

PENNSYLVANIA AVE-MINNESOTA AVE, S.E., INTERSECTION IMPROVEMENT PROJECT ENVIRONMENTAL ASSESSMENT



OCTOBER 2013



ENVIRONMENTAL ASSESSMENT

FOR THE

PENNSYLVANIA AVE-MINNESOTA AVE, S.E.

INTERSECTION IMPROVEMENT

WASHINGTON, DC

Prepared pursuant to 42 U.S.C. 4332(2)(c) by:
U.S. Department of Transportation
Federal Highway Administration
District Department of Transportation

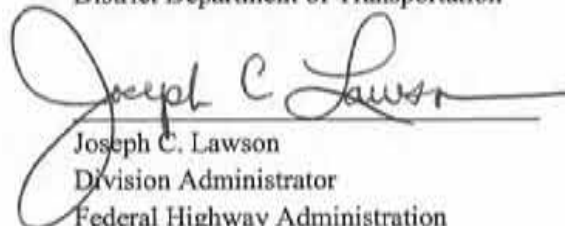
in cooperation with
National Park Service
National Capital Planning Commission

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for Terry Bellamy
Director
District Department of Transportation



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Division Administrator
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EXECUTIVE SUMMARY

ES.1. Preface

The Federal Highway Administration (FHWA) in conjunction with the District Department of Transportation (DDOT) is proposing improvements to the Pennsylvania Avenue, SE and Minnesota Avenue, SE intersection. This action would also include the transfer of land from the National Park Service (NPS) to DDOT. The land transfer would facilitate the proposed reconfiguration of this intersection, also known as the “Twining Square” area in Southeast Washington, DC. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) and implementing regulations, the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500-1508), the FHWA’s *Environmental Impact and Related Procedures* (23 CFR 771), FHWA *Technical Advisory Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (T6640.8A), NPS *Director’s Order #12: Conservation Planning, Environmental Impact Analysis, and Decision-making (DO-12)* and DDOT’s *Environmental Policy and Process Manual*.

The Proposed Action includes modifications to the intersection to improve safety, mobility, and connectivity for pedestrians and motorists. A land transfer from NPS to DDOT would be necessary, pending National Capital Planning Commission (NCPC) approval, to carry out the proposed intersection improvements.

ES.2. Purpose and Need

The purpose of the Proposed Action is to provide transportation improvements to the Pennsylvania and Minnesota Avenues, SE intersection in keeping with the District of Columbia’s Great Streets Initiative as set forth in the 2007 *Great Streets Framework Plan* and the 2007 *Revitalization of Pennsylvania Avenue, SE for the Great Streets Initiative Concepts Design Final Report (Great Streets Design Final Report)*.

The project needs consist of the following:

- Improve pedestrian and vehicular safety;
- Create a consolidated, usable park space;
- Improve multimodal connectivity and access; and
- Support land use and community needs.

For additional information on the Great Streets Initiative principles, program goals, and applicability to the Study Area, see Section 1.3, Project Overview and *Appendix A*.

ES.3. Project Background

The Study Area is located at the western end of the Pennsylvania Avenue, SE Great Streets corridor at the intersection of Pennsylvania Avenue with Minnesota Avenue, SE, in the immediate vicinity of Twining Square, also referred to as L’Enfant Square in the *Great Streets Framework Plan*.

The Pennsylvania and Minnesota Avenues, SE intersection includes NPS property, U.S. Reservation 487 (Twining Square), which includes four small park parcels fragmented by intersecting roadways and the adjacent roadway medians, totaling approximately 1.4 acres. The roadways split the reservations into areas that effectively function as traffic islands for pedestrians while crossing the street; the pieces of parkland are too small to function as true open space or green space as currently configured. Twining Square lacks aesthetic appeal and is underutilized urban space.

As shown on Figure 1-2 in *Section 1, Purpose and Need*, the current intersection configuration is dominated by busy lanes of traffic, rendering pedestrian circulation both difficult and dangerous. The project intersection is located on a major commuter route, Pennsylvania Avenue, SE, in an urban environment, at its crossing with the local travel route of Minnesota Avenue, SE. The project intersection carries traffic to and from the bridges that cross the Anacostia River, as well as Minnesota Avenue, SE.

Proposed solutions to improve the intersection were developed as part of the *Great Streets Design Final Report*, which was developed as part of the District's Great Streets Initiative. The Great Streets Initiative was kicked off in 2005 as a multi-agency program that strategically uses public investments to improve local quality of life and attract private investments to communities. Several corridors were chosen to be a part of the Great Streets Initiative, including Pennsylvania Avenue, SE.

The program goals of the Great Streets Initiative are as follows:

1. Improve the quality of life in neighborhoods along the corridors, including public safety, physical appearance and personal opportunity;
2. Support local demand for goods and services through economic development;
3. Expand mobility choices and improve safety and efficiency of all modes of travel; and
4. Attract private investment through the demonstration of a public commitment to Great Street communities.

Three viable options, developed as part of a four-day design charrette held in July 2006 were developed to a concept level: (1) Modified Traffic Square Alternative, (2) Ellipse Alternative, and (3) Conventional Intersection Alternative. Traffic analysis was performed, and urban design concepts were developed and applied. The Modified Traffic Square Alternative was selected as the preferred alternative in the *Great Streets Framework Plan* because of its conformance with the Great Street Initiative goals.

ES.4. Alternatives

Multiple alternatives for the Pennsylvania and Minnesota Avenues, SE intersection were developed in accordance with the project objectives established to meet the project purpose and need. Three alternatives, including the No Build Alternative, are analyzed in detail in this EA.

i. No Build Alternative

Under the No Build Alternative, there would be no improvements to the project intersection and no land jurisdiction transfer from NPS to DDOT would occur. The intersection would continue to function as it does today. Existing traffic patterns, crosswalks, signalization, and sidewalks would remain unimproved.

While the No Build Alternative does not meet the purpose and need of the Proposed Action, it provides a basis for comparing the environmental consequences of the Build Alternatives.

ii. Proposed Action

The Proposed Action is to provide improvements to the Pennsylvania and Minnesota Avenues, SE intersection that includes a potential land transfer from NPS to DDOT. The land transfer would facilitate reconfiguration of the intersection to improve safety, mobility, and connectivity for pedestrians and motorists at the intersection in keeping with the District of Columbia's Great Streets Initiative. No private right-of-way would be impacted or acquired by the Proposed Action.

Build Alternative 1 – Revised Square Alternative

Under Build Alternative 1, the intersection would be improved to create a “traffic square” concept, which would require all vehicles, with the exception of through-movements on Pennsylvania Avenue, SE, to go around the expanded central park area. Build Alternative 1 would require a jurisdictional land transfer from NPS to DDOT of approximately 1.4 acres to enable the proposed modifications to the intersection and consolidate the green space. Build Alternative 1 would provide more contiguous park area for residents and visitors to the area to use and enjoy. The northern park area would total approximately one acre and the southern park area would total approximately 0.5 acres of contiguous park area.

Build Alternative 1 improves the roadway alignment and configuration to promote traffic-calming thereby improving safety for pedestrians and vehicles at the intersection. Under this alternative, the traffic signal configuration is simplified and the left-turning conflicts are removed. Pennsylvania Avenue, SE would bisect the center of the square, and turning movements would be directed around the perimeter of the “square.” This perimeter route acts to calm the traffic, similar to how a traffic circle works by allowing vehicles to enter and exit the square at locations identified by the intersecting streets. It would also reduce vehicular speeds by providing short, straight distances between tight radius turns, at the presumed four corners of the square.

Build Alternative 1 would reduce the interaction between pedestrians and vehicles, and would also improve the functionality of existing and new crosswalk facilities. The crosswalk alignments and refuge areas for pedestrians would be significantly enhanced; sidewalks and green space would be improved and green space frontage would be provided for local residences and businesses.

Build Alternative 1 would meet the purpose and need for the Proposed Action in promoting the principles set forth in the District's Great Streets Initiative. Build Alternative 1 would improve pedestrian and vehicular safety, create a usable park space, improve multimodal connectivity and access, and support land use and community needs.

Build Alternative 2 – Conventional Intersection Alternative

Under Build Alternative 2, the intersection would be redesigned into a typical at-grade intersection with all vehicle turning movements permitted for all approaches, with the exception of 25th Street, which would remain a one-way street going southbound. Build Alternative 2 would require a jurisdictional land transfer from NPS to DDOT of approximately 1.4 acres to enable the proposed modifications to the intersection and consolidate the green space. Build Alternative 2 would consolidate the two park parcels to the north of Pennsylvania Avenue and the two park parcels to the south of Pennsylvania in order to provide more contiguous park area for residents and visitors to use as green space. The northern park area would total approximately one acre and the southern park area would total approximately 0.4 acres of contiguous park area.

The Build Alternative 2 design would improve the existing split roadway system that currently contains two complex intersections by reducing multiple traffic movements into one signalized intersection. This alternative would provide for left-turn movements in all directions and increase the left-turn bay storage length for vehicles.

Build Alternative 2 has two options for the movement of one-way traffic to the north and west of the “square” on L’Enfant Square, SE. Either one-way movement would work operationally as follows:

Option 1) Traffic flows one-way to the west and south on L’Enfant Square SE. Commuter traffic could continue to cut-through the “square” to avoid the Pennsylvania/Minnesota Avenues, SE intersection and the right-turning vehicle/pedestrian conflict to the west of the square would remain; or

Option 2) Traffic flows one-way to the north and east on this roadway. Cut-through traffic would be minimized and the vehicle/pedestrian conflict would be reduced.

Build Alternative 2 would improve vehicle operations and reduce confusion at the complex intersection compared to the No Build Alternative. Because this alternative maintains the intersection as a typical intersection, the focus remains on moving vehicles through the intersection to their destinations. After careful consideration, the lead agencies decided to carry Build Alternative 2 forward in this EA.

ES.5. Construction and Staging

Construction staging areas would be selected to protect environmental resources, to meet the needs of the contractor based on the construction phasing plans, and to minimize disruptions and safety hazards for pedestrians, bicyclists and motorists who utilize the intersection. Appropriate advance notification of construction and construction phasing to ensure the safest and most logical detours around the road and sidewalk segments under construction would occur. Scheduling of construction would be conducted with adherence to Title 20 of the District of Columbia Code of Municipal Regulations (DCMR). It is estimated that construction would take approximately 18 to 24 months.

Adequate construction techniques, including use of BMPs and LID strategies, would be adhered to so as to minimize the potential for impacts to the surrounding environment. Construction impacts are discussed within the appropriate environmental categories in *Section 4, Environmental Consequences*.

ES.6. Cumulative Impacts

Cumulative effects would result from the Build Alternative impacts to Road Network and Traffic and Archaeological Resources.

From a regional context, the incremental impact on the roadway network and traffic due to the Build Alternatives would be negligible given the inevitable increase in traffic volume and congestion in the Study Area due to natural factors such as population growth and migration into the District and nearby suburbs. Additionally, with plans to implement Phase 3 of the D.C. Streetcar project through the Study Area (likely by 2030), the increased availability of public transit options may help lessen future traffic congestion in the Study Area. As a result, the Build Alternatives, when added to other past, present and foreseeable actions would have a negligible cumulative effect on the road network and traffic.

The incremental impact to archaeological resources is small given that the area where the potential to recover historic or prehistoric archaeological resources exists is limited to the southern reservation (approximately 0.06 acres) of the Study Area. Phase IB/II testing of this small area is recommended prior to final design decisions and construction of either of the Build Alternatives. Due to the small area recommended for further testing and provided that the conditions stated in the *Section 106 Review Form* for archaeology are followed (see *Appendix E*), the cumulative effect on archaeological resources due to past, present or future projects, is expected to be negligible.

The impacts of the Build Alternatives, when added to other past, present and future projects outlined in this EA, would result in a net benefit to vegetation, future land use, zoning, economics and development, aesthetic and visual quality, health and safety, parks and recreation areas, and the bicycle and transportation network.

The Build Alternatives would have no long-term cumulative impacts to geology, soils and topography, farmland, ground water, surface water, floodplains, water quality, wetlands, navigable waters, wild and scenic rivers, coastal zone, aquatic or terrestrial organisms, wildlife, historic structures, cultural landscapes, paleontology, zoning, demographics, environmental justice, joint development, emergency services, schools, utilities and infrastructure, Indian Trust resources, Sacred Sites and ethnographic resources, transit, air quality, noise, hazardous waste and materials, and energy conservation.

ES.7. Summary of Impacts

A comparison of impacts associated with the alternatives evaluated in this EA is summarized in **Table ES.1**.

Table ES.1
Summary of Impacts

Resource	No Build Alternative	Build Alternative 1	Build Alternative 2
<i>Natural Resources</i>			
Geology and Topography	No impact.	No impact; minor grading on already disturbed topography	
Soils	No impact.	Minor short-term adverse impacts from soil erosion during construction. Negligible long-term impacts.	
Farmland	No impact; no prime farmland soils within Study Area.	No impact; no prime farmland soils within Study Area.	
Ground Water	No impact to groundwater volume or quality.	Negligible short-term and long-term impacts; minimal net increase of pervious surface.	Negligible short-term and long-term impacts; minimal net decrease of pervious surface.
Surface Water	No impact.	No impact; no surface waters within Study Area.	
Floodplains	No impact; Study Area is not located within a floodplain.	No impact; Study Area is not located within a floodplain.	
Water Quality	No impact.	Minor short-term adverse impacts during construction due to potential release of sediments into stormwater runoff from soil disturbance. Negligible long-term impacts due to minimal net change in impervious surface area and distance to Anacostia River.	
Wetlands	No impact; no wetlands identified within project study area.	No impact; no wetlands identified within Study Area.	
Navigable Waters	No impact; no navigable waters present in project study area.	No impact; no navigable waters within Study Area (indirect impacts addressed under Water Quality).	
Wild and Scenic Rivers	No impact; no Wild and Scenic Rivers within project study area.	No impact; no Wild and Scenic Rivers within Study Area.	
Coastal Zone	No impact. The District does not have a designated Coastal Zone.	No impact; the District does not have a designated Coastal Zone.	
Aquatic Organisms	No impact.	No impact; no aquatic habitat within Study Area (indirect impacts addressed under Water Quality).	
Wildlife	No impact.	Negligible short-term impacts; impacts would be of short duration and well within natural fluctuations. Negligible long-term impacts due to the location of the site being entirely within previously disturbed and maintained landscapes.	
Rare, Threatened and Endangered Species	No impact.	No impact; no threatened or endangered species in Study Area.	
Vegetation	No impact.	Minor short-term adverse impacts during construction due to earth disturbance and potential impacts to several trees to accommodate design changes. Minor long-term benefit due to enhanced landscape and additional grass and tree cover.	
<i>Cultural Resources</i>			
Historic Structures	No impact.	Conditional No Adverse Effect.	Conditional No Adverse Effect.

Table ES.1
Summary of Impacts

Resource	No Build Alternative	Build Alternative 1	Build Alternative 2
Cultural Landscapes	No impact.	Any indirect effects, such as visual impacts to the landscape due to construction would be short-term and negligible with the use of BMPs. Long-term indirect effects would be negligible.	
Archaeology	No impact.	Conditional No Adverse Effect. Phase IB/II archaeological testing of an area in the southern reservation of intersection needed prior to final design and construction where an intact historic surface was identified during geoarchaeological survey.	
Paleontology	No impact.	No impact; no known paleontological resources exist in Study Area.	
<i>Socioeconomic Resources</i>			
Land Use	No impact.	Negligible short-term impacts may result from road closures during construction. Minor indirect long-term benefits to future land use.	Negligible short-term impacts may result from road closures during construction. Negligible long-term impacts.
Zoning	No impact.	No short-term impacts to zoning. Minor indirect long-term benefits to future zoning.	No short-term impacts to zoning. Negligible long-term impacts to future zoning.
Demographics	No impact.	Minor short-term adverse impacts due to road closures during construction. Minor long-term beneficial impacts due to enhanced safety for residents in the Study Area.	Minor short-term adverse impacts due to road closures during construction. Negligible long-term impacts.
Environmental Justice	No impact.	Negligible short-term and long-term impacts.	
Economics and Development	Minor negative indirect impact in long-term due to missed revitalization opportunity.	Minor short-term adverse impacts to residents and businesses due to temporary road closures. Indirect minor long-term beneficial impacts.	Minor short-term adverse impacts to residents and businesses due to temporary road closures. Negligible long-term impacts.
Joint Development	No impact.	No impact.	
Aesthetics and Visual Quality	No impact.	Minor short-term adverse visual impacts during construction. Long-term minor benefit to visual quality with more contiguous park area/ green space and new roadway infrastructure.	
Healthy and Safety	No direct impact. Long-term indirect impact due to existing safety issues remaining unresolved.	Negligible short-term impact while becoming familiar with new traffic patterns. Minor long-term benefits to vehicle and pedestrian safety at the intersection.	Negligible short-term impact while becoming familiar with new traffic patterns. Negligible long-term impact due to unresolved pedestrian safety issues.

Table ES.1
Summary of Impacts

Resource	No Build Alternative	Build Alternative 1	Build Alternative 2
Community Resources	No impact.	Minor short-term adverse impacts due to maintenance of traffic, temporary lane closures during construction. Indirect long-term benefit to students, school faculty, or those attending places of worship who may utilize the intersection due to improved safety for vehicles and pedestrians.	
Emergency Services	No impact.	Minor short-term adverse impacts due to maintenance of traffic, temporary lane closures during construction. Negligible impact in the long term.	
Parks and Recreation Areas	No direct impact. Minor long-term indirect impact as park area would remain fragmented and unusable as park or recreation area.	Minor short-term adverse impacts during construction. Long-term minor benefit due to providing more contiguous parkland to be used for passive recreational activity.	
Utilities and Infrastructure	No impact.	Minor short-term adverse impacts to utilities if it is determined that they must be relocated due to construction. Consultation with utility companies and more detailed survey needed as design development advances. Negligible impact in the long term after project implementation.	
Indian Trust Resources	No impact.	No impact; no known Indian Trust Resources exist in Study Area.	
Sacred Sites and Ethnographic Resources	No impact.	No impact; no known Sacred Sites and Ethnographic Resources exist in Study Area.	
Transportation			
Bicycle and Pedestrian Network	No impact.	Minor short-term adverse impacts due to temporary detours during construction. Moderate long-term beneficial impacts to local users and commuters through the area.	Minor short-term adverse impacts due to temporary detours during construction. Minor long-term beneficial impacts to local users and commuters through the area.
Roadway Network and Traffic	No short-term impact. Minor long-term adverse impacts; conditions expected to worsen due to anticipated increase in traffic volume by 2040.	Minor short-term adverse impacts due to temporary closures during construction; detours and maintenance of traffic will be provided. Minor adverse impacts in the long term due to increased queue lengths and travel time in 2040.	
Transit	No impact.	Minor short-term adverse impacts to WMATA bus service during construction and familiarization with new routes and bus stops. Long-term impacts would be negligible.	
<i>Air Quality</i>	No impact.	Short-term adverse impacts to air quality due to construction would be temporary and localized; BMPs will be used. Build Alternatives would not contribute to any violation of the NAAQS and meets the project level CO conformity requirements of 40 CFR 94.	

Table ES.1
Summary of Impacts

Resource	No Build Alternative	Build Alternative 1	Build Alternative 2
<i>Noise</i>	No short-term impacts. In the long term, due to the projected increase in traffic volume at this intersection, noise levels will increase by 2040 under the No Build Alternative.	Minor short-term adverse impacts during construction. 2040 design year build PM peak hour traffic would raise noise levels 0.2 to 3.1 dB. The same residences, park and daycare that would be exposed to noise levels that approach or exceed the NAC with the No Build, would also approach or exceed the NAC with either build alternative. It has been determined that noise mitigation is not feasible for this project.	
<i>Hazardous Waste and Materials</i>	No impact.	No impact.	
<i>Energy Conservation</i>	No impact.	No impact. Energy conserved through use of LID principles at project site.	
<i>Cost</i>	--	\$10,971,254	\$9,009,853

Source: HNTB Corporation, 2013.

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TABLE OF CONTENTS

	<u>Page</u>
1.0 PURPOSE AND NEED	1
1.1 Purpose of the Proposed Action	4
1.2 Needs for the Proposed Action.....	4
1.2.1 Improve Pedestrian and Vehicular Safety	4
1.2.2 Create a Consolidated, Usable Open Space	7
1.2.3 Improve Multimodal Connectivity and Access.....	9
1.2.4 Support Land Use and Community Needs.....	10
1.3 Project Overview	11
1.3.1 Background	11
1.3.2 Description of Study Area.....	13
1.4 Project Objectives.....	15
1.5 Design Considerations.....	15
1.6 Relationship to Other Plans and Studies	15
1.6.1 Comprehensive Plan for the National Capital.....	15
1.6.2 Pennsylvania Avenue, SE Transportation Study	16
1.6.3 Middle Anacostia River Crossing Transportation Study	16
1.6.4 Great Streets Framework Plan: Pennsylvania Avenue, SE	16
1.6.5 District of Columbia Bicycle Master Plan	17
1.6.6 Revitalization of Pennsylvania Avenue, SE for the Great Street Initiative Concept Design	17
1.6.7 Pennsylvania Avenue, SE Corridor Land Development Plan.....	18
1.6.8 District of Columbia Pedestrian Master Plan.....	18
1.6.9 Pennsylvania and Potomac Avenues, SE Intersection Improvements	18
1.6.10 Barney Circle and Southeast Boulevard Transportation Study.....	18
1.7 Impact Topics Dismissed from Further Analysis	18
1.7.1 Geology and Topography.....	18
1.7.2 Surface Water.....	19
1.7.3 Navigable Waters	20
1.7.4 Coastal Zone	20
1.7.5 Floodplains.....	20
1.7.6 Wetlands	20

1.7.7	Wild and Scenic Rivers.....	21
1.7.8	Aquatic Organisms.....	21
1.7.9	Threatened and Endangered Species.....	21
1.7.10	Paleontological Resources	21
1.7.11	Indian Trust Resources.....	22
1.7.12	Sacred Sites.....	22
1.7.13	Ethnographic Resources.....	22
1.7.14	Hazardous Waste/Materials	22
1.7.15	Energy Conservation.....	23
2.0	PROPOSED ACTION AND ALTERNATIVES.....	25
2.1	No Build Alternative	25
2.2	Proposed Action	25
2.2.1	Build Alternative 1 - Revised Square Alternative.....	27
2.2.2	Build Alternative 2 - Conventional Intersection Alternative	28
2.3	Alternatives Eliminated from Consideration.....	33
2.3.1	Modified Square Alternative.....	33
2.3.2	Ellipse Alternative.....	33
2.4	Construction and Staging	34
3.0	AFFECTED ENVIRONMENT	35
3.1	Natural Resources.....	35
3.1.1	Soils.....	35
3.1.2	Water Resources	37
3.1.3	Wildlife	38
3.1.4	Vegetation	38
3.2	Cultural Resources	39
3.2.1	Historical Context	39
3.2.2	Historic Structures.....	41
3.2.3	Cultural Landscapes.....	45
3.2.4	Archaeology	47
3.3	Socioeconomic Resources.....	49
3.3.1	Land Use	49
3.3.2	Zoning	49
3.3.3	Demography.....	51

3.3.4	Environmental Justice	55
3.3.5	Economics and Development.....	56
3.3.6	Aesthetics and Visual Quality	57
3.3.7	Health and Safety	57
3.3.8	Community Resources	58
3.3.9	Utilities and Infrastructure	61
3.4	Transportation	63
3.4.1	Pedestrian and Bicycle Network.....	63
3.4.2	Road Network	65
3.4.3	Transit	72
3.5	Air Quality.....	73
3.5.1	Criteria Pollutants	73
3.5.2	Attainment Designations.....	75
3.5.3	Existing Conditions.....	76
3.6	Noise.....	76
3.6.1	Noise Model and Analysis	76
3.6.2	Noise Measurements	78
4.0	ENVIRONMENTAL CONSEQUENCES	83
4.1	Natural Resources.....	84
4.1.1	Soils.....	84
4.1.2	Water Resources	85
4.1.3	Wildlife	88
4.1.4	Vegetation	89
4.2	Cultural and Historic Resources.....	90
4.2.1	Historic Structures.....	91
4.2.2	Cultural Landscape	93
4.2.3	Archaeological Resources.....	94
4.2.4	Cultural Resources Summary.....	96
4.3	Socioeconomic Resources.....	97
4.3.1	Land Use	97
4.3.2	Zoning	98
4.3.3	Demography.....	99
4.3.4	Environmental Justice	101

4.3.5	Economics and Development.....	102
4.3.6	Joint Development	103
4.3.7	Aesthetics and Visual Quality.....	104
4.3.8	Health and Safety	105
4.3.9	Community Resources	106
4.3.10	Utilities and Infrastructure	109
4.4	Transportation	110
4.4.1	Bicycle and Pedestrian Network.....	110
4.4.2	Roadway Network and Traffic.....	114
4.4.3	Transit	131
4.5	Air Quality.....	133
4.5.1	Regional Conformity.....	134
4.5.2	Project Level Conformity.....	134
4.5.3	CO Hot-Spot (Microscale) Analysis	134
4.5.4	Methodology	134
4.5.5	Impact Assessment.....	135
4.5.6	Ozone	142
4.5.7	PM _{2.5} Determination.....	142
4.5.8	Mobile Source Air Toxics (MSAT)	142
4.6	Noise.....	143
4.6.1	Noise Modeling.....	143
4.6.2	Impact Assessment.....	145
4.6.3	Undeveloped Lands.....	147
4.6.4	Conclusion	147
4.7	Indirect and Cumulative Effects.....	147
4.7.1	Past Actions	148
4.7.2	Current or Future Actions	148
4.7.3	Cumulative Effects.....	150
4.8	Mitigation Measures.....	151
4.9	Permits and Authorizations	155
4.10	Section 6(f) – Land and Water Conservation Act of 1965	156
4.11	Irreversible and Irretrievable Commitment of Resources	157

5.0	SECTION 4(f) EVALUATION AND APPROVAL FOR TRANSPORTATION PROJECTS THAT HAVE A NET BENEFIT TO A SECTION 4(f) PROPERTY.....	159
5.1	Section 4(f) Historic Resources.....	159
5.2	Project Description.....	159
5.3	Purpose and Need.....	160
5.4	Proposed Action.....	160
5.5	Regulatory Requirements.....	161
5.5.1	Definition of the Net Benefits 4(f) Programmatic Evaluation.....	161
5.5.2	Applicability of the Net Benefits 4(f) Programmatic Evaluation.....	162
5.6	Section 4(f) Properties.....	162
5.6.1	U.S. Reservation 487 (Twining Square).....	162
5.7	Alternatives Considered.....	165
5.7.1	No Build Alternative.....	165
5.7.2	Build Alternative 1 – Revised Square Alternative.....	165
5.7.3	Build Alternative 2 – Conventional Intersection Alternative.....	168
5.7.4	Summary of Build Alternatives 1 and 2.....	168
5.8	Impacts on Section 4(f) Properties.....	170
5.8.1	Build Alternative 1 – Revised Square Alternative.....	170
5.8.2	Build Alternative 2 – Conventional Intersection Alternative.....	176
5.9	Avoidance Alternatives.....	181
5.9.1	Do Nothing Alternative.....	181
5.9.2	Improve the Transportation Facility in a Manner that Addresses the Project’s Purpose and Need without a Use of the Section 4(f) Property.....	182
5.9.3	Alternative at a Location Not Requiring the Use of Section 4(f) Property.....	183
5.9.4	Summary of Avoidance Alternatives.....	183
5.10	Feasibility and Prudence Test.....	183
5.10.1	Do Nothing Alternative.....	184
5.10.2	Improve the Transportation Facility in a Manner that Addresses Purpose and Need without Use of the Section 4(f) Property.....	184
5.10.3	Build the Transportation Facility at a Location that Does Not Require Use of the Section 4(f) Property.....	185
5.11	Alternatives with Least Overall Harm.....	186
5.12	Planning to Minimize Harm.....	188
5.12.1	Mitigation, Enhancement, and Beneficial Measures.....	188

5.13	Coordination.....	189
5.13.1	Public Involvement.....	189
5.13.2	Agency Coordination.....	189
5.13.3	Coordination with NPS.....	190
5.14	Conclusion.....	190
6.0	AGENCY COORDINATION AND PUBLIC INVOLVEMENT.....	193
6.1	Agency Coordination.....	193
6.2	Public Involvement.....	195
7.0	LIST OF PREPARERS.....	197
8.0	ENVIRONMENTAL ASSESSMENT DISTRIBUTION.....	199
8.1	Federal/Regional Agencies.....	199
8.2	District Agencies.....	199
8.3	District Elected Officials.....	199
8.4	Advisory Neighborhood Commissions.....	199
8.5	Utilities.....	200
8.6	Neighborhood Associations.....	200
8.7	Public Review Copies.....	200
9.0	REFERENCES.....	201

List of Tables

		<u>Page</u>
Table 1.1	Accidents and Injuries – Pennsylvania Ave. and Minnesota Ave, SE.	5
Table 1.2	Accidents Time of Day – Pennsylvania Ave. and Minnesota Ave, SE.	5
Table 1.3	Pennsylvania and Minnesota Avenues, SE Intersection Statistics, 2012-2012	7
Table 2.1	Alternatives Cost Summary.....	32
Table 3.1	Change in Population in the Study Area (1980-2010).....	53
Table 3.2	Study Area Demography by Census Tract	53
Table 3.3	Study Area Demography by Block Groups.....	54
Table 3.4	Persons without a High School Diploma in the Study Area.....	54
Table 3.5	Study Area Economic Data	56
Table 3.6	List of Intersections in the Study Area	65
Table 3.7	Level of Service Definitions.....	68
Table 3.8	Traffic Delay and LOS Results – Existing AM.....	68
Table 3.9	Traffic Delay and LOS Results – Existing PM	69
Table 3.10	Queuing Analysis Results (in Feet) – Existing PM.....	70
Table 3.11	Queuing Analysis Results (in Feet) – Existing PM.....	70
Table 3.12	Existing Travel Times (in Minutes) – AM	71
Table 3.13	Existing Travel Times (in Minutes) – PM.....	71
Table 3.14	National Ambient Air Quality Standards (NAAQS).....	74
Table 3.15	Noise Abatement Criteria (NAC) – Hourly A-Weighted Sound Level Decibels (dBA)....	77
Table 3.16	Measured Existing Noise Levels	79
Table 3.17	Comparison of Measured and Modeled Noise Levels.....	82
Table 4.1	List of Scenarios Included in the Traffic Analysis	114
Table 4.2	Traffic Delay (in Second/Vehicle) and LOS Results – 2015 AM.....	124
Table 4.3	Traffic Delay (in Second/Vehicle) and LOS Results – 2040 AM.....	125
Table 4.4	Traffic Delay (in Second/Vehicle) and LOS Results – 2015 PM.....	126
Table 4.5	Traffic Delay (in Second/Vehicle) and LOS Results – 2040 PM.....	127
Table 4.6	Queuing Analysis Results (in Feet) – AM.....	128
Table 4.7	Queuing Analysis Results (in Feet) – PM	128
Table 4.8	Travel Time Analysis Results (in Minutes) – AM	129
Table 4.9	Travel Time Analysis Results (in Minutes) – PM	130
Table 4.10	Microscale Air Quality Analysis Maximum 1-Hour CO Concentrations (ppm).....	140
Table 4.11	Microscale Air Quality Analysis Maximum 8-Hour CO Concentrations (ppm).....	141
Table 4.12	PM Peak Hour Noise Levels, dBA Leq(h)	144
Table 5.1	U.S. Reservation 487 Acreages	164
Table 5.2	Comparison of Park Acreage.....	170
Table 5.3	Impacts Relevant to Section 4(f) Property	180

List of Figures

		<u>Page</u>
Figure 1-1	Project Location.....	2
Figure 1-2	Project Study Area.....	3
Figure 1-3	Existing Safety Concerns for Pedestrians.....	6
Figure 1-4	Approximate Park Area Acreages	8
Figure 2-1	No Build Alternative (Current Configuration)	26
Figure 2-2	Build Alternative 1 - Revised Square	30
Figure 2-3	Build Alternative 2 - Conventional Intersection.....	31
Figure 3-1	Study Area Soils	36
Figure 3-2	Direct APE	42
Figure 3-3	Indirect APE.....	43
Figure 3-4	Properties Eligible for the National Register of Historic Places	44
Figure 3-5	Boring Locations and Study Area Superimposed on 1893 Map	48
Figure 3-6	Existing Land Use and Zoning	50
Figure 3-7	Study Area U.S. Census Tracts and Block Groups	52
Figure 3-8	Community Resources.....	59
Figure 3-9	Utilities	62
Figure 3-10	Existing Safety Concerns for Pedestrians.....	64
Figure 3-11	Study Area for Traffic Impact Analysis	66
Figure 3-12	Existing Roadway Configuration	67
Figure 3-13	Bus Routes Within the Study Area and the Vicinity	72
Figure 3-14	Bus Stops in the Existing Condition.....	73
Figure 3-15	Noise Receiver Map – Build Alternative 1	80
Figure 3-16	Noise Receiver Map – Build Alternative 2	81
Figure 4-1	Pedestrian Improvements – Build Alternative 1.....	112
Figure 4-2	Pedestrian Improvements – Build Alternative 2.....	113
Figure 4-3	Key Intersections Analyzed – Build Alternative 1	117
Figure 4-4	Key Intersections Analyzed – Build Alternative 2.....	120
Figure 4-5	Possible Bus Stop Locations – Build Alternative 1	132
Figure 4-6	Possible Bus Stop Locations – Build Alternative 2.....	133
Figure 4-7	CO Hot Spot Analysis – No Build Alternative.....	137
Figure 4-8	CO Hot Spot Analysis – Build Alternative 1	138
Figure 4-9	CO Hot Spot Analysis – Build Alternative 2	139
Figure 4-10	Construction Equipment Sound Levels	146
Figure 5-1	NPS Reservation Map	164
Figure 5-2	Approximate Park Area Acreage (No Build Alternative)	166
Figure 5-3	Build Alternative 1 – Revised Square (Consolidated Park Area).....	168
Figure 5-4	Build Alternative 2 – Conventional Intersection (Consolidated Park Area)	169

List of Appendices

- Appendix A Revitalization of Pennsylvania Avenue, SE for the Great Streets Initiative Concepts Design Final Report (Great Streets Design Final Report)
- Appendix B Design Criteria Report
- Appendix C Agency Coordination and Public Involvement
- Appendix D Construction Cost Estimate and Schedule
- Appendix E Section 106 Consultation and Cultural Resources Information
- Appendix F Traffic Analysis Report
- Appendix G Air Quality Report
- Appendix H Noise Technical Report

ACRONYMS AND ABBREVIATIONS

ACHP	American Council on Historic Preservation
AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
ANC	Advisory Neighborhood Commission
APE	Area of Potential Effect
AWI	Anacostia Waterfront Initiative
BMP	Best Management Practices
CAA	Clean Air Act of 1970
CAAA	1990 Clean Air Act Amendments
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFA	Commission of Fine Arts
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CT	U.S. Census Bureau Census Tract
dBA	A-Weighted Sound Level-Decibels
DCMR	District of Columbia Code of Municipal Regulations
DC OP	DC Office of Planning
DC SHPO	DC State Historic Preservation Office
DDOE	District Department of the Environment
DDOT	District Department of Transportation
The District	District of Columbia
DMPED	Office of the Deputy Mayor of Economic Development
DO	Director's Order
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973

FEMA	Flood Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
FWS	U.S. Fish and Wildlife Service
IPaC	Information, Planning, and Conservation System
LID	Low-Impact-Design
LOS	Level of Service
LRP	Long-Range Plan
LWCF	Land and Water Conservation Fund
MAC Study	<i>Middle Anacostia River Crossings Transportation Study (2005)</i>
MPO	Metropolitan Planning Organization
msl	Mean sea level
MWCOG	Metropolitan Washington Council of Governments
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NCPC	National Capital Planning Commission
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PEPCO	Potomac Electric Power Company
PM ₁₀	particulate matter less than or equal to 10 microns
PM _{2.5}	particulate matter less than or equal to 2.5 microns
PMP	District of Columbia Pedestrian Master Plan
RCRA	Resource Conservation and Recovery Act
SE	Southeast

SIP	State Implementation Plan
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Loads
TNM	Traffic Noise Model®
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USGS	U.S. Geological Survey
WIP	Watershed Implementation Plan
WMATA	Washington Metropolitan Area Transit Authority