodrow Wilson Bridge Project*. Prepared for the U. S. Federal Highway Administration. 42pp.

Richmond, A.M. and B. Kynard. 1995. Ontogenetic behavior of shortnose sturgeon, *Acipenser brevirostrum*. *Copeia* 1995(1):172-182.

Ryan, D. 2013. Personal communication 27 August 2013.

Secor, D.H. 1995. Chesapeake Bay Atlantic Sturgeon: current status and future recovery. Chesapeake Biological Laboratory. Solomons, MD. 11 pp.

Secor, D.H. & Gunderson, T.E. 1998. Effects of hypoxia and temperature on survival, growth, and respiration of juvenile Atlantic sturgeon, *Acipenser oxyrinchus*. *Fishery Bulletin*. Vol. 96. pp. 603-613. NMFS Publications Office. Seattle, WA.

Secor, D.H., E.J. Niklitschek, J.T. Stevenson, T.E. Gunderson, S.P. Minkkinen, B. Richardson, B. Florence, M. Mangold, J. Skjeveland, A. Henderson-Arzapalo. 2000. Dispersal and growth of yearling Atlantic sturgeon, *Acipenser oxyrinchus*, released into Chesapeake Bay. *Fishery Bulletin*. Vol. 98. No. 4. pp. 800-810. NMFS Scientific Publications Office. Seattle, WA.

Shepherd, G. 2006. Status of Fishery Resources off the Northeastern U.S. – Atlantic and Shortnose Sturgeons. NOAA, Northeast Fisheries Science Center. Available online at: http://www.nefsc.noaa.gov/sos/spsyn/ af/sturgeon/. Accessed January 2013.

Smith, T.I.J. 1985. The fishery, biology, and management of Atlantic sturgeon, *Acipenser oxyrhynchus*, in North America. *Environmental Biology of Fishes*. Vol. 14. No. 1. pp. 61-72.

Smith, T.I.J. & Clugston, J.P. 1997. Status and management of Atlantic sturgeon, *Acipenser oxyrinchus*, in North America. *Environmental Biology of Fishes*. Vol. 48. Pp. 335-346.

USFWS. 2013. Unpublished data provided by M. Mangold on 9 January 2013.

Velinsky, D. and J. Ashley. 2001. *Spatial Distribution of Sediment-bound Contaminants in the Anacostia River, District of Columbia*. Report to Water Quality Division, Environmental Health Administration, Department of Health, District of Columbia. 4pp.

Virginia Commonwealth University (2012, October 12). Fall spawning by Atlantic sturgeon in Virginia river. *ScienceDaily*. Retrieved September 2013.

Virginia Institute of Marine Science. 2012. Submerged Aquatic Vegetation (SAV) in Chesapeake Bay and Delmarva Peninsula Coastal Bays: Interactive Map. Available online at: http://web.vims.edu/bio/sav/. Accessed September 2013.

Welsh, S.A., S.M. Eyler, M.F. Mangold, A.J. Spells. 2002. Capture Locations and Growth Rates of Atlantic Sturgeon in the Chesapeake Bay. Pages 183–194 in W. Van Winkle, P. J. Anders, D. H. Secor, and D. A. Dixon, editors. *Biology, management, and protection of North American sturgeon*. American Fisheries Society, Symposium 28. Bethesda, MD.

APPENDIX A

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Habitat Conservation Division
904 South Morris Street
Oxford, Maryland 21654

July 7, 2005

Bridgette Grillo
Coastal Resources, Inc.
2988 Solomons Island Road
Edgewater, Maryland 21037

Dear Ms. Grillo:

This concerns your request for National Marine Fisheries Service (NMFS) comments on the proposed improvements to South Capitol Street, and replacement of the Frederick Douglass Memorial Bridge in southeast and southwest Washington, D.C. Our staff was unable to attend the June 8, 2005 meeting at the Reeves Municipal Building in D.C. because of a schedule conflict. However, our office does cover D.C., and we do have resource concerns with this proposal.

Our primary concerns will pertain to the replacement of the Douglass Memorial Bridge crossing of the Anacostia River. The lower Anacostia River is a documented spawning ground and migratory corridor for several species of anadromous fish, including alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), hickory shad (*Alosa mediocris*), and white perch (*Morone americana*) (O'Dell et al., 1975). These species are annually present in the lower Anacostia River during the period of early March to mid-June. Bridge replacement will require activities that have the potential to disturb migrating adults and juveniles, and result in mortality of eggs and larvae. This project also could displace instream and riparian habitats that are critical to the life cycles of these species. We recommend that the proposed Environmental Impact Statement (EIS) address the following issues pertaining to the proposed bridge replacement.

1. The EIS should document whether sensitive instream and riparian habitats occur in the vicinity of the existing bridge, and in areas where a replacement bridge may be constructed. For example, beds of submerged aquatic vegetation (SAV) have been documented by the Virginia Institute of Marine Science (VIMS) aerial SAV surveys in the lower Anacostia River back to the early 1990s. While the VIMS surveys demonstrate the potential occurrence of SAV in the crossing area, only ground truth surveys can accurately determine whether this habitat type will be at risk from project activities. Therefore, spring and summer SAV surveys should be made of the river where project activities are likely to occur. Surveys should be conducted by personnel with relevant experience, and focus on SAV distribution, crown cover or density, SAV species, and local bathymetry. Data from the surveys should be transferred to maps presented in the EIS, which show SAV distribution relative to the existing bridge and replacement bridge alignments.

   The EIS should also document habitat types that occur in the riparian zone of the project area, and whether important species types, such as native trees and shrubs and fringe marsh, are present.

2. If the replacement bridge will be situated on an alignment that differs from that of the existing bridge, the EIS should investigate alternative alignments that will avoid or minimize impacts to sensitive instream and riparian habitats. Alternative alignments that avoid crossing areas where SAV beds and/or riparian vegetation is most extensive (i.e., where shading impacts and direct displacement of vegetation will be greatest) should be included in the analysis. Also, a bridge design should be selected that will minimize the number of instream piers.

3. The EIS should address measures that can be taken during construction within instream and riparian areas that will minimize impacts to anadromous fish and important aquatic habitats. Types of construction activities that are of primary concern include:

a) Actions that re-suspend fine-grain sediments into the water column, such as dredging, piling and cofferdam removal from the sediment, tug/barge abrasion of bottom sediments, jetting of structures into position, and flushing of sediments and other contaminants into the waterway from construction vessels.

b) Actions that produce heavy underwater shock waves, such as subaqueous blasting (i.e., should the existing bridge be demolished), and driving of large pilings into position, which kill and injure finfish.

c) Actions that permit erosion of soil and/or stock-piled materials into the waterway.

d) Blockage of the waterway (i.e., by temporary structures, vessels, etc.) that inhibits movements of instream fauna.

e) Unnecessary removal or damaging of large trees that provide shade for the waterway.

The following are measures that should be investigated for avoiding/minimizing impacts from the above actions.

a) Restricting instream work, including demolition activities to the period of October 16 through February 15, of any year, to protect anadromous fish migratory, spawning and nursery activities (February 15 - June 15), and SAV during the period optimal for its growth and reproduction (April 15 – October 15).

b) Use of measures that will mitigate the pressure level and carrying distance of underwater shock waves generated by pile driving and subaqueous blasting.

c) Best Management Practices

d) Limiting the presence of structures and/or vessels that may block instream fauna movements to less than ½ the width of the waterway at any time.

e) Marking and buffering (from construction activities) important riparian shade trees.

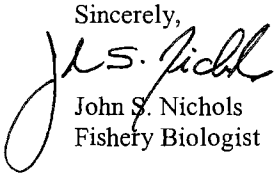
f) Properly disposing of cleanings (from equipment, vessels, structures removed from sediments) at an upland location.

Protected Resources Issues

NMFS has determined that the endangered shortnose sturgeon (*Acipenser brevirostrum*) is present in the upper tidal Potomac River. Consequently, individuals of this species may occur in the lower Anacostia River. We, therefore, recommend that you contact Sara McNulty of our Protected Resources Division staff in Gloucester, MA; (978) 281-9328, ext. 6520; to determine your requirements for Section 7 Consultation under the Endangered Species Act.

If you have any questions, or additional information needs, please contact me at (410) 226-5606, or John.Nichols@NOAA.GOV.

Sincerely,



John S. Nichols
Fishery Biologist

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

FEB 20 2007

Mark Kehrli
US Department of Transportation
Federal Highway Administration
District of Columbia Division
1990 K Street NW, Suite 510
Washington, DC 20006-1103

Re: HAD-DC

Dear Mr. Kehrli,

This is in response to your letter dated December 6, 2006 requesting consultation pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, as amended, regarding the South Capitol Street/Frederick Douglas Memorial Bridge Project. The District of Columbia's Department of Transportation (DC DOT) in cooperation with the Federal Highway Administration (FHWA) proposes to replace the Frederick Douglas Memorial Bridge which crosses the Anacostia River. This bridge is located approximately 1.3 river miles from the confluence of the river with the Potomac River.

The federally endangered shortnose sturgeon (*Acipenser brevirostrum*) is known to be present in the Chesapeake Bay. During the 1996-2005 time period, the incidental capture of seventy-two different shortnose sturgeon in the Chesapeake Bay and its tributaries had been reported via the US Fish and Wildlife Service Atlantic sturgeon reward program. This number includes eight shortnose sturgeon captured incidentally in fishing gear in the Potomac River. Additionally, researchers conducting a survey for shortnose sturgeon in the river captured one mature egg bearing female in September 2005 and an additional mature egg bearing female in the same location in March 2006. Both fish have been outfitted with sonic tags and are being actively tracked by researchers. Information available to date indicates that these fish have remained within the Potomac River since they were tagged. The female caught in September overwintered in the Potomac River near Mattawoman Creek. One of the females was documented at the presumed spawning grounds near Little Falls in the spring of 2006. The occurrence of pre-spawning females in the Potomac River suggests that a spawning population of shortnose sturgeon continues to exist in this river system. No shortnose sturgeon have been documented in the Anacostia River. However, shortnose sturgeon in other river systems have been documented foraging in tributaries to the mainstem river and if suitable habitat and forage items exist, shortnose sturgeon may be present in the Anacostia River.

The confluence of the Anacostia River with the Potomac River is located approximately 9 miles downstream of the Little Falls Dam and approximately 25 miles upstream of the location where the two female shortnose sturgeon have spent most of their time since being tagged (near the mouth of Mattawoman Creek). Although the population dynamics and migration patterns of shortnose sturgeon in the Potomac River have not been documented, based on patterns of habitat usage in other river systems, NMFS believes that the region of the river where the Anacostia River is located is used as a migratory pathway for adult shortnose sturgeon traveling to and from upstream spawning grounds. As such, shortnose sturgeon may be present in this area of the Potomac River in the spring and early summer. As noted above, shortnose sturgeon have not been documented in the Anacostia River. However, if suitable habitat and forage are present, occasional transient shortnose sturgeon may occur within the Anacostia. Shortnose sturgeon eggs are demersal and are concentrated at the spawning grounds and would not occur in the Anacostia River. Shortnose sturgeon larvae are typically found in the channel and while this life stage may enter the tidal Potomac and swim or drift past the mouth of the Anacostia, individuals are likely to be restricted to the deepwater channel in the Potomac and are not likely to occur in the Anacostia River.

The proposed project involves the replacement of a bridge over the Anacostia River. The new bridge will be located just downstream of the existing bridge. The new bridge will consist of a moveable span over the existing Federal navigation channel and will consist of at least six travel lanes centrally divided by a raised median or a low barrier wall. Construction of the bridge will be from barges. Construction will involve the driving of steel H piles and pipe pilings or installing concrete pilings in drilled shafts. The existing bridge decks will be demolished by removing the bridge in pieces and placing debris on barges. Debris will be disposed of at an upland location. The information provided by FHWA indicates that underwater blasting is unlikely; however, if it is required it will be done within a cofferdam and blasting design techniques (such as varying charge weights, charge delays and stemming) will be used to mitigate potential impacts from underwater blasting. Construction work, including pile driving, will take place within dewatered cofferdams or will employ an air bubble curtain system to minimize the potential for effects to aquatic life from the sound waves associated with pile driving. Additionally, FHWA has indicated that no in-stream construction work (excluding work within previously installed coffer dams) will occur between February 15 and July 1 of any year.

Despite an extensive sampling program in the Anacostia River which has occurred between February and November every year since 1991, no shortnose sturgeon have been documented in this river. The information provided by FHWA included an assessment of habitat suitability for shortnose sturgeon. The Anacostia River is largely a degraded system with a disturbed benthic community providing little to no suitable sturgeon forage items. There is also no habitat within the Anacostia River that could be considered suitable shortnose sturgeon spawning habitat. The river also does not have any deep holes which would be used by shortnose sturgeon for overwintering, resting, or as thermal refugia in the summer months. Shortnose sturgeon use of the river is likely further precluded by low dissolved oxygen levels in the river during the summer. Based on the best available information, it is unlikely that shortnose sturgeon use the Anacostia River for foraging, overwintering or spawning. While an occasional transient shortnose sturgeon may be present near the confluence of the river with the Potomac River,

sturgeon presence in the Anacostia River is likely to be rare. These transients would most likely be adult shortnose sturgeon migrating past the mouth of the Anacostia river while traveling to and from the spawning grounds near Little Falls. The spawning migration likely occurs between March and June.

Shortnose sturgeon are vulnerable to the impacts of in-water construction activities such as dredging and pile-driving. However, as only rare transient shortnose sturgeon are likely to be in the action area for this project, and in-water work will be prohibited during the time period that any shortnose sturgeon would be in the area, the likelihood of impacts to shortnose sturgeon from any activity associated with this project is discountable.

Based on the analysis that all effects of the proposed project, if adverse, will be discountable, NMFS is able to concur with the determination that the replacement of the Frederick Douglass Memorial Bridge over the Anacostia River is not likely to adversely affect any listed species under NMFS jurisdiction. Therefore, no further consultation pursuant to section 7 of the ESA is required. Should project plans change or new information become available that changes the basis for this determination, or a new species be listed or critical habitat designated, consultation should be reinitiated. Should you have any questions about this correspondence please contact Julie Crocker at (978) 281-9300 ext. 6530.

Sincerely,

Patricia A. Kurkul
Regional Administrator

Cc: Scida, F/NER3
Nichols, F/NER4 – Annapolis
Williams, GCNE
Brown, Parsons Brinckerhoff

File Code: Sec 7 FHWA DC DOT Frederick Douglas Memorial Bridge
PCTS I/NER/2007/00569

Heather Tatone

From: Christine Vaccaro - NOAA Federal [christine.vaccaro@noaa.gov]
Sent: Friday, August 16, 2013 2:37 PM
To: Derek Rodgers
Cc: Heather Speargas
Subject: Re: South Capitol Street project

Hi Derek,

Is this bridge crossing the Anacostia River?

As far as a BA goes, you should update your analyses to include Atlantic sturgeon. Because of the listing you must consider both shortnose and Atlantic sturgeon at this point for any projects that may affect listed species. Although these species are similar, there are some differences and both should be analyzed.

-Chris

Chris Vaccaro
Fisheries Biologist
Protected Resources Division
NOAA Fisheries/NERO

Gloucester, MA
Phone: 978-281-9167
Email: christine.vaccaro@noaa.gov

On Fri, Aug 16, 2013 at 2:32 PM, Derek Rodgers <derekr@coastal-resources.net> wrote:

Christine-

My name is Derek Rodgers, and I'm currently coordinating with various regulatory agencies regarding RTE species presence and potential impacts for a bridge project in Washington D.C. (South Capitol Street). A colleague of mine, David Smith, recently contacted you about shortnose and Atlantic sturgeon for the MD 261 bridge project. He pointed me in your direction since my point of contact for the aforementioned project, Julie Crocker, is currently on vacation and won't return until August 27th. I had planned on asking her whether a biological assessment would be required for the Atlantic sturgeon at this time, since a BA had already been completed for the shortnose several years ago and no impacts were expected to result from the project. When the BA was submitted, the Atlantic sturgeon had not yet been listed. Do you know if NMFS will accept the original shortnose sturgeon BA as a surrogate for the Atlantic sturgeon? If not, do you know of anyone I could contact about this issue?

Thanks in advance for your time.

Regards,

Derek Rodgers | *Environmental Scientist*

derekr@coastal-resources.net

office: (410) 956-9000, ext. 132

direct: (443)-837-2283

cell: (443) 386-1149

Coastal Resources Inc.

Ecological Consultants

25 Old Solomons Road

Annapolis, Maryland 21401

THIS PAGE INTENTIONALLY LEFT BLANK.