

# Anacostia Waterfront

# Transportation master plan

Potential light-rail connection  
to National Harbor

Starter line serving  
the waterfront

## Additional Capacity Provided Through Transit



# Gateway to the Future

The Anacostia Waterfront Initiative (AWI) is a comprehensive plan to restore the long-neglected Anacostia Waterfront, remove physical barriers in the surrounding infrastructure, and leverage the community's economic growth while preserving its rich historic and cultural heritage. Since March 2000, in an unprecedented partnership that was formalized by a Memorandum of Understanding, 20 federal and District of Columbia government agencies have been working together to carry out the AWI vision. The District Department of Transportation (DDOT) is leading this effort through the planning, design and construction of an improved transportation infrastructure that will support a transformed Anacostia Waterfront. The AWI Transportation Master Plan describes how DDOT is helping to build the AWI vision.

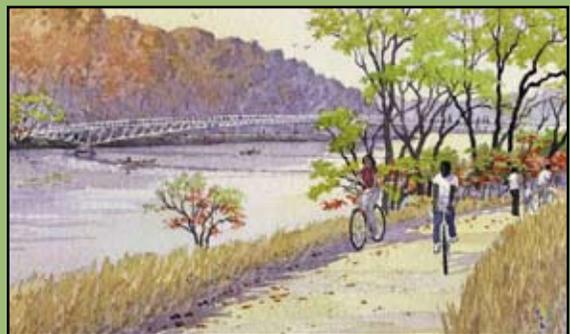


The transportation infrastructure within the Anacostia Waterfront area must be upgraded to support economic development and better serve neighborhoods and the region. Several federal government agencies are relocating to locations along the river, and a mix of residential and retail development is moving to the area. In 2008, the Washington Nationals' new ballpark on the riverfront is scheduled to be complete. In short, the area has become one of the fastest-growing centers of employment, entertainment, and residential growth. Improvements to the transportation network will improve access and connect new developments to adjacent communities and the Washington region as a whole.

DDOT actively coordinates with other participating agencies to ensure that all projects will improve the health of the river and restore the landscape. This environmental stewardship is an integral part of DDOT's mission to build transportation facilities that provide better access to local destinations and improve mobility for everyone throughout the AWI area.



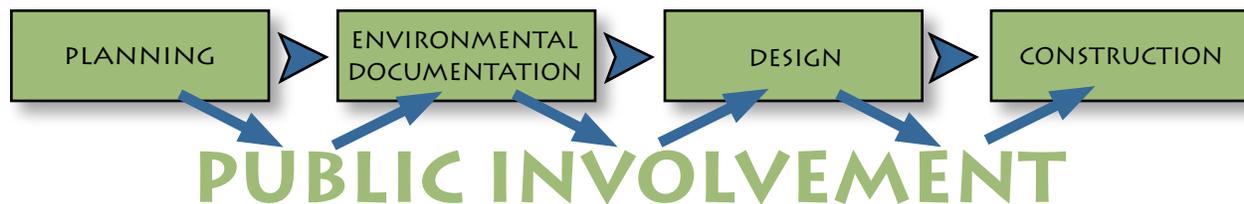
Open and ongoing communication with the public is instrumental to the success of the AWI program. Public involvement is vital at every stage: planning, design and construction. Listening to and collaborating with community stakeholders is an essential component of all AWI projects. Public involvement and support is critical to the success of the program. DDOT and other sponsoring AWI agencies continue to seek citizen input through meetings, workshops, phone calls and emails or letters as work moves forward.



More information about the AWI Transportation Master Plan, Mobility Study, and individual projects is available online at: [www.ddot.dc.gov/awi](http://www.ddot.dc.gov/awi)



## What Steps Are Involved in a Project?



DDOT's project development process includes planning, environmental study and documentation, design, and construction and is followed by regular maintenance. The AWI transportation projects, shown on the map on the following page, are in various stages of project development. Public involvement is a continuous part of the process of developing context sensitive solutions, with multiple opportunities for community stakeholders to provide feedback.

### Planning: Getting Started

Planning is the initial stage of a project – when a particular project is first conceived based on a particular purpose and need. During this first phase, DDOT begins its comprehensive public collaboration efforts, working with the local community and DC and federal agencies to align the priorities and policies of a proposed project. Planning studies provide recommendations for near, middle, and long term transportation improvements.

### Environmental Studies

The National Environmental Policy Act requires the Federal Highway Administration and DDOT to follow an established process to complete the environmental evaluation of planned projects. Projects are analyzed to consider how they will affect the human and natural environment. Typical environmental issues that are analyzed include:

- Land use
- Impact to communities
- Traffic and safety
- Historic and archaeological resources
- Parklands and recreational areas
- Noise/air quality
- Water quality and wetlands
- Economic development

Environmental documentation varies in the degree of complexity based on the nature of the project, but must be completed before a project can be built.

### Design

The specific design of a project draws heavily upon the public information gathered during the planning and environmental analysis processes. DDOT's infrastructure projects include the design of roadways, bridges, bicycle and pedestrian facilities, stormwater systems, and utilities. DDOT puts an emphasis on designing projects with the communities that they serve so that the improvements are environmentally sensitive and appropriate to the context.

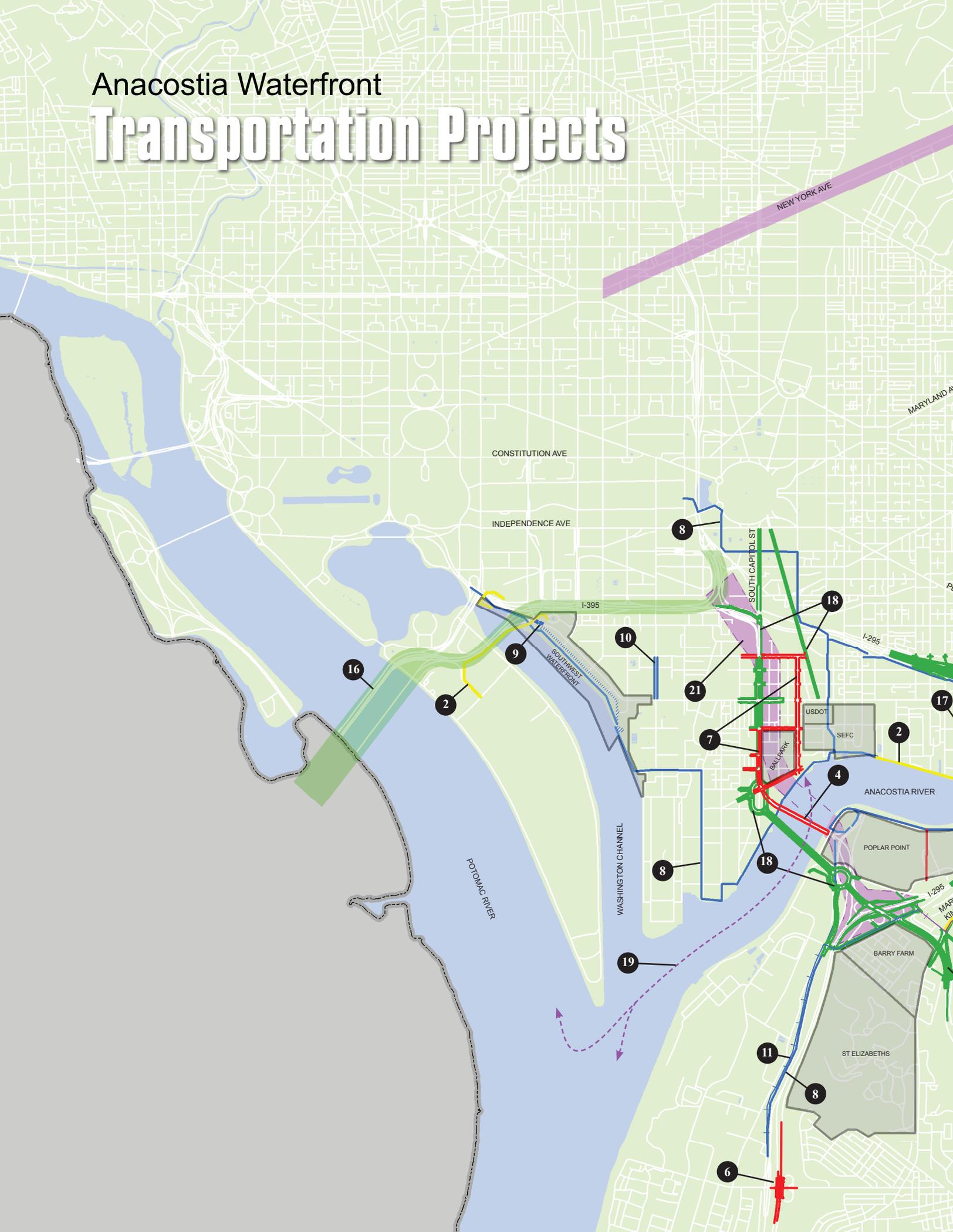
### Construction

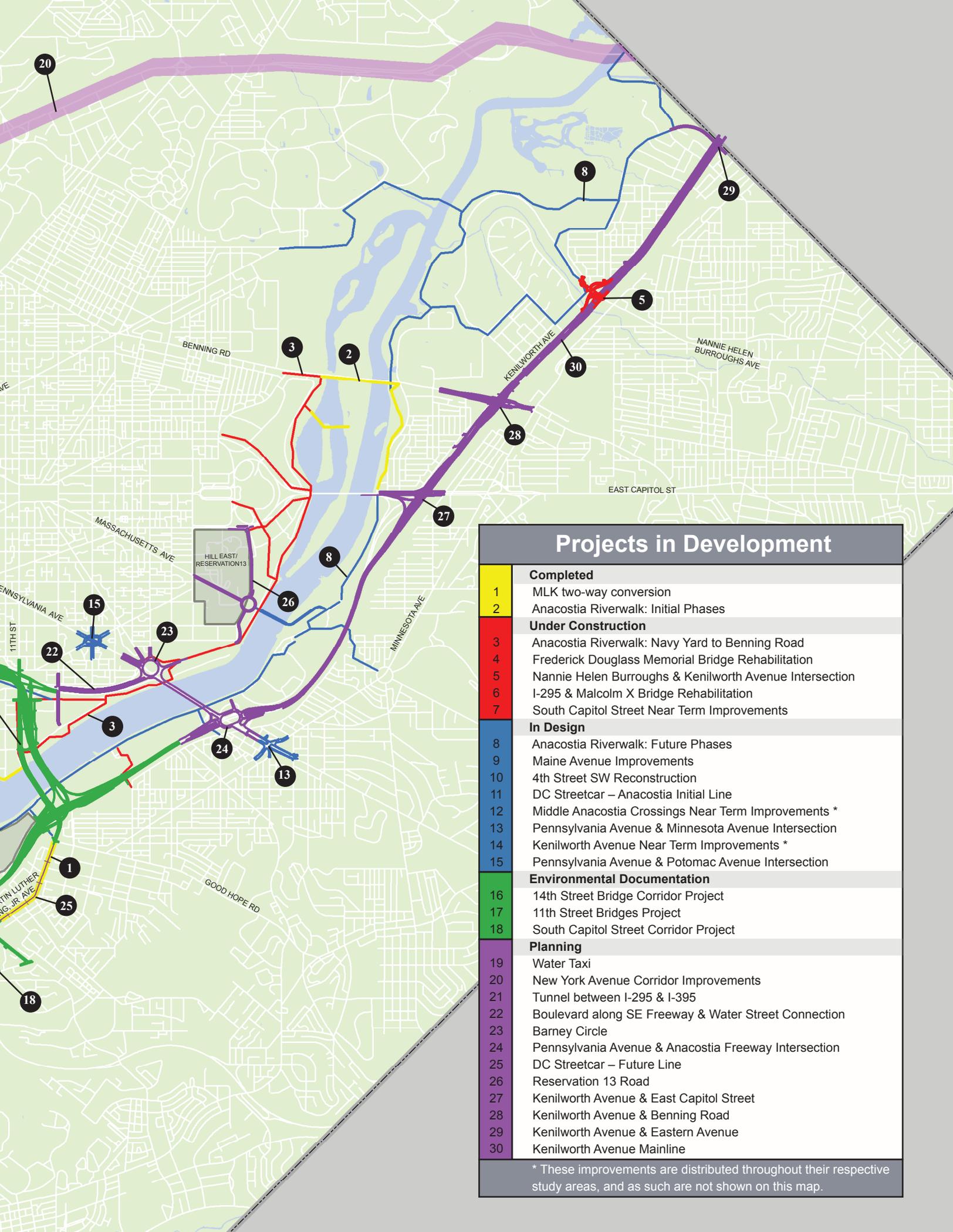
A project finally takes physical shape during the final phase – construction – becoming visible to the neighborhood and the traveling public. DDOT ensures that all projects are built in a safe and efficient manner, and puts a priority on maintaining quality of life for neighbors and affected commuters.

DDOT continues to move forward with implementing all AWI projects based on community priorities and public input, project benefits and available funding.

# Anacostia Waterfront

# Transportation Projects





## Projects in Development

### Completed

- 1 MLK two-way conversion
- 2 Anacostia Riverwalk: Initial Phases

### Under Construction

- 3 Anacostia Riverwalk: Navy Yard to Benning Road
- 4 Frederick Douglass Memorial Bridge Rehabilitation
- 5 Nannie Helen Burroughs & Kenilworth Avenue Intersection
- 6 I-295 & Malcolm X Bridge Rehabilitation
- 7 South Capitol Street Near Term Improvements

### In Design

- 8 Anacostia Riverwalk: Future Phases
- 9 Maine Avenue Improvements
- 10 4th Street SW Reconstruction
- 11 DC Streetcar – Anacostia Initial Line
- 12 Middle Anacostia Crossings Near Term Improvements \*
- 13 Pennsylvania Avenue & Minnesota Avenue Intersection
- 14 Kenilworth Avenue Near Term Improvements \*
- 15 Pennsylvania Avenue & Potomac Avenue Intersection

### Environmental Documentation

- 16 14th Street Bridge Corridor Project
- 17 11th Street Bridges Project
- 18 South Capitol Street Corridor Project

### Planning

- 19 Water Taxi
- 20 New York Avenue Corridor Improvements
- 21 Tunnel between I-295 & I-395
- 22 Boulevard along SE Freeway & Water Street Connection
- 23 Barney Circle
- 24 Pennsylvania Avenue & Anacostia Freeway Intersection
- 25 DC Streetcar – Future Line
- 26 Reservation 13 Road
- 27 Kenilworth Avenue & East Capitol Street
- 28 Kenilworth Avenue & Benning Road
- 29 Kenilworth Avenue & Eastern Avenue
- 30 Kenilworth Avenue Mainline

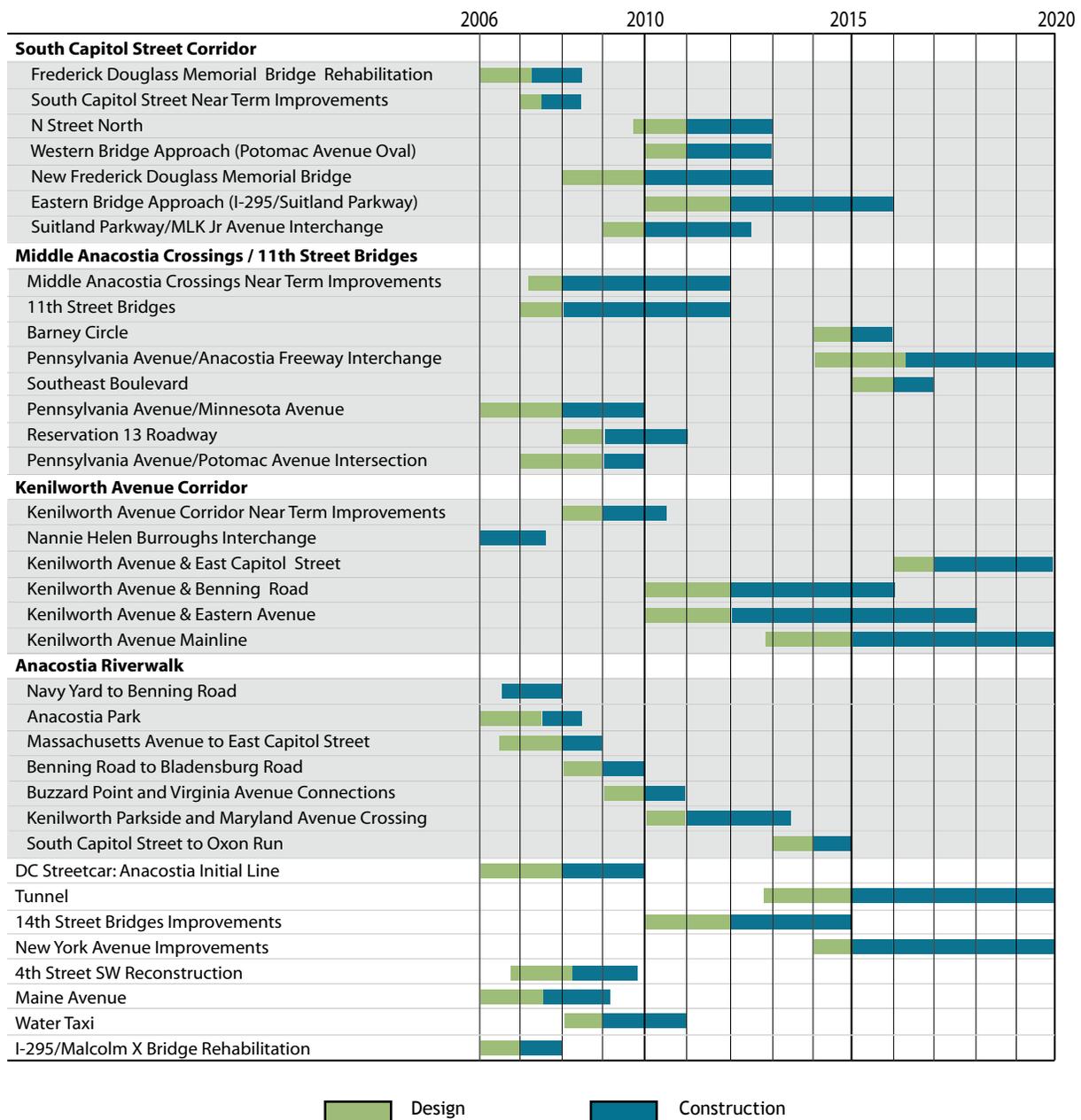
\* These improvements are distributed throughout their respective study areas, and as such are not shown on this map.

# Project Implementation Schedule

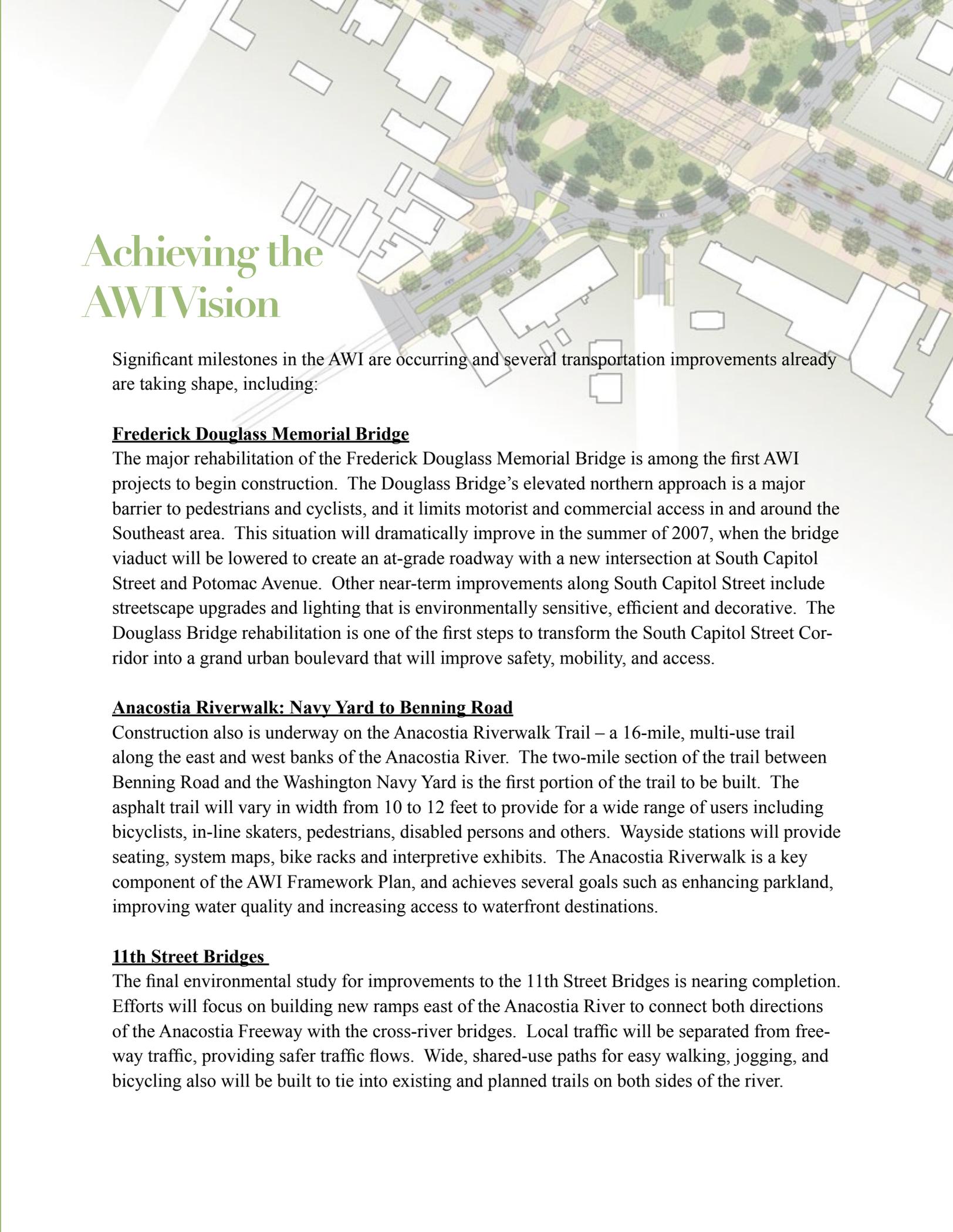
The chart below details the anticipated start and end dates for the design and construction phases of each AWI project. It is based on information available in May 2007. Some AWI infrastructure projects are grouped in the chart below according to the corridor

in which they are located. DDOT continually monitors project progress and refines their plan for designing and building projects. This schedule will be periodically updated, subject to funding, constructability, and changes to priorities.

## Project Implementation Schedule Anacostia Waterfront Transportation Infrastructure 2007



Note: Schedule dependent upon funding, constructability, and priorities



## Achieving the AWI Vision

Significant milestones in the AWI are occurring and several transportation improvements already are taking shape, including:

### **Frederick Douglass Memorial Bridge**

The major rehabilitation of the Frederick Douglass Memorial Bridge is among the first AWI projects to begin construction. The Douglass Bridge's elevated northern approach is a major barrier to pedestrians and cyclists, and it limits motorist and commercial access in and around the Southeast area. This situation will dramatically improve in the summer of 2007, when the bridge viaduct will be lowered to create an at-grade roadway with a new intersection at South Capitol Street and Potomac Avenue. Other near-term improvements along South Capitol Street include streetscape upgrades and lighting that is environmentally sensitive, efficient and decorative. The Douglass Bridge rehabilitation is one of the first steps to transform the South Capitol Street Corridor into a grand urban boulevard that will improve safety, mobility, and access.

### **Anacostia Riverwalk: Navy Yard to Benning Road**

Construction also is underway on the Anacostia Riverwalk Trail – a 16-mile, multi-use trail along the east and west banks of the Anacostia River. The two-mile section of the trail between Benning Road and the Washington Navy Yard is the first portion of the trail to be built. The asphalt trail will vary in width from 10 to 12 feet to provide for a wide range of users including bicyclists, in-line skaters, pedestrians, disabled persons and others. Wayside stations will provide seating, system maps, bike racks and interpretive exhibits. The Anacostia Riverwalk is a key component of the AWI Framework Plan, and achieves several goals such as enhancing parkland, improving water quality and increasing access to waterfront destinations.

### **11th Street Bridges**

The final environmental study for improvements to the 11th Street Bridges is nearing completion. Efforts will focus on building new ramps east of the Anacostia River to connect both directions of the Anacostia Freeway with the cross-river bridges. Local traffic will be separated from freeway traffic, providing safer traffic flows. Wide, shared-use paths for easy walking, jogging, and bicycling also will be built to tie into existing and planned trails on both sides of the river.

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# 1 Executive Summary

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The District Department of Transportation (DDOT) is helping to transform the Anacostia Waterfront into a better place for citizens to live, work, and play. As part of the Anacostia Waterfront Initiative (AWI), DDOT is pursuing a plan to reshape the area's transportation network into one that provides easy access for residents, commuters and visitors, and improves the area's environmental quality. DDOT's objective is to reconnect communities through the replacement of outdated and deteriorating facilities with context-sensitive infrastructure solutions. To accomplish these aims in the AWI area, DDOT has developed the Anacostia Waterfront Transportation Infrastructure Master Plan (Master Plan).

DDOT's transportation plan for the AWI area is comprised of five key transportation corridors as well as several independent projects. The Master Plan is an umbrella document that organizes these studies and projects into a comprehensive program. Its primary focus is to establish a logical and efficient implementation plan for the ongoing efforts in the in the AWI area, based on such factors as cost, duration of construction, environmental impacts, funding and benefits to the community. DDOT is actively engaged with its partner agencies and the development community to deliver these sweeping infrastructure changes as efficiently and effectively as possible. In all cases, minimizing disruptions to citizens' daily lives and to the economic life of the District has been a guiding principle. Projects have been sequenced in such a way as to provide residents with the highest possible levels of accessibility and personal mobility throughout the duration of the plan.

The Master Plan is a dynamic document, and the project sequence outlined here will continue to evolve, subject to constructability, funding, and changes to priorities. Therefore, this document represents a snapshot of DDOT's current and future plan for the Anacostia Waterfront. The timeliest information on the Master Plan is available at DDOT's website: <http://ddot.dc.gov>

## History of the Anacostia Waterfront Initiative

The Anacostia Waterfront Initiative was officially launched on March 22, 2000 through a Memorandum of Understanding (MOU) signed by twenty federal and District agencies that all committed to the goal of transforming the Anacostia River from a forgotten and blighted river to source of pride for the entire city and region. As the District's pattern of growth moves steadily eastward, the city's economic future is inextricably linked to the Anacostia Waterfront. The vision of the AWI is centered on revitalizing its parks, environment and infrastructure and re-establishing connections throughout the AWI area and between the Anacostia Waterfront and other parts of the city and the region.

The District Department of Transportation (DDOT) plays a key role in this effort through the planning, design and construction of an improved transportation infrastructure that will support a transformed Anacostia Waterfront.

## Project Development Process

DDOT's project development process includes planning, environmental documentation, design, and construction, followed by regular maintenance. Public Involvement is a continuous part of the process of developing context sensitive solutions, with multiple opportunities for community stakeholders to provide input. DDOT engages the community through various methods, including neighborhood meetings, publications, web sites, and outreach to key neighborhood groups such as the Advisory Neighborhood Commissions (ANCs).

# 1 Executive Summary

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Planning is the initial stage of a project, when a particular project is first conceived based on a purpose and need. Planning studies provide recommendations for near, middle and long term transportation improvements. In the environmental documentation phase, projects are analyzed to consider how they will affect the human and natural environments. Environmental documentation varies in the degree of complexity based on the nature of the project, but regardless of a project's scope, must be completed before a project can be built. In the design phase, projects draw heavily upon the public information gathered during planning and environmental documentation. DDOT puts an emphasis on designing projects with the communities they serve so that the improvements are environmentally sensitive and appropriate to the context. During construction, projects take physical shape and become visible to the public. DDOT ensures that all projects are built in a safe and efficient manner, and puts a priority on maintaining quality of life for neighbors and affected commuters.

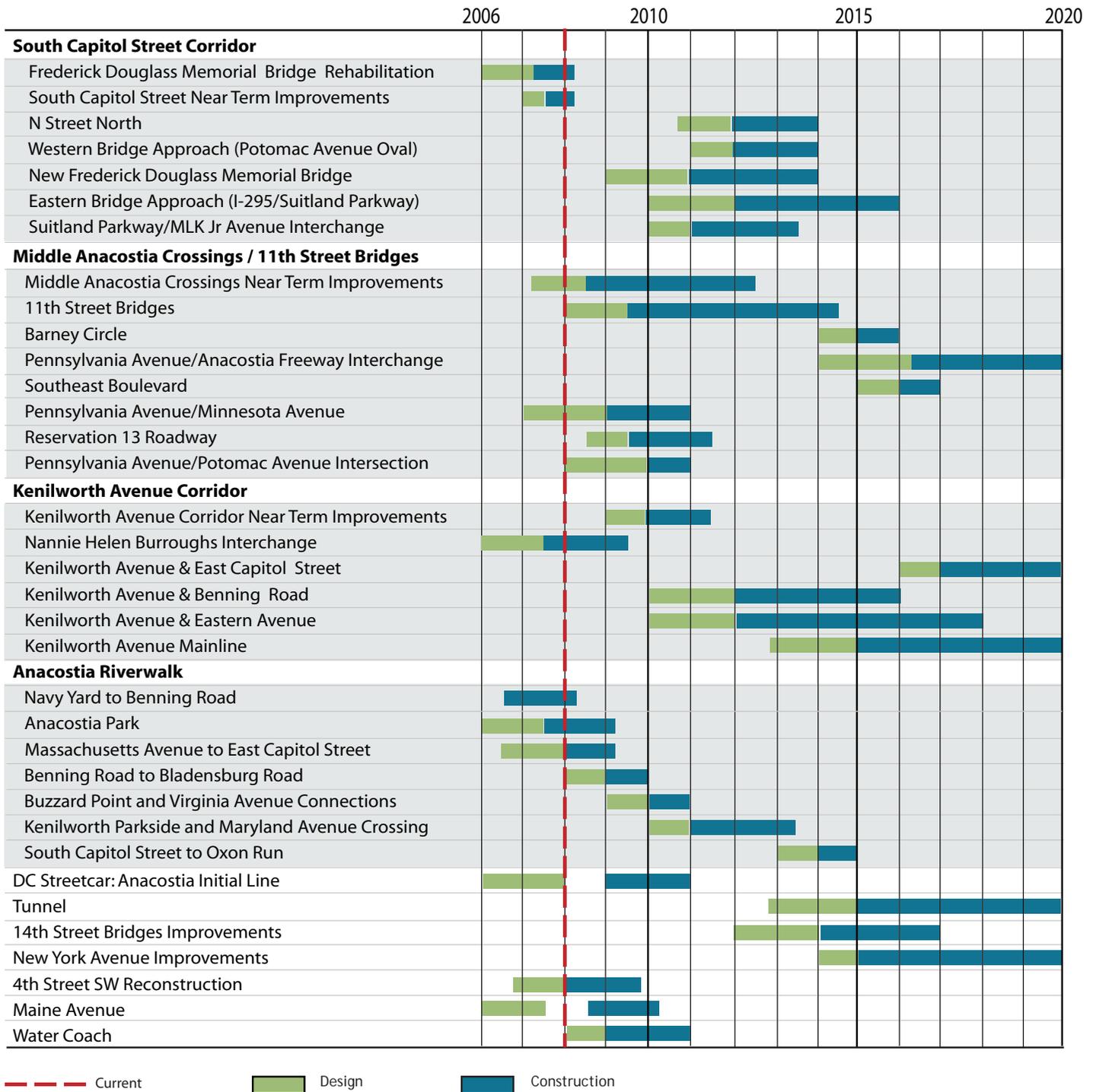
## Project Implementation

Transportation projects within the Master Plan area are in various stages of project development, and range from localized, low-impact improvements to projects with broader scope and potentially more substantial impacts. All of these projects were appraised for their effect on each other in terms of construction duration, maintenance of traffic, and traffic volume impacts. The availability of funding is a critical factor in project scheduling, and DDOT is pursuing a variety of both local and federal funding sources. Given that funding availability is uncertain, DDOT formulates the implementation plan to make the best use of committed funds. Additionally, DDOT makes a concerted effort to coordinate its projects with major developments efforts within the AWI area, seeking to support the success of developments through its improvements.

The current construction implementation schedule, shown in figure 1-1 below, is subject to funding, constructability, and changes to priorities.

Figure 1-1:

## Project Implementation Schedule Anacostia Waterfront Transportation Infrastructure 2008



# 2 Purpose

As part of the Anacostia Waterfront Initiative (AWI), the District Department of Transportation (DDOT) is pursuing a plan to reshape the area’s transportation network into one that improves access for residents, commuters, and visitors, and that improves the area’s environmental quality. DDOT’s objective is to reconnect communities through the replacement of outdated and deteriorating facilities with context-sensitive infrastructure solutions. To accomplish these aims in the AWI area, DDOT has developed the Anacostia Waterfront Transportation Infrastructure Master Plan (Master Plan).

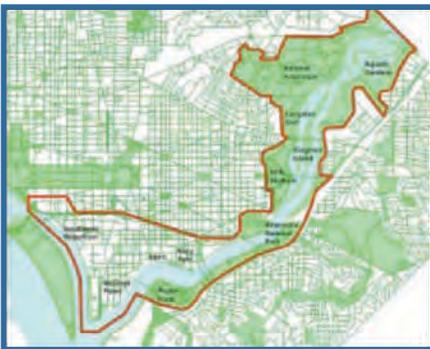
The Master Plan was initiated by DDOT to organize the studies and projects underway in the AWI study area into a comprehensive program. It describes DDOT’s project development process for implementing the AWI vision. It also provides details of each project’s current progress, as well as a snapshot of the status of DDOT’s AWI transportation program as a whole.

This document presents the current implementation schedule. Given the realities of the project development process as well as political and funding cycles, this program will change over time. However, it is a goal of the Master Plan to provide not only a strategy to accomplish the plan, but a set of criteria that will remain applicable as circumstances affecting the set of projects change.

## 2.1 History and Vision of the AWI

The Anacostia Waterfront Initiative is a comprehensive plan to restore the long-neglected Anacostia Waterfront, remove physical barriers in the surrounding infrastructure, and leverage the community’s economic growth while preserving its rich historic and cultural heritage. The AWI was formally launched in March 2000 through the AWI Memorandum of Understanding, which created an unprecedented partnership of twenty federal, regional and District of Columbia government agencies, including DDOT.

**Figure 2-1: The AWI Planning Area**



The AWI Framework Plan, released in 2003, concluded that the Anacostia Waterfront had suffered from a transportation system that favored regional mobility over neighborhood accessibility. The highways that dominate the area are ill-suited to serve local neighborhoods and have the effect of cutting off communities from one another and from the waterfront.

The Framework Plan puts forth the following strategies to redress the negative effects of the existing transportation system and create a future system characterized by connectivity:

- All activities along the Waterfront must be linked by the Anacostia Riverwalk and Trail.
- Public transportation must be enhanced and increased to afford more residents direct access to the Anacostia River and its neighborhoods.
- The bridges across the Anacostia River must be designed in the tradition of great civic architecture and must allow for bicycle and pedestrian access that is easy, attractive, and enjoyable.
- The highways and freeways that frame the Anacostia River must be transformed to become less of a physical and visual barrier to the waterfront and adjacent neighborhoods.
- All streets and boulevards that lead to the Anacostia River must be multi-modal and designed in the tradition of great Washington boulevards.

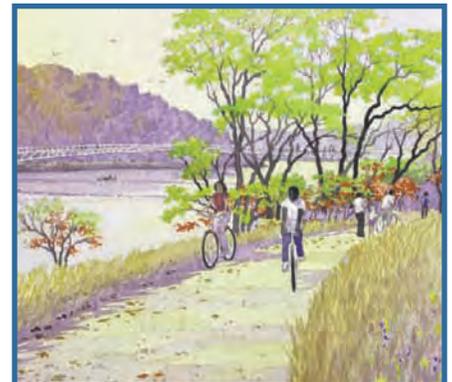
DDOT is fulfilling its commitment to the AWI by planning, designing and constructing an improved transportation infrastructure that will support a transformed Anacostia Waterfront. The transportation infrastructure within the Anacostia Waterfront area must be upgraded to support economic development and better serve neighborhoods and the region. Several federal government agencies are relocating to locations along the river, and a mix of residential and retail development is moving to the area. In 2008, the Washington Nationals' new ballpark on the riverfront is scheduled to be complete. In short, the area has become one of the fastest-growing centers of employment, entertainment, and residential growth. Improvements to the transportation network will improve access and connect new developments to adjacent communities and the Washington region as a whole.

DDOT actively coordinates with other stakeholders and agencies to ensure that all projects will improve the health of the river and restore the landscape. This environmental stewardship is an integral part of DDOT's mission to build transportation facilities that provide better access to local destinations and improve mobility for everyone throughout the AWI area.

Open and ongoing communication with the public is instrumental to the success of the AWI program. Public involvement is vital at every stage: planning, design and construction. Listening to and collaborating with community stakeholders is an essential component of all DDOT projects. DDOT and other sponsoring AWI agencies continue to seek citizen input through meetings, workshops, phone calls and emails or letters as work moves forward.

More information about the Master Plan, Mobility Study, and individual projects is available online at:  
[www.ddot.dc.gov/awi](http://www.ddot.dc.gov/awi)

**Figure 2-2: Revitalized parkland along the Anacostia River as envisioned in the AWI Framework Plan**



## 2 Purpose

### 2.2 DDOT's AWI Study Area

Development activity often has transportation impacts well beyond its immediate vicinity. While the AWI initiative as a whole is focused on areas in fairly close proximity to the Anacostia and Potomac riverfronts, DDOT must consider a significantly broader area in order to effectively meet the challenges that redevelopment of the riverfronts will bring. Figure 2-3 shows the extent of DDOT's AWI Study Area.

Figure 2-3: DDOT's AWI Study Area



# 3 Project Development Process

DDOT moves projects forward following an established Project Development Process. This process, organized by project phase, are described in Section 3.1. Project Prioritization, a separate process that occurs concurrently with the phases detailed below, is covered in Section 3.2.

## 3.1 Project Phases

The Master Plan organizes projects already underway in the AWI area. DDOT developed these projects over the past several years through public outreach, planning, environmental documentation, design, and construction. As shown in Figure 3-2 on the following pages, the projects are in various stages of the project development process; while some projects are still in the planning phase, several others are under construction or even complete. Because DDOT involves the public through all project stages, community stakeholders have multiple opportunities to provide input and feedback.

Public involvement is a central part of Context Sensitive Solutions (CSS). As defined by the Federal Highway Administration (FHWA), CSS “considers the total context within which a transportation improvement project will exist.” In order to formalize a context-sensitive approach to projects, DDOT has developed the Context Sensitive Design Guidelines. Because CSS is an overarching theme in DDOT’s work, these guidelines apply to all phases of project development.

Figure 3-1: DDOT’s Project Development Process Phases



### 3.1.1 Planning

Planning is the initial stage of a project, when a particular project is first conceived based on a particular purpose and need. During this first phase, DDOT begins its comprehensive public collaboration efforts, working with community members as well as District and federal agencies to align the priorities and policies of a proposed project. Planning studies include conceptual recommendations for improvements, typically documented in reader-friendly reports and graphics.

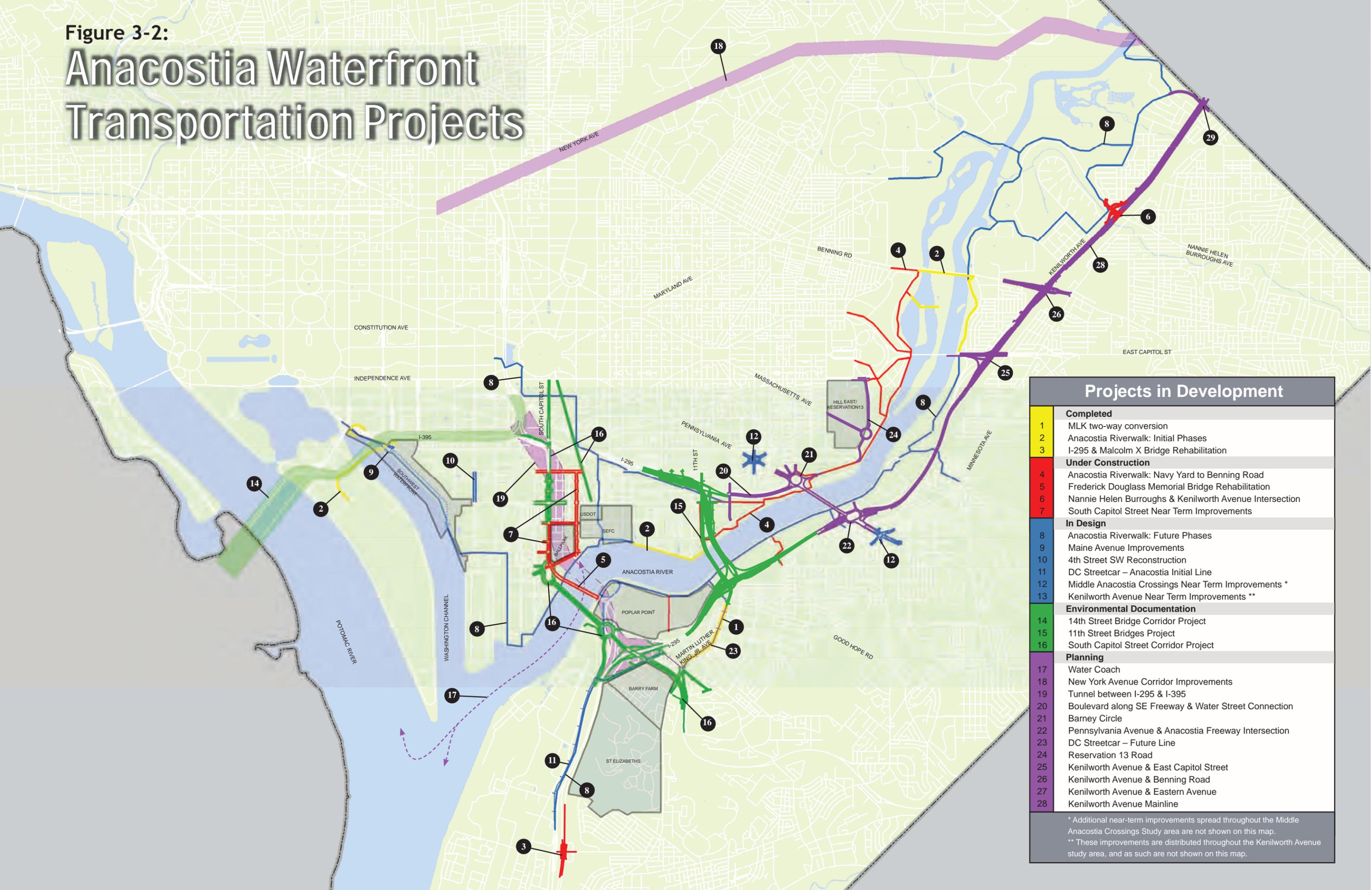
From the broad goals of the AWI, DDOT identified five critical corridors to focus planning efforts on:

- South Capitol Street Corridor
- Middle Anacostia River Crossings
- Southwest Waterfront
- Kenilworth Avenue Corridor
- Anacostia Riverwalk



Figure 3-2:

# Anacostia Waterfront Transportation Projects



Projects in Development	
<b>Completed</b>	
1	MLK two-way conversion
2	Anacostia Riverwalk: Initial Phases
3	I-295 & Malcolm X Bridge Rehabilitation
<b>Under Construction</b>	
4	Anacostia Riverwalk: Navy Yard to Benning Road
5	Frederick Douglass Memorial Bridge Rehabilitation
6	Nannie Helen Burroughs & Kenilworth Avenue Intersection
7	South Capitol Street Near Term Improvements
<b>In Design</b>	
8	Anacostia Riverwalk: Future Phases
9	Maine Avenue Improvements
10	4th Street SW Reconstruction
11	DC Streetcar – Anacostia Initial Line
12	Middle Anacostia Crossings Near Term Improvements *
13	Kenilworth Avenue Near Term Improvements **
<b>Environmental Documentation</b>	
14	14th Street Bridge Corridor Project
15	11th Street Bridges Project
16	South Capitol Street Corridor Project
<b>Planning</b>	
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24	Reservation 13 Road
25	Kenilworth Avenue & East Capitol Street
26	Kenilworth Avenue & Benning Road
27	Kenilworth Avenue & Eastern Avenue
28	Kenilworth Avenue Mainline

\* Additional near-term improvements spread throughout the Middle Anacostia Crossings Study area are not shown on this map.

\*\* These improvements are distributed throughout the Kenilworth Avenue study area, and as such are not shown on this map.



DDOT studied each of these corridors and developed recommendations for near, mid, and long term improvements within each study area. These studies are listed and described in Appendix A. From among these recommended improvements, a set of individual projects was developed for each corridor. Based on funding availability and priorities, various projects identified in the major planning studies have moved forward to other stages in the project development process. In addition, several other independent projects that do not conform to any one of the corridors, yet which bear directly on the success of the overall AWI area transportation system, have been added to the overall program.

For all of the projects in the AWI program, DDOT practices CSS during the planning stage by engaging the public, ensuring that the resulting recommendations directly reflect the needs and concerns of affected communities. DDOT informs the public of planning activities and solicits feedback through a variety of methods, such as fliers, newsletters, websites, community meetings, and door-to-door outreach visits at local businesses and community organizations. Of particular importance are the outreach efforts made to and through the Advisory Neighborhood Commissions (ANCs), which are the established forums for neighborhood issues.



**Figure 3-3: 2004 South Capitol Street Bridge Design Workshop**

DDOT encourages local stakeholders to be a driving force in planning efforts. Public workshops allow members of the community to “put pen to paper” as active participants in the planning process. The Kenilworth Avenue Study team went a step further, hiring local residents to collect pedestrian and bicycle data for the study. The end result of such a community involvement program is a better planning product and a sense of ownership for the proposed improvements.

### 3.1.2 Federal Environmental Studies

The National Environmental Policy Act (NEPA) requires the Federal Highway Administration (FHWA) and DDOT to follow a regulated process to complete the environmental evaluation of projects using federal funds. Environmental documentation varies in the degree of complexity based on the nature of the project. Several components of the AWI transportation improvements program are of such complexity that they warranted the most in-depth level of documentation required under NEPA, the Environmental Impact Statement (EIS). If a project is expected to have no significant impacts, an Environmental Assessment (EA) or a Categorical Exclusion (CE) is completed instead of an EIS. A complete list of the anticipated level of environmental documentation required for AWI projects is included as Appendix C of this report.

For all levels of NEPA documentation, the preparing agency must demonstrate that the project has independent utility or “be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made” (FHWA, *The Development of Logical Project Termini*, 1993). Furthermore, the project must connect logical termini, be of a sufficient length to perform a comprehensive evaluation, and not preclude other alternatives for foreseeable transportation improvements.

## 3 DDOT Project Process

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Typically, NEPA documents include an analysis of several possible combinations of improvements (build alternatives) to consider how they will affect the human and natural environment. The merits of each alternative are weighed against one another and against the resulting conditions if no action is taken (the no-build alternative). Typical environmental issues that are analyzed include:

- Land use
- Traffic and safety
- Parklands and recreational areas
- Historic and archaeological resources
- Impact to communities
- Noise/air quality
- Water quality and wetlands
- Economic development

During the environmental documentation phase of the project development process, DDOT determines if strategies to mitigate negative impacts are necessary. For example, because the preferred alternative in the 11th Street Bridges FEIS would adversely impact a wetland, the document proposes to obtain national and local permits required per the Clean Water Act. These permits will likely require mitigation such as the restoration of a comparable wetland habitat elsewhere.

### 3.1.3 Design

The specific design of a project draws heavily upon the public information gathered during the planning and environmental analysis processes. DDOT puts an emphasis on designing projects with the communities that they serve. This helps to create improvements that preserve scenic, aesthetic, historic, and environmental resources, while maintaining safety and addressing the particular mobility needs of surrounding communities.

DDOT's infrastructure projects include the design of roadways, bridges, and bicycle and pedestrian facilities. Final design documents include plans for stormwater systems, erosion control, lighting, signalization and utility connections. Certain aspects of construction management, such as interim traffic patterns and the coordination with utility companies to relocate their infrastructure, are addressed during the design phase.

### 3.1.4 Construction

A project takes physical shape during the final phase - construction - becoming visible to the neighborhood and traveling public. Access to and through surrounding neighborhoods is a critical consideration during construction, as are the prevention of excess runoff, minimizing noise impacts to neighborhoods, and maintaining a safe construction site. Maintenance of traffic, a major concern during construction, is addressed in more detail in Section 4.

DDOT continues its CSS approach during the construction phase by helping to maintain the quality of life for neighbors and affected commuters. For example, during the Frederick Douglass Memorial Bridge Rehabilitation project, DDOT determined that a complete closure of the bridge for two months during the low-traffic summer months would be preferable to a longer period of intermittent partial lane closures on the bridge. As a result, the overall timetable of the project, and thereby the disruption to residents' lives, was considerably shortened.

DDOT continues to move forward with implementing all AWI projects based on community priorities, public input, project benefits, and available funding.

### 3.2 Project Prioritization

After planning and environmental documentation, DDOT decides which projects to develop further with design and ultimately, which projects to construct. Prioritizing projects takes various fiscal, social, and physical factors into account. DDOT has prioritized, or sequenced, the AWI transportation projects. This section describes the factors that influenced the project construction sequence. The construction sequence is always evolving based on funding, constructability, and changes in priorities. The current schedule, reflected in Figure 3-4, represents a snapshot as of December 2007.

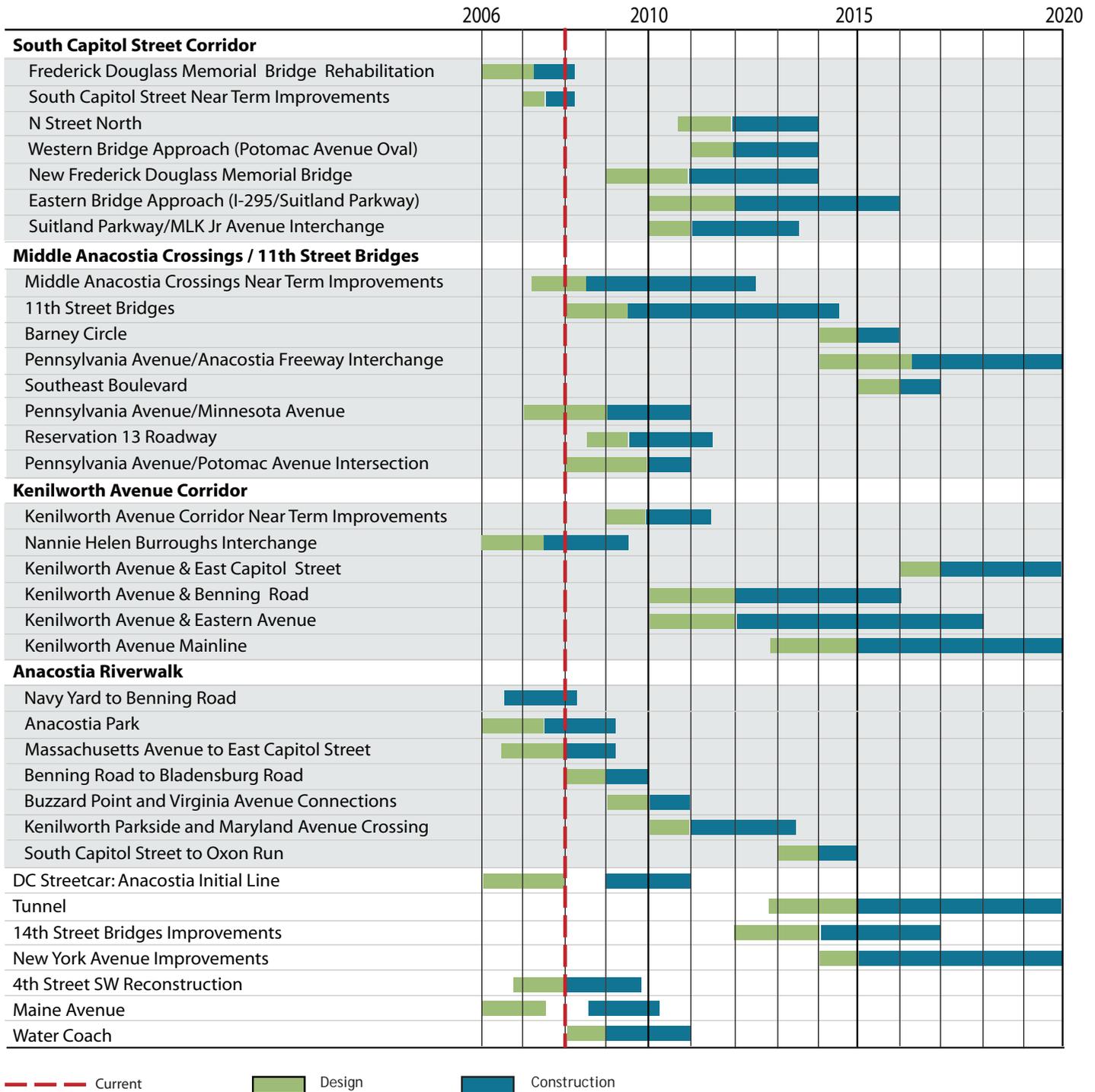
The following bullets preview the approach taken to distill the studies into projects for implementation. This process is summarized in Figure 3-5.

- Projects that are in later phases of development typically have already developed construction schedules. Where available, these schedules were used. For other projects, assumptions for construction durations were made based on historical data on similar projects. An assumed construction duration for an entire project corridor was used when project study information was not at a level of detail that provided individual section (e.g. specific interchange) durations.
- Funding availability was included in the project phasing evaluation. Projects with known funding sources are generally scheduled to be constructed earlier.
- Individual construction projects that included work on a bridge structure crossing the Anacostia River were phased to allow for one Anacostia River bridge to be worked on at a time. This provides alternative access points from both sides of the Anacostia River and limits the impacts to truck and evacuation routes.
- Project construction phasing was evaluated according to the impact the work would have both within the individual project area and the Master Plan. The proposed phasing was established based on two conditions:
  - A. the immediate impacts to other facilities caused by an interchange, roadway or bridge being under construction; and
  - B. the potential benefit for a future project if another project is already in place.

# 3 DDOT Project Process

Figure 3-4:

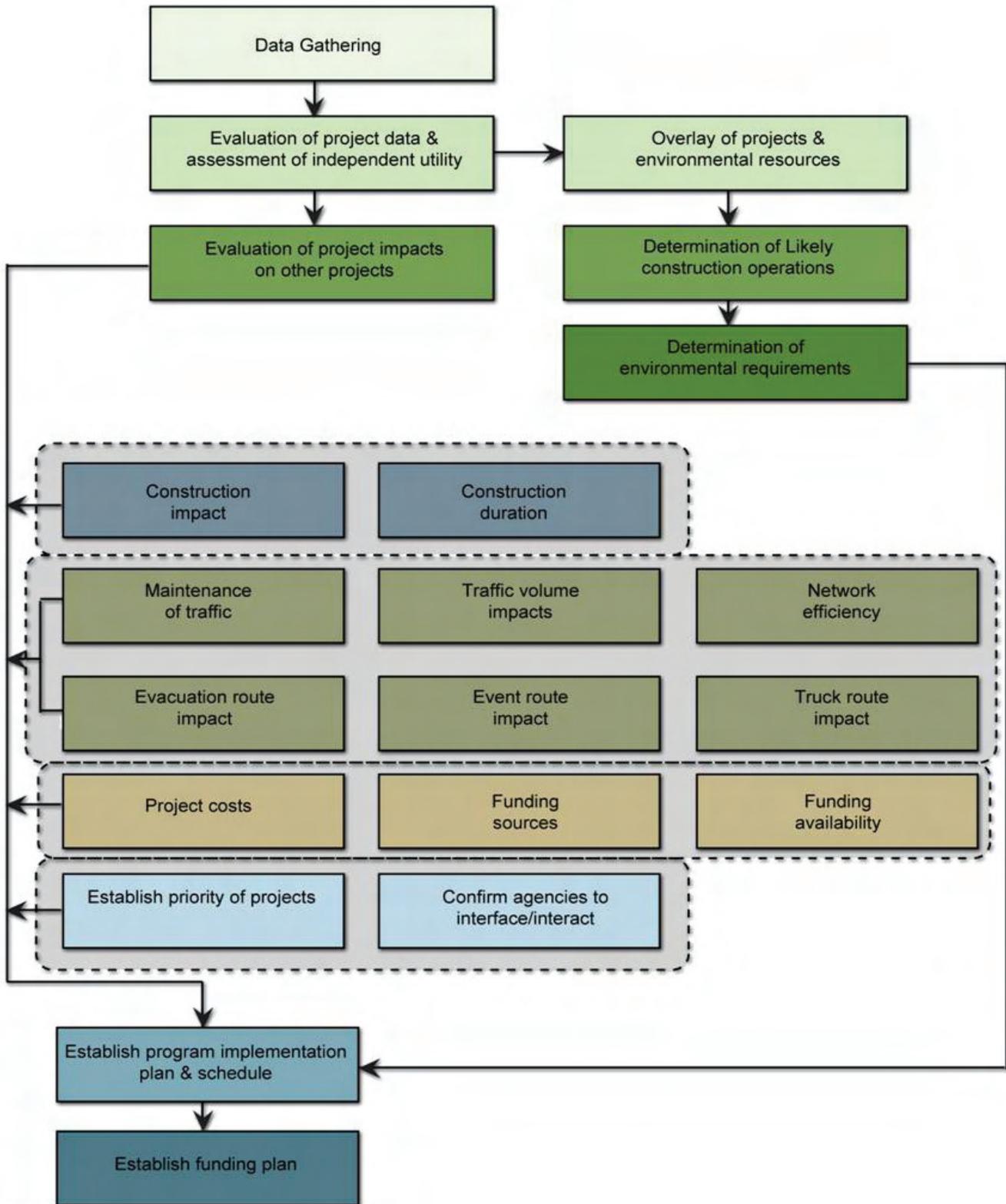
## Project Implementation Schedule Anacostia Waterfront Transportation Infrastructure 2008



- 
- An example of this benefit would be the reconstruction of an interchange to add movements that are currently missing, thus providing access options that may lessen the traffic impact when constructing an adjacent interchange.
  - The projects were phased so that major regional connections would be improved prior to beginning work on key local routes. This sequence would prepare the regional roadways, most of which are also truck and evacuation routes, for the traffic impacts of key local road construction. In addition, improving the regional connections would facilitate the separation of local and commuter traffic and reduce congestion on local streets.
  - Environmental justice is a specific concern in the Master Plan study area given the high percentage of low-income and minority neighborhoods and DDOT's stated goal of improving the accessibility of community resources and mobility of community residents through its transportation infrastructure improvements.

### 3 DDOT Project Process

Figure 3-5: Flow Chart for the Project Prioritization Decision-Making Process



# 4 Project Implementation

Once a project reaches the later stages of the project process, design and construction, a whole array of considerations begin to effect its implementation. Among these are project financing, program management, contract packaging, construction management, and maintenance of traffic, each of which are detailed in this section. The degree to which each of these factors effects the timing and costs of a particular project will vary on a case-by-case basis, and so they are presented independently here.

## 4.1 Project Financing

The availability of funding is often the first filter in determining the timing of a project's implementation. For its AWI projects, DDOT is utilizing funds from a variety of sources and continuously updating its cost estimates. The information presented below on both funding sources and costs represents the best information available at the time of this report's release.

### 4.1.1 Funding Sources for AWI Transportation Improvements

The Master Plan projects represent a large investment in the Anacostia Waterfront neighborhoods. The funding for the projects could come from a variety of sources. Given the preliminary state of many of the projects, some uncertainty surrounds the availability of funds. The potential funding sources and amounts shown in Table 4-1 reflect DDOT's assumptions as to the availability of funds as of December 2007. Each source of funds is described below, along with assumptions regarding availability.

#### **East Washington Traffic Relief General Obligation (GO) Bonds - \$225.0 million**

The District of Columbia has issued a total of \$225 million in GO bonds to finance traffic relief in the eastern half of the city.

#### **National Corridor Infrastructure Improvement Projects Funds - \$75.0 million**

The National Corridor Infrastructure Improvement Projects is a U.S. DOT discretionary program that provides funding for construction of highway projects in corridors of national significance. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) allocated \$75.0 million to the Frederick Douglas Memorial (FDM) Bridge through this program.

#### **Federal High Priority Projects (HPP) Funds - \$65.6 million**

The Federal High Priority Projects (HPP) program is a U.S. DOT discretionary program. SAFETEA-LU authorized \$48.0 million for replacement of the FDM Bridge and \$17.6 million for replacement of the 11th Street Bridges.



The existing 11th Street Bridges

## 4 Project Implementation



**The Frederick Douglass Bridge undergoing renovations in 2007**

### **Federal Appropriations for the Existing Frederick Douglass Memorial Bridge Rehabilitation - \$26.0 million**

The federal government has appropriated the following funds for the FDM Bridge Rehabilitation:

- Federal General Provision Appropriations FY 2004 - \$7.0 million
- Public Lands Highways FY 2005 - \$4.5 million
- Formula Program FY 2006- \$14.5 million

### **National Highway System (NHS) Funds - \$2.3 million**

NHS funds are federal monies allocated by formula to fund improvements to roads that are part of the national highway system or that are national highway system intermodal connectors. Up to 50 percent of

these funds may be transferred to other transportation project areas including the Congestion Mitigation and Air Quality (CMAQ) program, the Surface Transportation Program (STP), the Highway Bridge Replacement and Rehabilitation Program (HBRRP), and the Interstate Maintenance (IM) program.

### **Re-obligated National Highway System Funds - \$12.6 million**

These previously obligated NHS formula monies were re-obligated to eligible AWI projects.



**The Anacostia Riverwalk near RFK Stadium**

### **CMAQ FY2003 for Anacostia Riverwalk Trail Design - \$3.6 million, and CMAQ FY2005 for West Bank Riverwalk Trail - \$3.9 million**

The CMAQ program, jointly administered by FHWA and the Federal Transit Administration (FTA), provides funding for areas that do not meet the National Ambient Air Quality Standards (nonattainment areas) as well as former nonattainment areas that are now in compliance (maintenance areas). The formula for distribution of funds considers an area's population and the severity of its ozone and carbon monoxide problems, with greater weight given to areas that are both carbon monoxide and ozone nonattainment/maintenance areas.

### **DC 2004-2007 Appropriations - \$13.9 million**

\$13.88 million of Congress's appropriations for the District of Columbia from the 2004-2007 budget years have been set aside for AWI projects.

### **Section 115 funds for West Bank Riverwalk Trail - \$0.4 million**

Table 4-1: Funding sources for AWI transportation improvements as of January, 2008

Committed Funding for AWI Projects	(amounts in millions)
East Washington Traffic Relief GO Bonds	\$225.00
National Corridor Infrastructure Improvement Project Funds (S. Capitol St.)	\$75.00
Federal High Priority Projects (HPP) Funds	\$65.60
Federal Appropriations for Frederick Douglass Memorial Bridge	\$26.00
National Highway System (NHS) Funds	\$2.30
Re-obligated National Highway System (NHS) Funds	\$12.60
Congestion Mitigation and Air Quality (CMAQ) Funds for Riverwalk	\$7.50
DC 2004-2007 Appropriations	\$13.88
Section 115 for Riverwalk	\$0.40
<b>Total</b>	<b>\$428.28</b>

In addition to the funding sources discussed above, DDOT is investigating other traditional and innovative financial instruments involving combinations of local, federal, and private funding sources to complete the AWI transportation improvements. Availability of funding is a major factor in DDOT’s ongoing re-evaluation of the Master Plan timetable.

#### 4.1.2 Costs by Corridor

The AWI transportation projects that are planned to commence construction by 2013 are projected to cost approximately \$2.23 billion to design and construct. The following table shows the anticipated order-of-magnitude costs of the AWI projects by corridor, based on planning and design information.

Table 4-2: Projected Costs by Corridor as of January, 2008

Corridors	Total Cost (YOE, in millions)*
South Capitol Street	\$1,037
Middle Anacostia Crossings	\$693
Kenilworth Avenue	\$349
Riverwalk	\$105
Southwest Waterfront	\$1.5
AWI-Wide	\$45
<b>Total</b>	<b>\$2,230.5</b>

\* Total Costs includes only projects with construction expected to commence by 2013.

Because most of the projects are in the planning or environmental stages, a large contingency was applied to the construction cost. The costs will change as the design for each project progresses and the construction timing is established. Section 5 of this report contains the projected costs for individual projects within each corridor, including those that are scheduled to commence beyond 2013.

## 4 Project Implementation

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### 4.2 Program Management

DDOT will follow a Program Management approach for the major corridors within the AWI. This provides the comprehensive general and technical management support that is required to develop and implement a program of work that includes a number of closely related projects. The improvements in these corridors will be accomplished by means of multiple contracts for construction and procurement, each typically constituting a project. The Program Manager and Program Management support staff supply, supervise, and support the scope and services required for DDOT's program, functioning throughout the planning, design, procurement, construction and operations stages.

Program Management includes an extensive contractor outreach effort as a consideration in timing the advertisement of major contracts. Outreach efforts are focused on projecting the program as well-managed, well-funded, highly important, and an opportunity for contractors to invest time now with the prospect of winning multiple contracts over time. Having one contractor manage multiple concurrent contracts can reduce DDOT's risk for managing interfaces. The contractor outreach program provides the additional benefit of increasing the potential bidders' understanding of the overall master plan and its desired outcomes.

The designated Program Manager takes the lead in coordinating the development of specific provisions for each contract that place constraints on the contractor during construction, and for including commitments from the Environmental Impact Statement (EIS) into each construction package. This provides DDOT with clear demonstration that environmental commitments will be honored during the construction phase.

### 4.3 Contract Packaging

DDOT, with the assistance of the Program Manager, will take the lead in conducting the initial constructability reviews and the subsequent process of developing appropriate contract packages prior to the bid phase.

- Proposed contract packages, possibly combining more than one of the specific projects, will be developed during the Implementation Phase.
- Initial constructability reviews are performed based on the best available information at that time, to provide the basis for development of proposed construction contract packages.
  - » The objective of the constructability review process is to create an environment in which contractors can optimize production. The avoidance of contractor delays and interruptions to production is a powerful means of controlling risk. DDOT will facilitate this process by anticipating and accommodating in the bid documents likely contractor logistics, operations and employee needs. When contractors are productive, they tend to be profitable, produce better quality work and are much more likely to meet a schedule; all of which benefits the owner, the community affected by the project and the traveling public.
  - » Part of the constructability review effort will involve forecasting market capacity and contractor backlog as aids to identify potential windows to advertise contracts during owner favorable bidding periods.

- Each proposed package will be evaluated during the procurement phase in a greater level of detail. Since more detailed information on the scope of individual major projects, as well as the availability of funding, will be available during the procurement phase, this may lead to the discovery of interdependencies and other factors that would be significant in determining constructability. It will also assist in the identification of potential benefits that could be obtained by completing a portion of one particular project early in the construction period, in order to assist in maintenance-of-traffic with related projects.

## 4.4 Construction Management

Construction impacts are assessed for projects and mitigation of these temporary impacts is often a major concern of the public and business communities. For major projects, these temporary impacts can stretch over many months and sometimes years. It is important to assess these impacts effectively and to work with those affected to develop mitigation strategies as early as possible. In the Anacostia Waterfront area, the list of potential projects requires acknowledgment that the construction period for several projects will overlap, possibly for an extended, multi-year period. For example, different contractors working on two separate projects may be able to work together on delivery of like materials and use of certain roadways for access. There can be benefits to unified construction staging zones and material storage areas to minimize the total effects on local streets, businesses and neighborhoods, either in geographic scope or length of time.

### 4.4.1 Construction Durations

Project durations need to be matched to reasonable targets for the construction placement rate. For individual contractors working in DC, there are material delivery challenges, traffic congestion, and work space constraints, all of which may impact construction schedules.

### 4.4.2 Contractor Staging and Storage Areas

DDOT will allocate space for use by particular contracts, and those allocations will be specified in each contract. This will make the best use of the available space, and to avoid potential conflicts and sub-optimized utilization that might occur if contractors had to identify their own space. The allocation of specific staging areas will include known constraints on the use of the properties, including “must vacate by” dates, and contact information. For a corridor program, it is valuable for DDOT to dedicate space and to include, if applicable, a plan to reconfigure, share or release the area to follow-on contractors on specific dates.

## 4 Project Implementation

### 4.5 Maintenance of Traffic (MOT)

A primary consideration during the design phase of a project is the maintenance of traffic (MOT) during construction. Part of DDOT's emphasis on context sensitive solutions (CSS) is to minimize the disruption that construction creates in neighboring areas.

DDOT attempts to maintain the same number of open lanes in the peak rush-hour direction as were available prior to construction, where possible. In some cases, shifting lanes between morning and evening rush-hours is effective at maintaining traffic flows, although this configuration can lengthen the overall period of construction. DDOT seeks to strike a balance between a greater disruption for a shorter period, or a lesser disruption for a greater span of time.

The viability of alternate routes represents an additional factor to be weighed when formulating an MOT plan. When a project is part of a greater overall program, such as the projects in the Master Plan, the desire to minimize disruption must also be weighed against the overall program schedule, as other efforts may be delayed by lengthened construction timeframes, as well as the construction of nearby developments in the project area.

Consideration of traffic inherently involves not only specific localized impacts unique to a given project, but also how those changes in traffic fit into the overall traffic network. Since several projects will be under construction at the same time in the AWI area, DDOT will examine the cumulative effects of all projects, including those that are not part of the AWI program. This requires coordination of all lane shutdowns for various projects, addressing traffic management with a holistic approach.

DDOT has requirements to ensure that MOT is a key element in the contractor's construction sequencing approach. In addition to identifying contract specific restrictions, DDOT creates corridor Special Provisions to address guidelines for multiple contractors who work concurrently on adjoining and/or overlapping projects. These may include special provisions for cooperation among contractors, milestone and access release dates for corridor dependencies, lane closure requests, haul routes, and staging.

#### 4.5.1 MOT Example: Frederick Douglass Memorial Bridge Rehabilitation

The recent rehabilitation of the Frederick Douglass Memorial Bridge illustrates how DDOT applies CSS to construction projects. DDOT had planned to rehabilitate parts of the Frederick Douglass Memorial Bridge, remove the South Capitol Street viaduct on the west side of the river, construct an intersection at South Capitol Street and Potomac Avenue, and reconstruct portions of South Capitol Street as an urban boulevard. All of this work was to be completed in a short time period—prior to the opening of the new Washington Nationals Ballpark, located adjacent to the project site.

Initially, the MOT concept was to divert the northbound lanes of South Capitol Street traffic during construction onto either 1st Street SE or a temporary elevated roadway alongside South Capitol Street. Another option was to divert the peak direction of South Capitol Street traffic onto one side of the viaduct while constructing the other side.

None of the initial scenarios were ideal. The diversion to 1st Street SE or onto a temporary elevated roadway would have impacted adjacent property, and diverting only the peak direction of traffic onto one side of South Capitol Street would have meant that the non-peak direction of traffic would be diverted to other roadways. The latter would have greatly extended the construction schedule and therefore the

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community disruption, since only one side of the structure could be reconstructed at a time. In addition, the effort of managing a variable-direction traffic flow would have added construction cost. Preliminary traffic analysis for this construction sequencing revealed that drivers would experience approximately fifteen additional minutes of delay for over a one-year period.

In order to develop a shorter construction schedule and minimize community disruption, the design of the project was changed to include the lowering of the Frederick Douglass Memorial Bridge in place via hydraulic jacking. The lowered bridge would connect to a new intersection with Potomac Avenue. Because the lowering of the bridge had to be done to both sides at the same time, the entire bridge would have to be closed to traffic for two months. DDOT decided that disrupting traffic patterns for two months was preferable to disrupting patterns for more than one year. The scheduling of the project was adjusted to correspond with the summer months, when peak-hour traffic is 10 to 15 percent lower than normal. In addition, the preparatory repair work leading up to the complete closure was shifted to weekend shutdowns of one side of the bridge at a time.

Preliminary traffic analysis of the complete closure revealed that drivers would experience additional delays of up to 30 minutes during peak periods. To mitigate the impacts, several construction strategies were used as part of DDOT's integrated MOT approach. Shoulder lanes on northbound I-295 were put into operation for travel, and the on-ramp at Howard Road was expanded to two lanes. Traffic signal operations were adjusted to account for additional traffic on arterial diversion routes. DDOT continued to monitor traffic throughout the two-month closure and made adjustments as needed.



# 5 Project Descriptions

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The projects that make up the AWI are described in detail in the following section. Each project's existing conditions and proposed improvements are described, along with considerations for implementation. All information presented in these descriptions represents the current status of each project as of December 2007.

For information on the location of each project, refer to the master map in Section 3 (Figure 3-2). Map reference numbers have been included for each project in this section.

## Frederick Douglass Memorial Bridge Rehabilitation

Map Reference #:

5

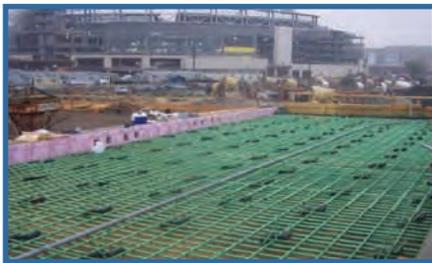
**Corridor:** South Capitol Street

**Project Cost:** \$32M

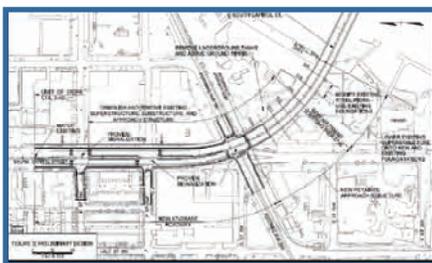
### Current Project Schedule:



Douglass Bridge conditions prior to construction



Douglass Bridge construction work, August 2007



Changes to Douglass Bridge

### Existing Conditions

The Frederick Douglass Memorial Bridge previously touched down on the west side of the Anacostia River between O and P Streets. One-way at-grade service roads ran alongside this elevated section of South Capitol Street, joining the mainline just south of N Street. The bridge was in need of structural repairs and streetlight improvements.

### Proposed Improvements

- Cleaning, painting, and repairing the bridge structure; replacing deteriorated structural steel members, deck joints, and bearings; milling and replacing the deck; repairing the deck drainage system; replacing streetlights; adding decorative floodlighting for piers; adding decorative streetlights; and replacing the pedestrian railing.
- The western approach from O Street to south of Potomac Avenue was demolished, and the remaining span of the bridge was lowered such that the new bridge approach meets the grade of Potomac Avenue. A new intersection at South Capitol Street and Potomac Avenue is being constructed, and between Potomac Avenue and N Street, South Capitol Street is being reconstructed with boulevard streetscape features.

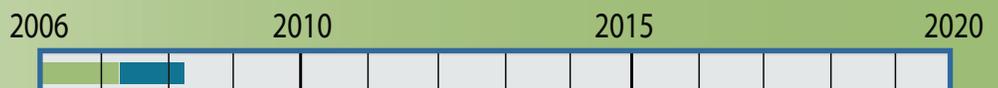
### Implementation

The bridge was closed during July and August 2007 to perform the demolition of the approach, lowering of the superstructure, construction of the abutment and approach structures, and construction of the at-grade roadway. Preparatory work, such as structural repair, was done prior to the bridge closure. Final paving and streetscape improvements will be completed by early 2008, prior to the opening of the new Washington Nationals Ballpark.

**Source:** DDOT

### Project Timeline

- Design
- Construction

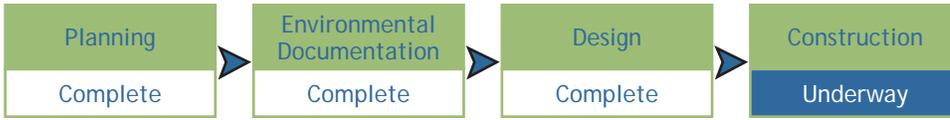


Map Reference #:

7

# South Capitol Street Near Term Improvements

## Current Project Schedule:



**Corridor:** South Capitol Street

**Project Cost:** \$35M

### Existing Conditions

The roadways surrounding the new Washington Nationals Ballpark and South Capitol Street had insufficient streetscape facilities and utility capacity to support planned and ongoing economic development. Additionally, other roadways and intersections in Wards 6 and 8 had insufficient pedestrian facilities and poor access for the disabled.

### Proposed Improvements

Reconstruction of Potomac Avenue SE, 1st Street SE, N Street SE, and I Street SE to widen, enhance streetscaping, provide on-street parking, and install ADA-compliant wheelchair ramps. Proposed improvements also include bike lanes on 1st Street SE and Potomac Avenue SE, a new traffic signal at Half and M Streets SE, and a new traffic signal and median barrier removal at South Capitol and N Streets. Finally, roadways adjacent to South Capitol Street and Suitland Parkway in Wards 6 and 8 are being repaved and improved with geometric modifications, wheelchair ramps, and crosswalks.

### Implementation

The near-term improvements are presently under construction and are scheduled to be completed by February 2008. DDOT has closely coordinated with utility providers so that needed upgrades, particularly for water and sewer, are being installed as the roadways are being reconstructed.

As with the Frederick Douglass Memorial Bridge Rehabilitation project, this work will be completed prior to the opening of the new Washington Nationals Ballpark.

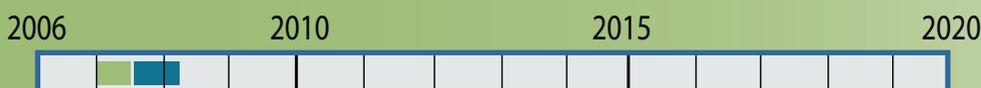
**Source:** DDOT



Unsafe crossing conditions on South Capitol Street prior to construction



Pedestrian improvements on M Street SE



## Project Timeline

Design ■  
Construction ■

*2007 Update*

## South Capitol Street Long Term Improvements

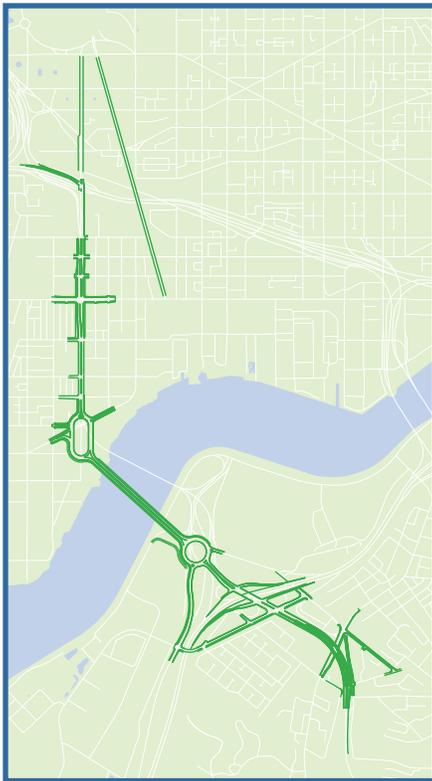
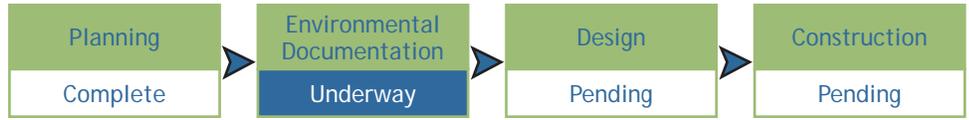
Map Reference #:

16

**Corridor:** South Capitol Street

**Project Cost:** \$970M

### Current Project Schedule:



South Capitol Street Build Alternative 2

### Existing Conditions

Though Pierre L'Enfant envisioned South Capitol Street as a symbolic gateway in his 1791 plan, the street was eventually constructed as a utilitarian arterial and freeway. It has multiple grade separations with its cross streets, including the urban diamond interchange at M Street. East of the river, South Capitol Street splits into northbound and southbound roadways that run south until the Anacostia Naval Annex. Suitland Parkway merges with South Capitol Street in a complicated series of ramps. Suitland Parkway connects to I-295 at an interchange that only provides some traffic movements; the rest are provided via local street connections. There is no present connection between Suitland Parkway and Martin Luther King, Jr. Avenue.

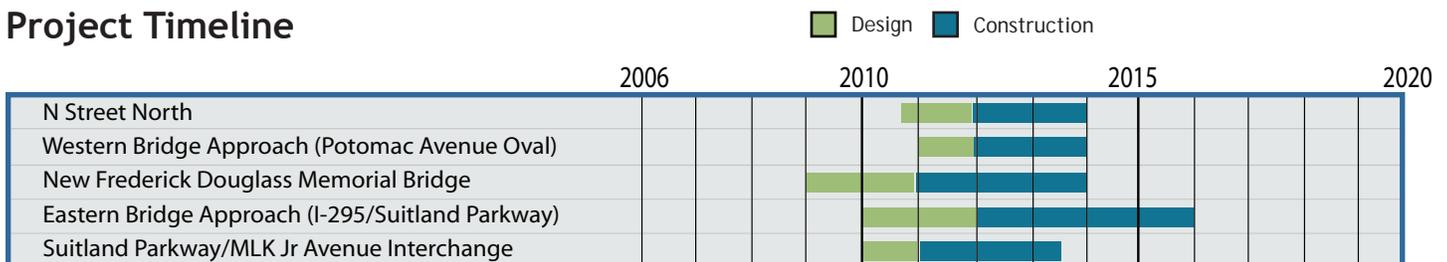
### Proposed Improvements

An EIS is currently underway for the South Capitol Street corridor, and the improvements associated with this area were originally investigated and defined in the South Capitol Gateway and Corridor Improvement Study and the Anacostia Access Studies.

The Build Alternatives for South Capitol Street include:

- Reconstructing portions of South Capitol Street as an at-grade urban boulevard with signalized intersections;
- Replacing the northbound South Capitol Street ramp to I-395 with a ramp just north of the SE-SW Freeway, modifying the signalized intersection underneath the freeway;
- Replacing the urban diamond interchange at South Capitol Street and M Street with an at-grade signalized intersection (Build Alternative 2);

### Project Timeline



- Replacing the existing Frederick Douglass Memorial Bridge with a new, lower bridge on a different alignment;
- Creating an at-grade intersection with South Capitol Street and Suitland Parkway;
- Reconstructing the interchange of I-295 and Suitland Parkway to include additional traffic movements and safer geometry;
- Creating a new interchange at Suitland Parkway and Martin Luther King, Jr. Avenue (Build Alternative 2); and
- Reconstructing part of New Jersey Avenue SE to include streetscape improvements.

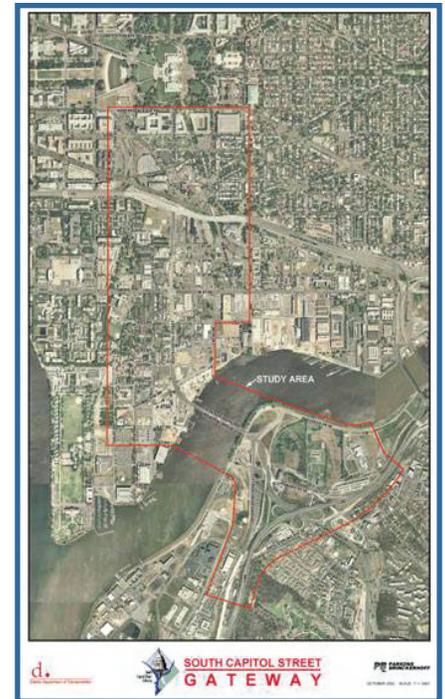
### Implementation

The South Capitol Street EIS is scheduled to obtain a Record of Decision in late 2008. After that, detailed design work can begin.

The following potential construction phases have been established for South Capitol Street improvements:

1. New Frederick Douglass Memorial Bridge
2. Reconsruction of interchanges at:
  - Suitland Parkway & South Capitol Street
  - Suitland Parkway & I-295
3. Suitland Parkway & Martin Luther King, Jr. Avenue interchange (Build Alternative 2)
4. South Capitol Street & M Street reconstruction as at-grade intersection (Build Alternative 2)
5. Replacement of the northbound South Capitol Steet to I-395 ramp

**Source:** DDOT



South Capitol Street Study Area



South Capitol Street Gateway Rendering

## Middle Anacostia Crossings Near Term Improvements

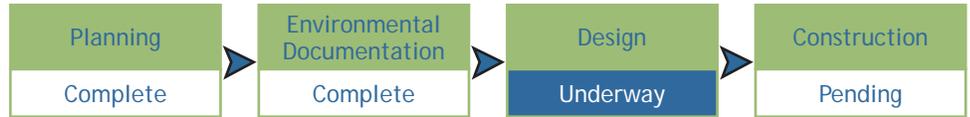
Map Reference #:

12

**Corridor:** Middle Anacostia Crossings

**Project Cost:** \$24M

### Current Project Schedule:



Middle Anacostia Crossings existing conditions



Planned Middle Anacostia Crossings Improvements

### Existing Conditions

During the AM peak period, the following two signalized intersections currently experience failing levels of service: Pennsylvania Avenue/ramp to Northbound D.C. 295; and Pennsylvania Avenue/L'Enfant Square. The current conditions of the roadway surfaces of Good Hope Road and Minnesota Avenue are very poor and may be a contributing factor to the reduced flow of traffic in these sections of the study area.

In addition, the existing Pennsylvania Avenue / Minnesota Avenue intersection, consisting of two independent signalized intersections at L'Enfant Square, is susceptible to traffic problems due to the large number of left-hand turning motions. The existing configuration also creates safety problems for the large number of pedestrians which must cross in order to reach bus stops.

Likewise, the combination of heavy traffic volumes, transit and pedestrian activity associated with the Potomac Avenue Metro Station, numerous bus stops, and close interaction with 14th Street make the intersection of Pennsylvania Avenue and Potomac Avenue confusing and difficult to negotiate for both pedestrians and motorists.

### Proposed Improvements

- Signing and pavement marking improvements along the Sousa Bridge and the ramp to the Southeast Freeway, including an adjustment to the sequence of overhead signing along the westbound approach of the Sousa Bridge to be in accordance with the Manual of Uniform Traffic Control Devices (MUTCD);
- Signal timing optimization along Pennsylvania Avenue, east of the Anacostia River;
- Roadway resurfacing and pavement marking replacement;
- Improvements to the pedestrian bridge between Anacostia High School and Anacostia Park, and connectivity improvements to nearby recreation center;

### Project Timeline

- Design
- Construction



- Pedestrian, bicycle network, and bus stop amenity spot improvements throughout the study area.
- Reconfiguration of the intersection at Pennsylvania Avenue and Minnesota Avenue so that Pennsylvania Avenue would consist of three through lanes in each direction, and Minnesota Avenue would consist of a counter-clockwise circulating roadway around L'Enfant Square. All turns to and from the square would be right turns, eliminating the need for left turn lanes and exclusive left-turn signals.
- Reconfiguration of the intersection at Pennsylvania Avenue and Potomac Avenue into an oval-shaped roundabout that maintains four lanes along Pennsylvania Avenue. A larger, more consolidated pedestrian refuge area is achieved with this configuration and the combined aspects of the proposed crosswalk locations and new median area offer pedestrians a more direct path to get to and from the Potomac Avenue Metro Station.



Proposed Intersection Improvements at Pennsylvania and Minnesota Avenues

### Implementation

Construction will begin on these near-term improvements in 2008.

**Sources:** 2005 Middle Anacostia River Crossings Transportation Study and Pennsylvania Avenue Concept Study (DDOT)



Proposed Intersection Improvements at Pennsylvania and Potomac Avenues

## 11th Street Bridges

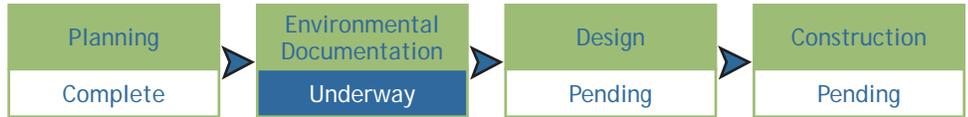
Map Reference #:

15

**Corridor:** Middle Anacostia Crossings

**Project Cost:** \$661M

### Current Project Schedule:



11th Street Bridge Existing Conditions

### Existing Conditions

The traffic movements on the 11th Street Bridges are incomplete and mix local and regional traffic, which causes excessive weaving and merging maneuvers. While all traffic movements are presently provided on the west side of the river, many are not provided on the east side.

Southbound motorists on the Anacostia Freeway cannot access the bridges; nor can motorists on the bridges go north onto the Freeway. The ramps to make these connections do not exist. This results in commuter traffic to and from the north driving through neighborhood streets to get to their destinations.



Movements missing from the existing 11th Street Bridges configuration

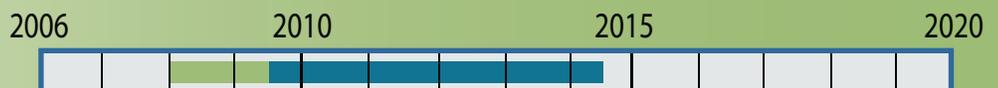
### Proposed Improvements

The District Department of Transportation (DDOT) in conjunction with the Federal Highway Administration (FHWA), propose to reconstruct and reconfigure the interchange of the Southeast/Southwest Freeway and the Anacostia Freeway over the Anacostia River, a distance of approximately 1 mile. The key design features of the preferred alternative are:

- The Preferred Alternative each would provide a reconstructed eight-lane freeway bridge along the alignment of the existing 11th Street Bridge as well as a local four-lane bridge crossing on the current alignment of the Officer Welsh bridge. Both of these structures would accommodate two-way traffic on each structure. Pedestrian and bike facilities would be adjacent to the local travel lanes.
- New ramps east of the Anacostia River will connect both directions of the Anacostia Freeway with cross-river freeway bridges (Exhibit 2-1). Currently only the southern reach of the Anacostia Freeway is directly linked to the bridges.
- The Preferred Alternative provides a service interchange with the Anacostia Freeway.
- The Southeast/Southwest Freeway, the Southeast Boulevard (project #20 on Fig. 3-2) and 11th Street will connect through at-grade intersections on the local street grid. Traffic going from the Southeast/

### Project Timeline

■ Design  
■ Construction



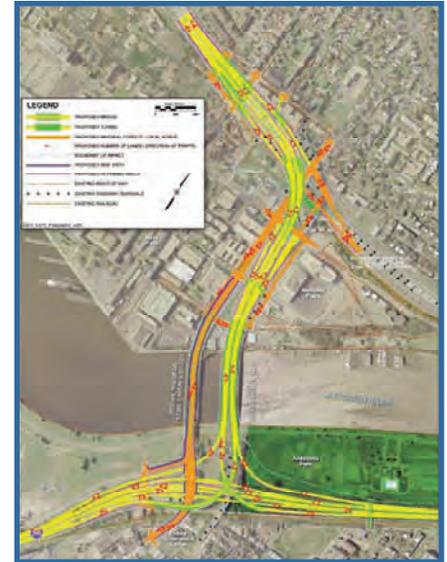
Southwest Freeway to the Southeast Boulevard will have to go through a traffic signal.

- The Preferred Alternative maintains two-way traffic on both 11th and 12th Streets within the study area.

### Implementation

A Preferred Alternative has been selected and the Final EIS is available for review. The public comment period was completed on November 20, 2007. A Record of Decision for the project is expected in 2008, after which detailed design work can begin.

**Sources:** 2005 Middle Anacostia River Crossings Transportation Study and 2007 11th Street Bridges FEIS (DDOT)



11th Street Bridges Preferred Alternative

## Barney Circle

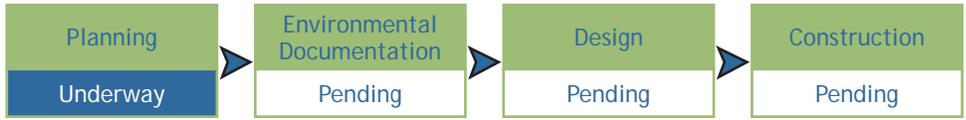
Map Reference #:

21

**Corridor:** Middle Anacostia Crossings

**Project Cost:** \$44M

### Current Project Schedule:



Barney Circle existing conditions



Barney Circle planned improvements

### Existing Conditions

On the west side of the Anacostia River, Barney Circle connects Pennsylvania Avenue with the Southeast Freeway. This junction does not operate as a true traffic circle because many of the movements are not provided. Some additional existing issues are listed below:

- Underutilized pavement along Southeast (SE) Freeway underneath Barney Circle;
- Commuter traffic on local roads; and
- Lack of connection to Anacostia Park and Waterfront areas.

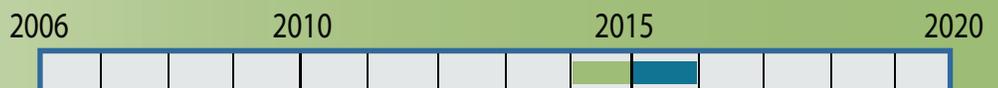
### Proposed Improvements

Related and adjacent projects include converting the Southeast Freeway to an urban boulevard between the 11th Street Bridge and Pennsylvania Avenue. The boulevard would feed directly into the new Barney Circle that would service all movements. The proposed circle configuration would provide better connectivity to Anacostia Park and the Waterfront; , as well as providing increased landscape opportunities.

**Source:** 2005 Middle Anacostia River Crossings Transportation Study (DDOT)

### Project Timeline

- Design
- Construction

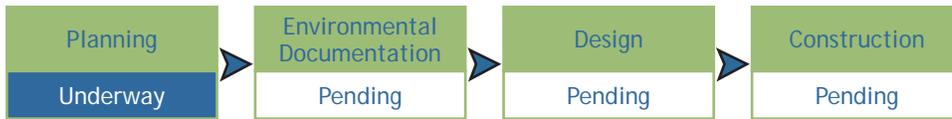


Map Reference #:

22

# Pennsylvania Avenue/ Anacostia Freeway Interchange

## Current Project Schedule:

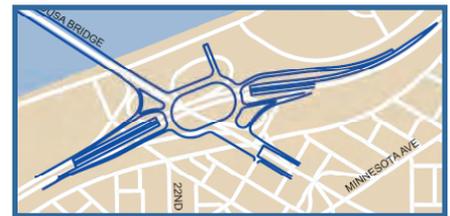


**Corridor:** Middle Anacostia Crossings

**Project Cost:** \$42M

## Existing Conditions

The John Phillip Sousa Bridge carries Pennsylvania Avenue over the Anacostia River. Because it is not possible for vehicles crossing the 11th Street Bridge to go north on The Anacostia Freeway, the Sousa Bridge is used to make this heavily congested movement. In addition, the interchange east of the river does not allow for the southbound-Anacostia Freeway-to-westbound-Pennsylvania Avenue traffic movement. Pennsylvania Avenue, the Southeast Freeway and the Anacostia Freeway are all evacuation routes and truck routes for the District.



Planned improvements at Pennsylvania Avenue and Anacostia Freeway

## Proposed Improvements

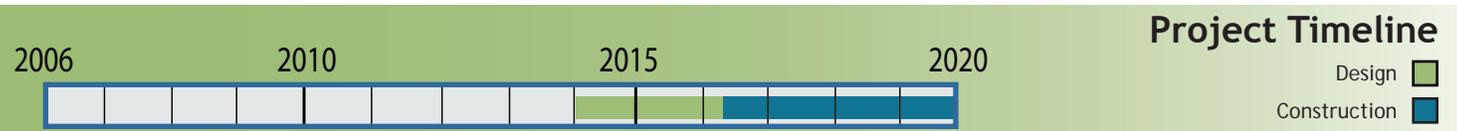
The improvements associated with the Pennsylvania Avenue Interchange project include:

- Reconstructing the Pennsylvania Avenue/Anacostia Freeway interchange to be a signalized traffic oval providing all movements.
- Lowering the Anacostia Freeway below Pennsylvania Avenue in a tunnel or depressed freeway.
- Reconstructing the Southeast Freeway/Pennsylvania Avenue/RFK Stadium Access Road junction as an at-grade signalized traffic circle.

## Implementation

The reconfiguration of the I-295/11th Street/Anacostia Freeway interchange will provide a key northbound traffic movement that presently causes congestion on the Sousa Bridge. The improvements associated with this project provide key local connections that can be constructed once the regional (11th Street and 14th Street Bridges) and urban arterials (South Capitol Street Corridor) are completed.

**Source:** 2005 Middle Anacostia River Crossings Transportation Study (DDOT)



2007 Update

## Southeast Boulevard

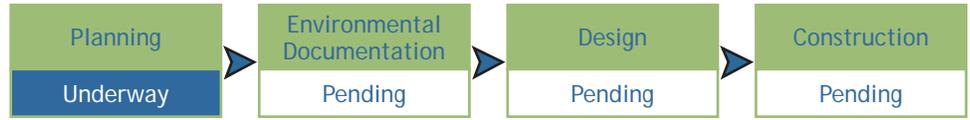
Map Reference #:

20

**Corridor:** Middle Anacostia Crossings

**Project Cost:** \$41M

### Current Project Schedule:



Southeast Boulevard existing conditions



Southeast Boulevard proposed configuration

### Existing Conditions

Currently, the Southeast Freeway comes to an abrupt end just to the west of Barney Circle, and its traffic spills out onto local roads. Because it maintains its high-speed freeway configuration up until the point where it ends, the segment between 11th Street and Barney Circle contains an abundance of underutilized pavement.

### Proposed Improvements

A boulevard configuration in the Southeast Freeway right-of-way between 11th Street and Barney Circle would provide a more appropriate transportation use within this area. To maintain flexibility in land use, four plans to redevelop the Southeast Freeway right-of-way with a boulevard design have been prepared. Three typical sections envisioned for the boulevard have also been developed. These plans and cross-sections can be implemented in several combinations to best meet the needs of the neighborhood.

### Implementation

In general, the boulevard would be developed as a four-lane, divided minor arterial. Pedestrian and bicycle accessibility would be provided adjacent to the roadway by a shared use trail. Enhanced landscaping would also be applied to medians, buffer zones and all other areas where existing pavement is removed. This would assist in providing a better connection between the neighborhoods and the waterfront by creating a park-like environment, accessible to all modes of travel.

**Source:** 2005 Middle Anacostia River Crossings Transportation Study (DDOT)

### Project Timeline

- Design
- Construction

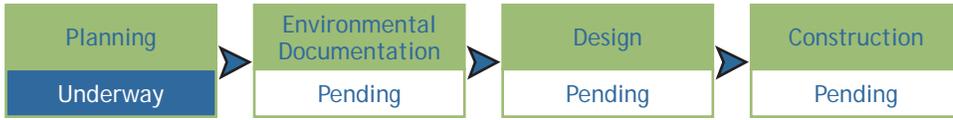


Map Reference #:

24

# Reservation 13 Roadway

## Current Project Schedule:



### Existing Conditions

The Reservation 13 site has historically been isolated from adjacent neighborhoods. The site includes major institutional uses such as a hospital and a correctional facility. Its limited connectivity continues today; in particular, there is no direct connection from Independence Avenue to points south.

The roadway from Barney Circle to the RFK Stadium is presently owned by the National Park Service. The main use of this roadway is to connect the Southeast Freeway with RFK Stadium parking facilities. The road runs along the Anacostia waterfront and is used by many groups of recreational users. This route is not an official District of Columbia roadway and is not maintained as such.

### Proposed Improvements

The improvements associated with the Reservation 13 Road project include replacing a section of the RFK Stadium access road with a two-lane low speed road with bicycle accommodations. The new roadway will follow the RFK Stadium access road alignment between Barney Circle and the southeastern corner of the Reservation 13 site, where it will connect with the future Massachusetts Avenue extension. The roadway will then curve to the north, running along Reservation 13's eastern border, and ultimately connect with Independence Avenue. The road will provide access to the adjacent Anacostia Riverwalk Trail.

### Implementation

Design work is expected to begin intersection in 2008.

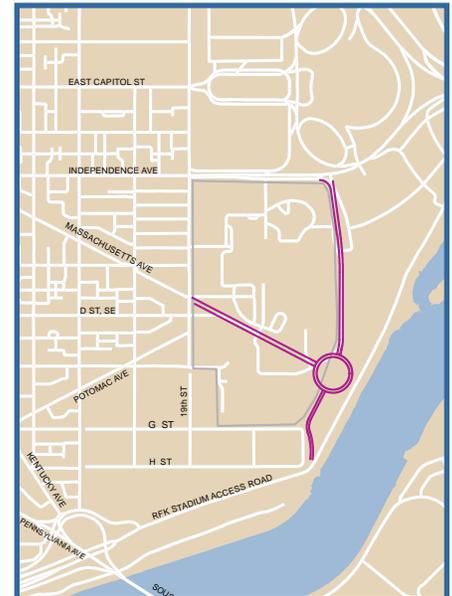
**Source:** 2005 Middle Anacostia River Crossings Transportation Study (DDOT)

Corridor:

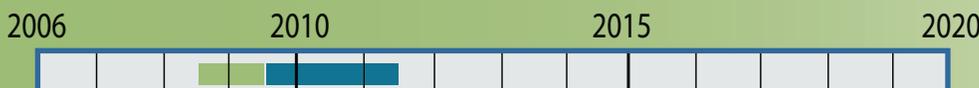
Middle Anacostia Crossings

Project Cost:

\$8M



Reservation 13 Roadway Improvements



## Project Timeline

Design ■  
Construction ■

2007 Update

## Kenilworth Avenue Corridor Near Term Improvements

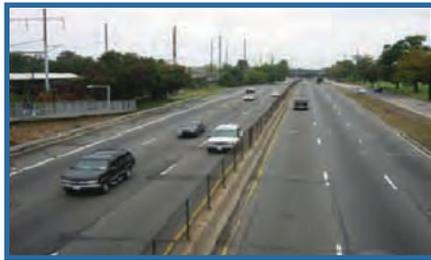
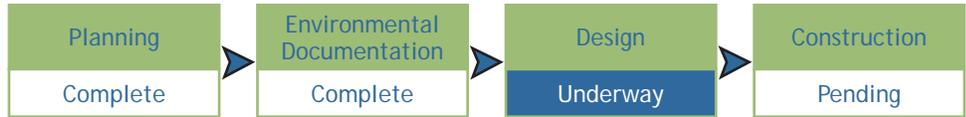
Map Reference #:

13

**Corridor:** Kenilworth Avenue

**Project Cost:** \$18M

### Current Project Schedule:



Existing Conditions-north of Benning Road



Existing Pedestrian Conditions

### Existing Conditions

Access to and across Anacostia Freeway/Kenilworth Avenue is provided via interchanges with Pennsylvania Avenue SE, East Capitol Street, Benning Road NE, Nannie Helen Burroughs Avenue NE, and Eastern Avenue. In its current configuration, Kenilworth Avenue presents a major barrier to pedestrian and bicycle movement.

### Proposed Improvements

- Creation of a new connection to allow traffic on westbound East Capitol Street to exit southbound and northbound onto Kenilworth Avenue.
- Consolidation and realignment of the slip ramps between Kenilworth Avenue and the parallel service road north of Nannie Helen Burroughs Avenue.
- Implementation of a corridor wide landscaping, signage, and street furniture program.
- General improvements to the pedestrian and bicycle throughway, curb ramps, pedestrian roadway, lighting and signal, and bicycle parking through specific projects and as part of area wide programs.
- Installation of additional lighting throughout the corridor in locations where lighting is lacking
- Upgrades to signage to meet FHWA Standards and to effectively communicate major exits.

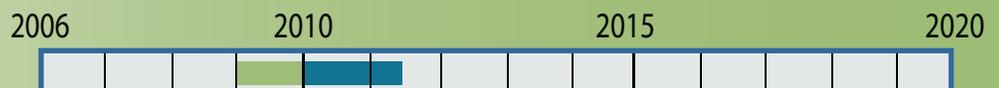
### Implementation

Near-term improvements can be implemented within three to five years. These projects may be implemented in conjunction with each other or independently.

**Source:** 2007 Kenilworth Avenue Corridor Study (DDOT)

### Project Timeline

- Design
- Construction

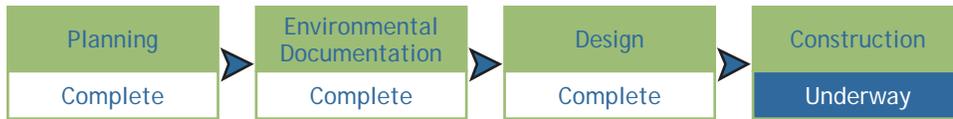


Map Reference #:

6

# Nannie Helen Burroughs Interchange

## Current Project Schedule:

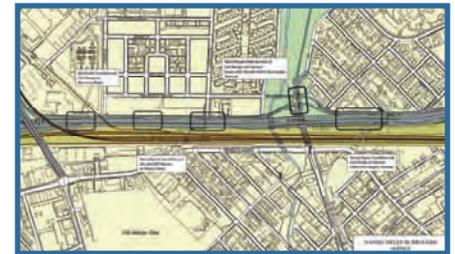


Corridor: Kenilworth Avenue

Project Cost: \$28M

### Existing Conditions

Nannie Helen Burroughs Avenue passes underneath Kenilworth Avenue and the adjacent CSX Railroad tracks. Access for pedestrians and bicyclists is constrained due to the narrowness of the underpasses. In addition, there is no night lighting or clear demarcation of pedestrian paths at street intersections to encourage walking.



Urban Design Plan of Kenilworth Avenue Corridor

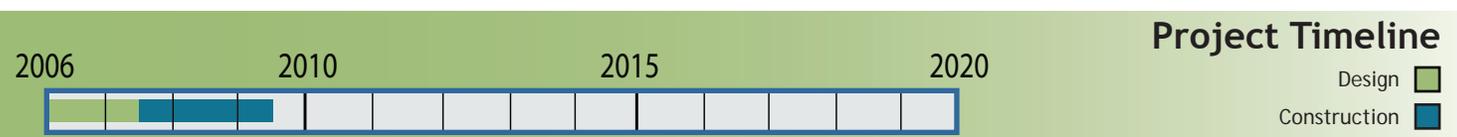
### Proposed Improvements

- Reconstructing the bridge providing a wider section for Nannie Helen Burroughs Avenue beneath Kenilworth Avenue that allows for an additional lane and wider sidewalks for pedestrians and bicyclist.
- Making safety improvements for the exit ramp to Nannie Helen Burroughs Avenue and reconfiguring the exit ramp and service road on southbound Kenilworth Avenue, north of Nannie Helen Burroughs Avenue.
- Eliminating the exit ramp immediately before Benning Road and reconfiguring the remaining on- and off -ramps to improve safety on southbound Kenilworth Avenue, south of Nannie Helen Burroughs Avenue.
- Signalizing the new ramp connection and service road where they intersect with Nannie Helen Burroughs Avenue, and providing traffic signal systemization along Nannie Helen Burroughs Avenue to Minnesota Avenue.
- Improving lighting along Kenilworth Avenue between Foote Street and Lane Place.

### Implementation

Construction is currently underway.

Source: 2007 Kenilworth Avenue Corridor Study (DDOT)



2007 Update

# Kenilworth Avenue/ East Capitol Street Interchange

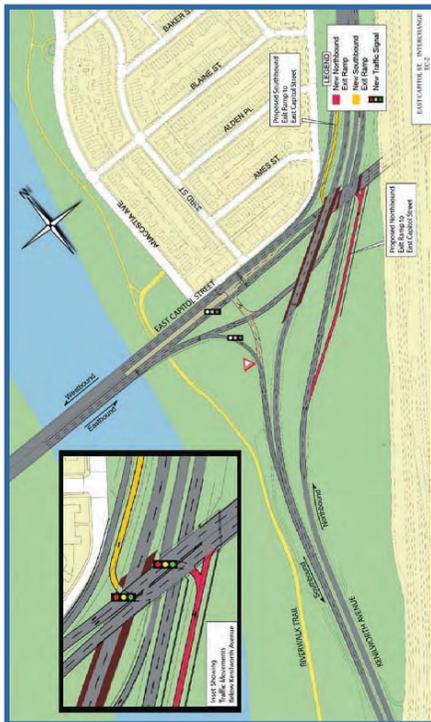
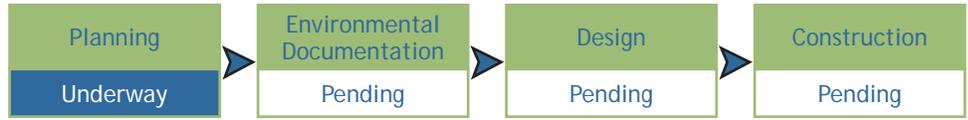
Map Reference #:

25

**Corridor:** Kenilworth Avenue

**Project Cost:** \$78M

## Current Project Schedule:



East Capitol Street Interchange Design

## Existing Conditions

The existing interchange does not provide for movements from northbound or southbound Kenilworth Avenue to eastbound East Capitol Street, from northbound Kenilworth Avenue to westbound East Capitol Street, or from westbound East Capitol Street to northbound or southbound Kenilworth Avenue.

## Proposed Improvements

Improvements associated with the East Capitol Street Interchange include reconstruction of the Kenilworth Avenue/East Capitol Street interchange similar to the existing interchange or as an urban diamond, but with Kenilworth Avenue realigned to the east closer to the CSX railroad tracks, thus providing new open space between Kenilworth Avenue and the Anacostia River.

## Implementation

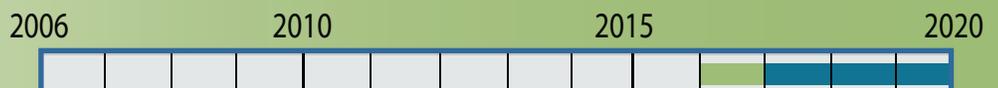
The Benning Road and East Capitol Street interchanges should not proceed simultaneously, nor should either proceed at the same time as the improvements on New York Avenue, as each of these roadways provides an alternative to the other during construction. However, due to the proximity of the ramps for the Benning Road and East Capitol Street interchanges (1200 to 1500 feet between adjacent ramps), if the depressed option is selected for Kenilworth, it may be preferable to reconstruct these interchanges simultaneously to ease the transition between the two along Kenilworth Avenue.

Neither the Benning Road nor the East Capitol Street interchange should proceed simultaneously with the improvements proposed in the Middle Anacostia River Crossings Transportation Study at Anacostia Freeway / Pennsylvania Avenue SE or Barney Circle, as Pennsylvania Avenue is a viable alternative to either roadway during construction.

**Source:** 2007 Kenilworth Avenue Corridor Study (DDOT)

## Project Timeline

- Design
- Construction

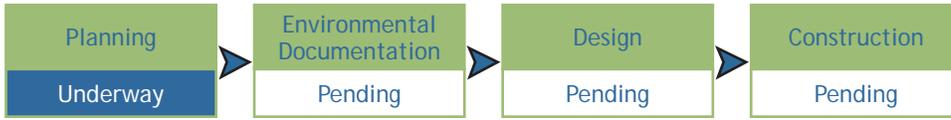


Map Reference #:

26

# Kenilworth Avenue/ Benning Road Interchange

## Current Project Schedule:



Corridor: Kenilworth Avenue

Project Cost: \$168M

## Existing Conditions

The existing interchange does not provide for movements from northbound or southbound Kenilworth Avenue to eastbound Benning Road, or from westbound Benning Road to northbound or southbound Kenilworth Avenue.

## Proposed Improvements

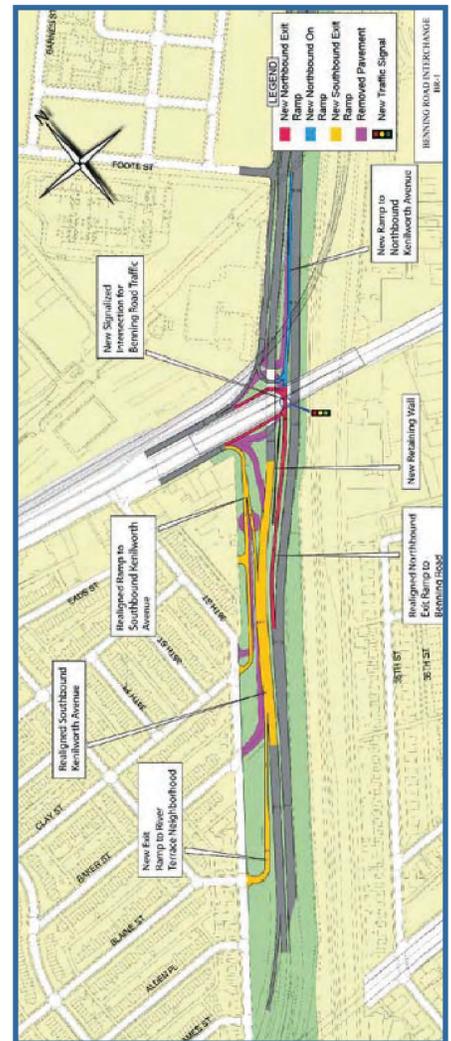
Improvements associated with the Benning Road Interchange include reconstruction of the Kenilworth Avenue/Benning Road interchange as a multi-level diamond interchange carrying Benning Road over Kenilworth Avenue and providing for all movements.

## Implementation

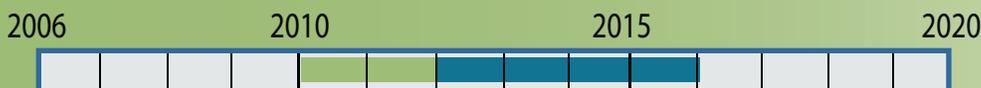
Due to the increased turning capacity provided by the proposed Benning Road interchange, it would be preferable to construct this interchange prior to the East Capitol Street interchange to provide drivers with a more viable option to avoid East Capitol Street.

Neither the Benning Road nor the East Capitol Street interchange should proceed simultaneously with the improvements proposed in the Middle Anacostia River Crossings Transportation Study at Anacostia Freeway / Pennsylvania Avenue SE or Barney Circle, as Pennsylvania Avenue is a viable alternative to either roadway during construction.

Source: 2007 Kenilworth Avenue Corridor Study (DDOT)



Benning Road Interchange Scenario



## Project Timeline

Design [light green box]  
Construction [dark blue box]

2007 Update

## Kenilworth Avenue/ Eastern Avenue Interchange

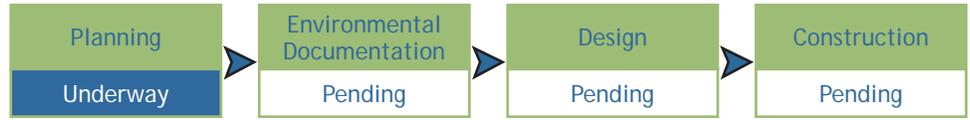
Map Reference #:

27

**Corridor:** Kenilworth Avenue

**Project Cost:** \$57M

### Current Project Schedule:



Eastern Avenue Existing Conditions

### Existing Conditions

The primary limitation of the existing interchange is the poor pedestrian environment and lack of landscaping and streetscape features. Pedestrians are forced to cross the corridor on a narrow concrete median that separates the turning traffic on Eastern Avenue from the Kenilworth Avenue traffic using the U-turns. The bridge itself is visually unappealing with a design that dates to the 1950s. Because of substandard clearances over Kenilworth Avenue, the Eastern Avenue bridge has been repeatedly hit by over-height vehicles.

### Proposed Improvements

The proposed scenario maintains both U-turn ramps, but relocates them further from the intersection to provide space for pedestrian and landscape improvements, including pedestrian lighting. This scenario requires reconstruction of the bridge to create a wider bridge deck.



Eastern Avenue Improvements

### Implementation

A new pedestrian/bicycle connection between the end of Anacostia Avenue and Eastern Avenue provides additional access to the Anacostia waterfront and the surrounding neighborhoods and attractions.

**Source:** 2007 Kenilworth Avenue Corridor Study (DDOT)

### Project Timeline

- Design
- Construction

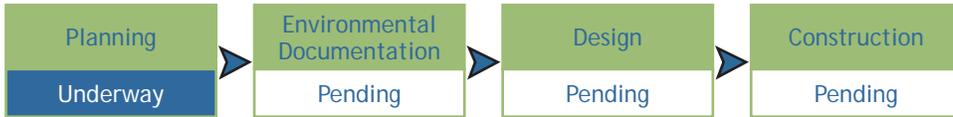


Map Reference #:

28

# Kenilworth Avenue Mainline Improvements

## Current Project Schedule:



Corridor: Kenilworth Avenue

Project Cost: \$TBD

## Existing Conditions

Kenilworth Avenue currently presents a major barrier to pedestrian and bicycle movement east of the Anacostia River. In addition, the roadway is hampered by several short merging zones and the resultant weaving traffic patterns.

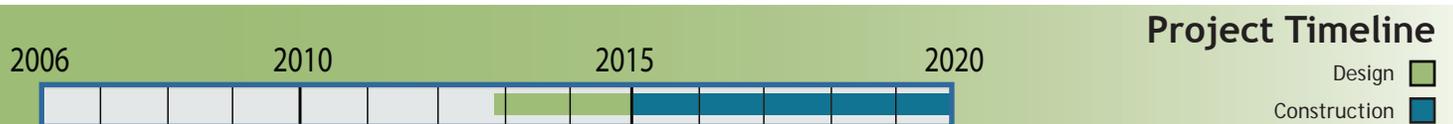
## Proposed Improvements

Reconstruction of Anacostia Freeway/Kenilworth Avenue from north of the Anacostia Freeway/Pennsylvania Avenue interchange to the DC/Maryland border. The roadway would be reconstructed as either an eight-lane urban boulevard, a four-lane or six-lane limited-access roadway flanked by access roads, or a combination of an at-grade four-lane roadway between Pennsylvania Avenue and East Capitol Street and a depressed six-lane roadway flanked by at-grade access roads from East Capitol Street to the DC/Maryland border.

## Implementation

If the depressed roadway option is chosen for Kenilworth Avenue, a new vehicular crossing of Kenilworth Avenue at Nash Street and a new pedestrian crossing at Douglas Street will be included. All options will provide landscaping and bicycle/pedestrian improvements throughout the corridor.

Source: 2007 Kenilworth Avenue Corridor Study (DDOT)



2007 Update

## 4th Street SW Reconstruction

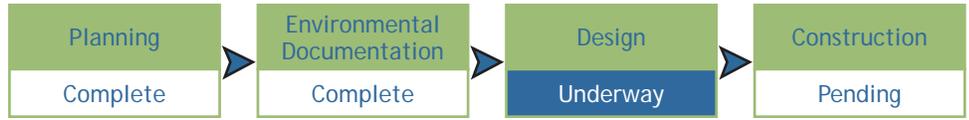
Map Reference #:

10

**Corridor:** Southwest Waterfront

**Project Cost:** (Done by others)

### Current Project Schedule:



4th Street SW Existing Conditions

### Existing Conditions

Between Eye and M Streets SW, the right-of-way of 4th Street SW is interrupted by the Waterside Mall complex, a retail and office development built during the 1960s. A traffic study conducted by DDOT in 2002 and 2003 showed rather high average daily traffic numbers (4800 vehicles per day) for 3rd Street SW. Much of this high traffic load can be attributed to the lack of a through-connection on 4th Street. Additional traffic spillover effects are felt on Eye and M streets as part of the route around Waterside Mall.

### Proposed Improvements

4th Street will be re-created between Eye and M Streets.

### Implementation

A large, multi-use development, to include over 1 million square feet each of office space and residential space and more than 100,000 square feet of retail space, is planned for the site of the existing Waterside Mall. Much of the proposed development is predicated on street front-oriented retail along the new segment of 4th Street. The site's developers will undertake the reconstruction of 4th Street.

**Sources:** 2003 Fourth Street SW Transportation Study (DDOT)

### Project Timeline

- Design
- Construction

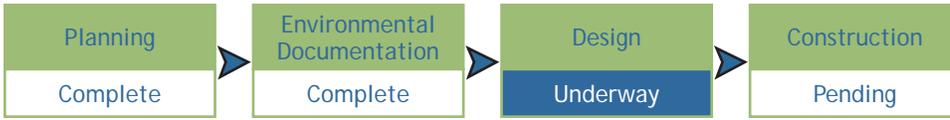


Map Reference #:

9

# Maine Avenue Improvements

## Current Project Schedule:



### Existing Conditions

Maine Avenue SW connects directly to M Street SW, I-395, and 14th Street SW. The intersection of Maine Avenue and 9th Street SW currently operates at a poor level of service.

### Proposed Improvements

The Maine Avenue SW improvements comprise a smaller area than other AWI improvements. These improvements include installing a signalized intersection on Maine Avenue between 9th and 12th Streets. The new intersection would include a median break on Maine Avenue so that vehicles can turn in and out of the Fish Market entrance and so that pedestrians can safely cross Maine Avenue. In addition, the developer of the Southwest Waterfront mixed-use development will remove a section of Water Street from near the new intersection to past M Street SW.

### Implementation

This project will be mostly completed by the developers of the Southwest Waterfront mixed-use development. DDOT's only construction responsibility will be the the new intersection on Maine Avenue, which will total \$1.5 million.

### Assumptions

These improvements are part of the larger AWI vision for the Southwest waterfront. This vision includes an accessible waterfront with commercial and housing development alongside. The transportation improvements associated with this development, however, are assumed to be relatively minor. Related and adjacent projects include the work on the 14th Street Bridges and South Capitol Street (at the M Street intersection).

Source: 2005 Maine Avenue Traffic Study (DDOT)

Corridor: **Southwest Waterfront**

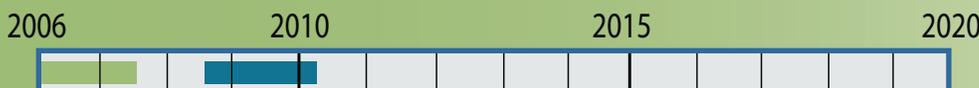
Project Cost: (DDOT portion \$1.5M, remainder done by others)



Maine Avenue Study Area



Maine Avenue Improvements



## Project Timeline

Design █  
Construction █

2007 Update

## Anacostia Riverwalk

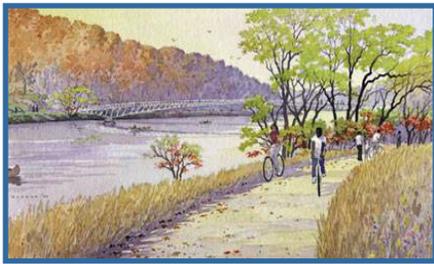
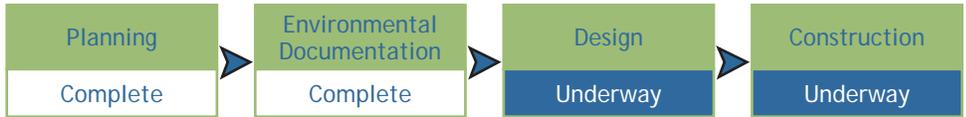
Map Reference #:



**Corridor:** Riverwalk

**Project Cost:** \$105M

### Current Project Schedule:



Anacostia Riverwalk design concept

### Existing Conditions

Currently the Anacostia River waterfront on both the west and east banks suffers from neglect and is not conducive to enjoyment of the river by the public.

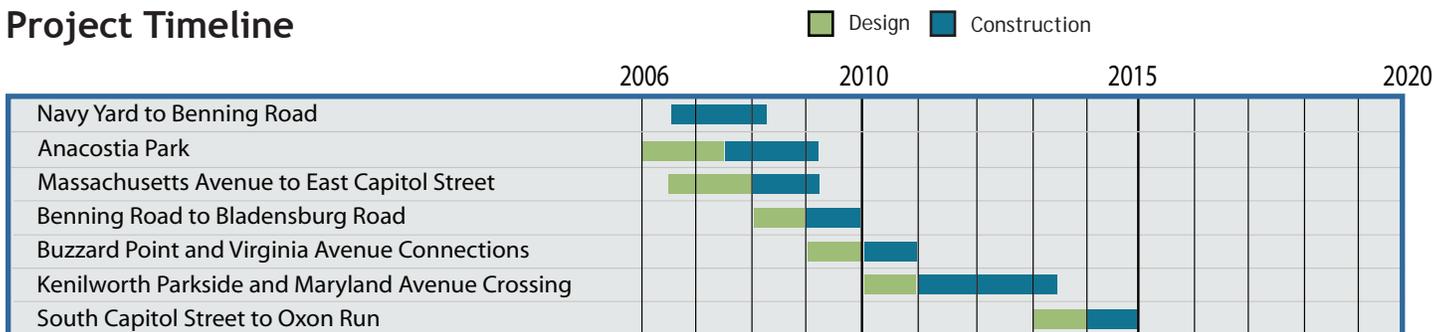
### Proposed Improvements

The Anacostia Riverwalk is a planned 16-mile multi-use trail along the east and west banks of the Anacostia River in Washington, DC. The vision for this continuous Riverwalk is a key component of the Anacostia Waterfront Initiative (AWI) Framework Plan. It realizes several AWI goals such as enhancing parkland and increasing access to waterfront destinations.

DDOT has taken the lead in planning and constructing the Riverwalk as a recreational amenity and transportation alternative for Washington residents. The trail will vary in width from 10 ft to 12 ft to ensure comfort for a wide range of users including bicyclists, inline skaters, pedestrians, disabled people, and others. Periodic waysides will provide seating, system maps, bike racks, and interpretive exhibits.

When completed, it will connect sixteen waterfront neighborhoods to the Anacostia National Park and the Anacostia River. Washington residents and visitors will be able to walk and bike on the Riverwalk to several popular destinations, including the Fish Wharf, the new baseball stadium, Poplar Point, the Navy Yard, historic Anacostia, RFK stadium, Kingman Island, and The National Arboretum. At either end,

### Project Timeline

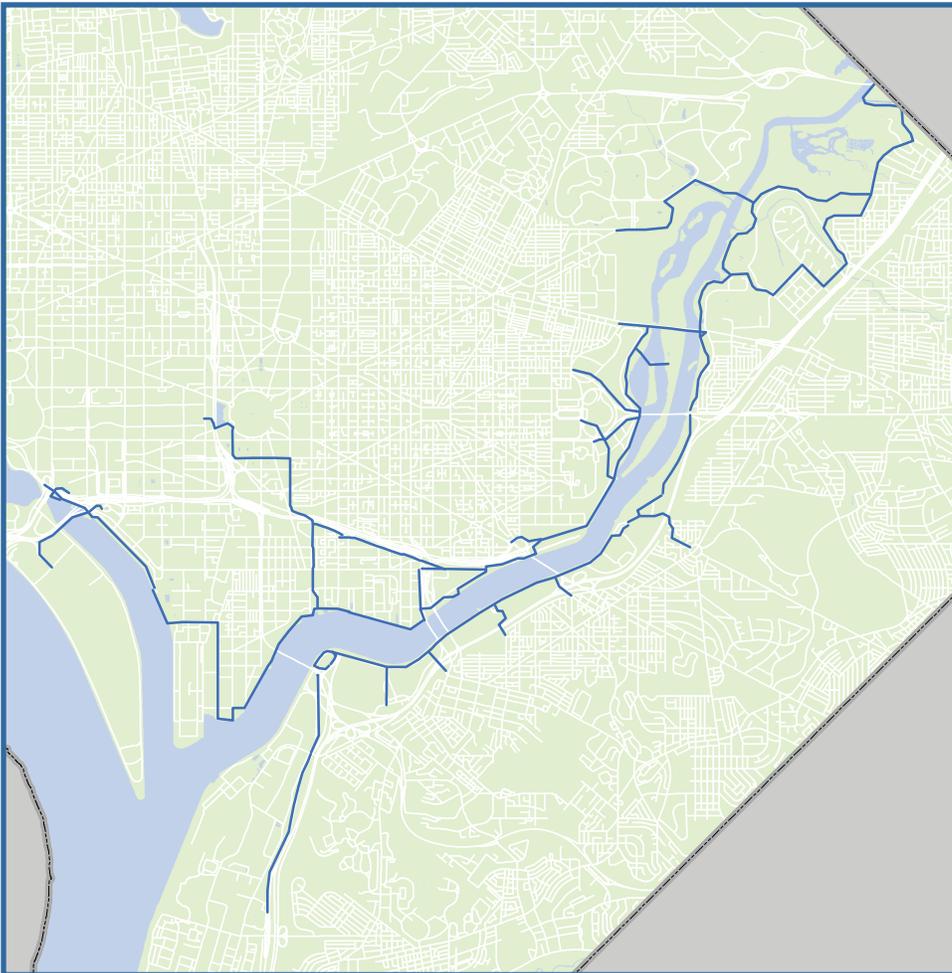


the trail will connect to the National Mall at the Tidal Basin and to the Bladensburg Marina Park in Prince George's County, MD.

### Implementation

Riverwalk trail connections will be sequenced with the construction of 11th Street and South Capitol Street bridges. Existing trail sections will be maintained during construction of connecting elements.

**Source:** 2006 Anacostia Riverwalk Trail Factsheet (DDOT)



Full extent of the Anacostia Riverwalk upon completion

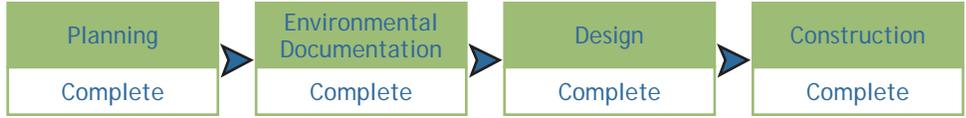
## Martin Luther King, Jr. Two-Way Reconstruction

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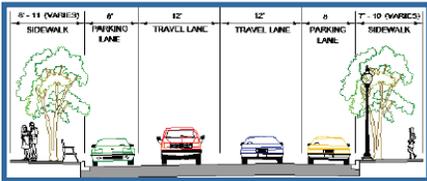
1

**Corridor:** AWI-Wide

### Current Project Schedule:



Martin Luther King, Jr. Avenue prior to reconstruction.



New lane configuration of Martin Luther King, Jr. Avenue

### Existing Conditions

Previously, Martin Luther King, Jr. Avenue SE operated as a one-way street between W Street SE and Good Hope Road. South of W Street, Martin Luther King, Jr. Avenue is a four-lane, undivided two-way road.

### Proposed Improvements

In an effort to revitalize the urban fabric of Anacostia, Martin Luther King, Jr. Avenue between W Street and Good Hope Road was converted to an undivided two-way road. The changes are intended to improve the climate for commercial development in the Martin Luther King, Jr. Avenue corridor. Martin Luther King, Jr. Avenue now consists of two 12' travel lanes bounded by two 8' parking lanes (see below).

### Implementation

The project was completed in October 2006. The eventual plan for Marlin Luther King, Jr. Avenue includes the conversion of some lanes to streetcar lanes.

**Source:** DDOT

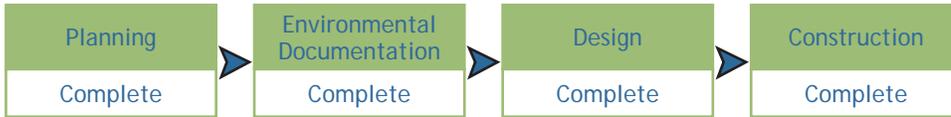
Map Reference #:

3

# I-295/Malcolm X Bridge Rehabilitation

## Current Project Schedule:

Corridor: **AWI-Wide**



## Existing Conditions

The bridge carrying I-295 over Malcolm X Avenue was an aged structure badly in need of rehabilitation.

## Proposed Improvements

The bridge rehabilitation featured construction of new reinforced concrete deck slabs and other major structural and roadway work on the northbound and southbound I-295 bridges that run over Malcolm X Avenue. The first stage of the rehabilitation included reconstruction of abutments and decks on the interior (median) side of the bridges followed by reconstruction of the outer portions. Roadway work included reconstruction of the entrance ramp over South Capitol Street, pavement milling and overlay. The traffic signal system at Malcolm X Avenue at South Capitol Street was also modified.

## Implementation

This project was planned to be coordinated with the Bolling Air Force Base main gate construction. Two lanes of traffic were maintained on I-295 in both directions—northbound and southbound—at all times.

Source: DDOT

## DC Streetcar

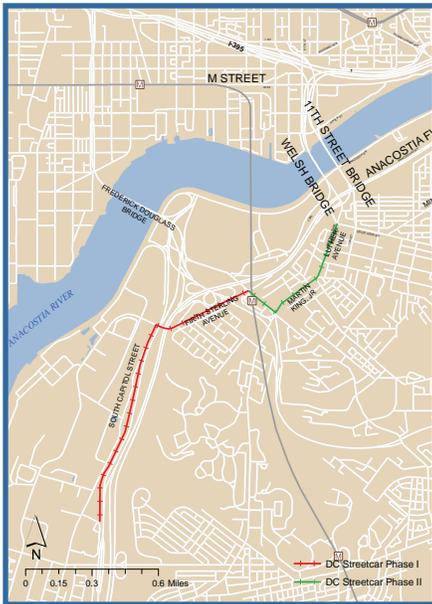
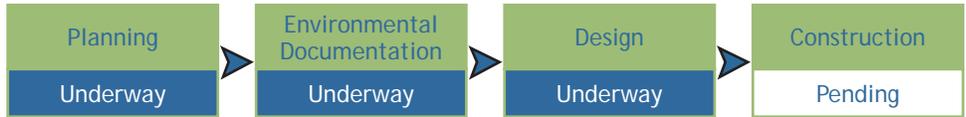
Map Reference #:



**Corridor:** AWI-Wide

**Project Cost:** \$45M

### Current Project Schedule:



DC Streetcar Proposed Lines

### Existing Conditions

The expected new development in the vicinity of Anacostia Metrorail station and along South Capitol Street, Firth Sterling Avenue, and Martin Luther King, Jr. Avenue is expected to create a transit-conductive corridor. The District has identified light-rail as an important supplement to Metrorail within its borders.

### Proposed Improvements

The first phase of improvements associated with the Anacostia Streetcar Line entails constructing a street-running rail line along the following routes:

- South Capitol Street between the Defense Intelligence Agency complex at Bolling Air Force Base and Firth Sterling Avenue;
- Firth Sterling Avenue east to Howard Road, ending at the Anacostia Metro Station

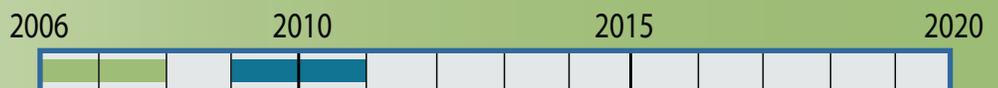
### Implementation

The design vehicle is a narrow streetcar that can run within a normal travel lane. The streetcar line will not have dedicated lanes and instead will share travel lanes with vehicles.

**Sources:** DDOT, WMATA

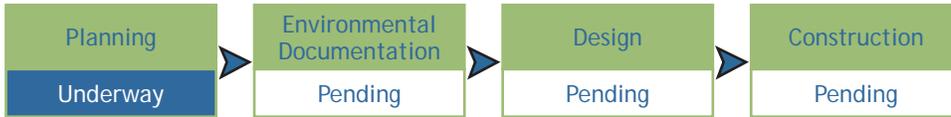
### Project Timeline

- Design
- Construction



# I-295/I-395 Tunnel

## Current Project Schedule:



Corridor: **AWI-Wide**

Project Cost: **\$1B**

### Existing Conditions

Currently, I-395 crosses the Potomac River from Virginia on the 14th Street Bridges; crosses the Washington Channel of the Potomac River; bears east and forms a barrier between L'Enfant Plaza, Housing and Urban Development, and other federal buildings and residential Southwest neighborhoods; and finally turns north and enters the Third Street Tunnel south of the US Capitol. Interstate 295 runs north from an interchange with the Capital Beltway east of the Woodrow Wilson Bridge; parallels the Potomac and Anacostia Rivers until it passes South Capitol Street; bears north to cross the river on the 11th Street Bridges; then turns west to end at the junction with I-395 south of the US Capitol.

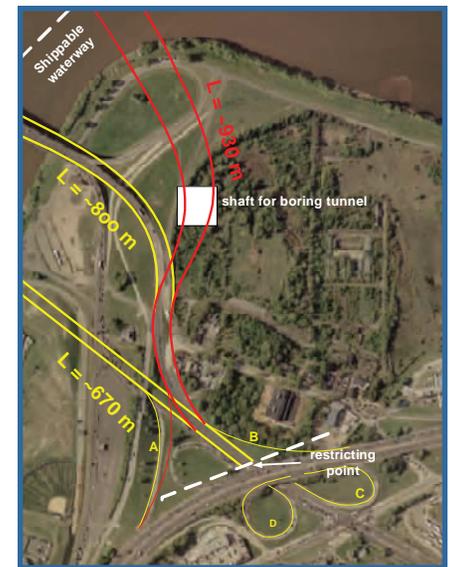
### Proposed Improvements

Part of the vision for a revitalized Anacostia Waterfront and Near Southeast neighborhood includes the removal of the Southeast Freeway (I-295 east of South Capitol Street). To facilitate this, the high numbers of commuter traffic that currently use the 11th Street Bridges and the Southeast Freeway to travel between I-295 east of the Anacostia River and I-395 must be diverted to a different facility. The proposed tunnel would connect to I-295 in the Poplar Point area near the South Capitol Street/Suitland Parkway/I-295 interchange, cross under the Anacostia River somewhere within the South Capitol Street corridor, and connect to I-395 near the entrance to the Third Street Tunnel.

### Implementation

Up to this point in time, the tunnel has only been investigated at a highly conceptual level. If this project is to move forward, a more detailed study and eventually an Environmental Impact Statement will need to be completed.

**Source:** 2005 South Capitol Street Tunnel Study (DDOT)



Proposed Tunnel- Southern Terminus



Proposed Tunnel- Northern Terminus



**2007 Update**

# 14th Street Bridges Improvements

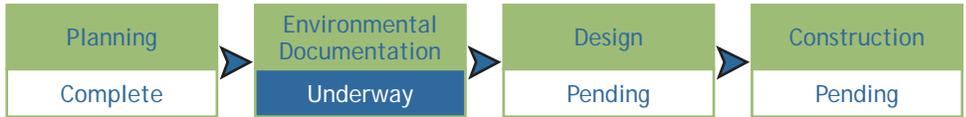
Map Reference #:

14

Corridor: **AWI-Wide**

Project Cost: **TBD**

### Current Project Schedule:



14th Street Bridges Corridor

### Existing Conditions

The 14th Street Bridges consist of three bridges that carry Interstate 395 over the Potomac River between Virginia and Washington, DC. The easternmost bridge (the Arland D. Williams Jr. Memorial Bridge) carries four lanes of northbound traffic, the westernmost bridge (the George Mason Memorial Bridge) carries four lanes of southbound traffic, and the center bridge (the Rochambeau Bridge) carries both northbound and southbound HOV traffic (two lanes in each direction). The interchange between the George Washington Memorial Parkway and I-395 does not operate well and is the source of traffic congestion during both peak periods. On the north side of the river, I-395 splits at the 14th Street junction. The closely-spaced ramps and roadway geometry create significant weaving and merging that result in congestion on the north side of the river.

### Proposed Improvements

The EIS will propose improvements to the 14th Street Bridges corridor focusing on reducing congestion and improving traffic operations and safety. This could include the reconfiguration of ramps and/or the replacement of bridges.

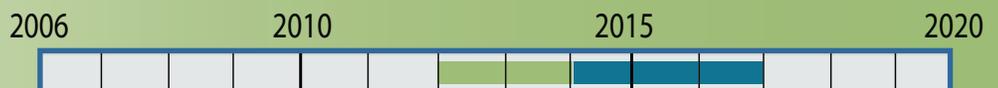
### Implementation

Improvements to the 14th Street Bridges Corridor should follow the 11th Street Bridge improvements. Both bridges are major regional traffic routes and completing these improvements first would provide system-wide benefits. After the 14th Street Bridges improvements are made and traffic operations are improved, the regional network will be able to better handle traffic detours and shifts due to other AWI project construction (e.g. South Capitol Street Corridor and Kenilworth Avenue).

Source: DDOT

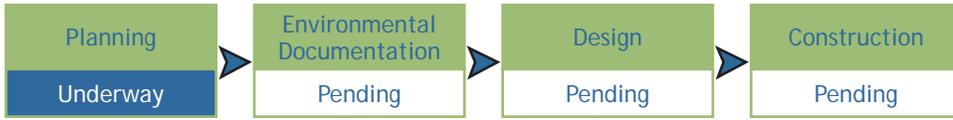
### Project Timeline

- Design
- Construction



# New York Avenue Improvements

## Current Project Schedule:



Corridor: AWI-Wide

Project Cost: \$1.1B

### Existing Conditions

New York Avenue corridor is located in the northeast and northwest quadrants of the District and links the downtown area with Prince George’s County, Maryland. New York Avenue serves as a principal commuter, evacuation and truck route.

### Proposed Improvements

For the purposes of the study, the corridor was divided into six improvement zones so as to distinguish between the functionality of each zone and to provide recommendations specific to the characteristics of the zone. The recommendations for the improvement zones include:

- Creating an urban boulevard entry way into the District, with New York Avenue as a six-lane divided highway with dedicated pedestrian and bicycle facilities and landscaped areas along both sides of the roadway.
- Urban design, landscape improvements, and mixed-use development becoming the focus at intersections.
- Creating a linear park and promenade along the north side of the roadway, with New York Avenue as a six-lane roadway with one and two left-turn lanes at key intersections, a wide median, a dedicated bike lane in the inbound direction, and a dedicated sidewalk on the south side.

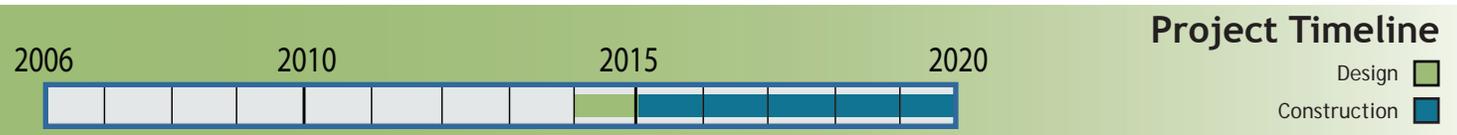


New York Avenue Corridor

### Implementation

The New York Avenue improvements should be done as one of the final pieces of the AWI studies, after the construction of the Kenilworth Avenue improvements.

Source: 2005 New York Avenue Corridor Study Draft Plan (DDOT)



2007 Update

# Water Coach

Map Reference #:

17

Corridor: AWI-Wide

### Current Project Schedule:

Project Cost: TBD



#### Existing Conditions

Despite the fact that the Potomac and Anacostia Rivers are central to the region, no effective water-borne transit service is in operation.

#### Proposed Improvements

DDOT will demonstrate the viability of water transportation by the implementation and operation of a water coach service in the District.

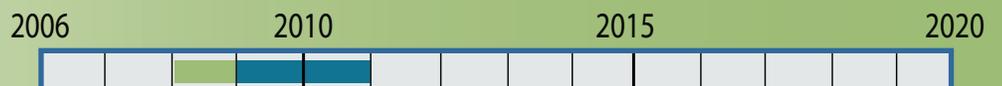
The demonstration system will provide scheduled service between locations on both the Anacostia and Potomac Rivers, within the District of Columbia. The service will be all-weather and provide connections to other transportation modes.

#### Implementation

The project area ranges from the Anacostia River from the Sousa Bridge to the confluence with the Potomac and the Potomac from Georgetown to the Wilson Bridge.

### Project Timeline

- Design
- Construction



# 6 Key Developments

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## Relationships between Infrastructure and Development Projects in the Anacostia Waterfront

A key component of the Master Plan is the implementation of projects in coordination with ongoing and future development in the area. For the benefit of the overall goals of the Anacostia Waterfront Initiative, infrastructure and development projects must be timed in a coordinated manner. DDOT is committed to making sure the construction timing of all projects will support the District's development goals as well as the construction timetables of development projects and vice versa.

DDOT has planned for infrastructure projects to facilitate economic development throughout the AWI area. At its heart, the AWI is a collaborative effort among several local agencies, including DDOT, to improve identified corridors through upgraded infrastructure, economic development, and context sensitive solutions. DDOT is renewing the transportation system in the AWI area so that it supports the level of activity that will come with intense development.

The Anacostia Riverwalk, in addition to providing greater pedestrian access to many areas of future development, serves an additional purpose in connecting several of the city's most treasured parks and open spaces. In particular, the Riverwalk will connect the heavily used tourist destinations around the National Mall and Capitol Hill with underappreciated park areas in the eastern part of the city, including the National Arboretum, Kenilworth Aquatic Gardens, and Kingman Island

The following pages provide details for the major developments to come in the AWI area and illustrate the spatial relationships between those developments, shown in gray, and key AWI infrastructure improvements. The map which shows the Riverwalk focuses on the numerous parks and green spaces which will be tied together by its 40+ miles of multi-use trails.

## 6 Key Developments

### South Capitol Street Corridor (Figure 6-1)

	Development Name	Total Square Feet	Office Square Feet	Retail Square Feet	Estimated Cost (millions)	Residential Units	Parking	Expected Completion
1	Department of Transportation Headquarters	2,000,000	1,350,000	22,300	\$400	-	957	2007
2	Ballpark	1,000,000	30,000	35,000	\$611	TBD	1,225	2008
3	U.S. Capitol Visitor Center	580,000	TBD	TBD	\$555	TBD	TBD	2008
4	Waterfront	2,475,000	1,200,000	75,000	\$650	800	1,900	2010
5	Anacostia Gateway Government Center	306,000	300,000	6,000	\$77	TBD	TBD	2011
6	"The Yards" (Southeast Federal Center)	5,500,000	1,800,000	250,000	\$1,700	2,800	TBD	2011
7	Buzzard Point	2,700,000	TBD	TBD	\$700	1,600	TBD	2011
8	Arthur Capper/Carrollsborg Senior Homes and Dwellings	1,206,338	TBD	51,000+	\$469	1288	968	2011
9	St. Elizabeths Redevelopment	5,000,000 +	TBD	TBD	TBD	TBD	TBD	2015
10	Barry Farm Redevelopment	TBD	TBD	70,000 +	\$565	1,391	TBD	2018
11	Florida Rock	1,100,000	600,000	36,000	\$300	180 (325 Hotel)	1,087	2018
12	Anacostia Metrorail Station	1,255,000	550,000	55,000	\$335	550	TBD	TBD
13	Poplar Point	1,750,000	TBD	TBD	\$300	1400-2300	TBD	TBD

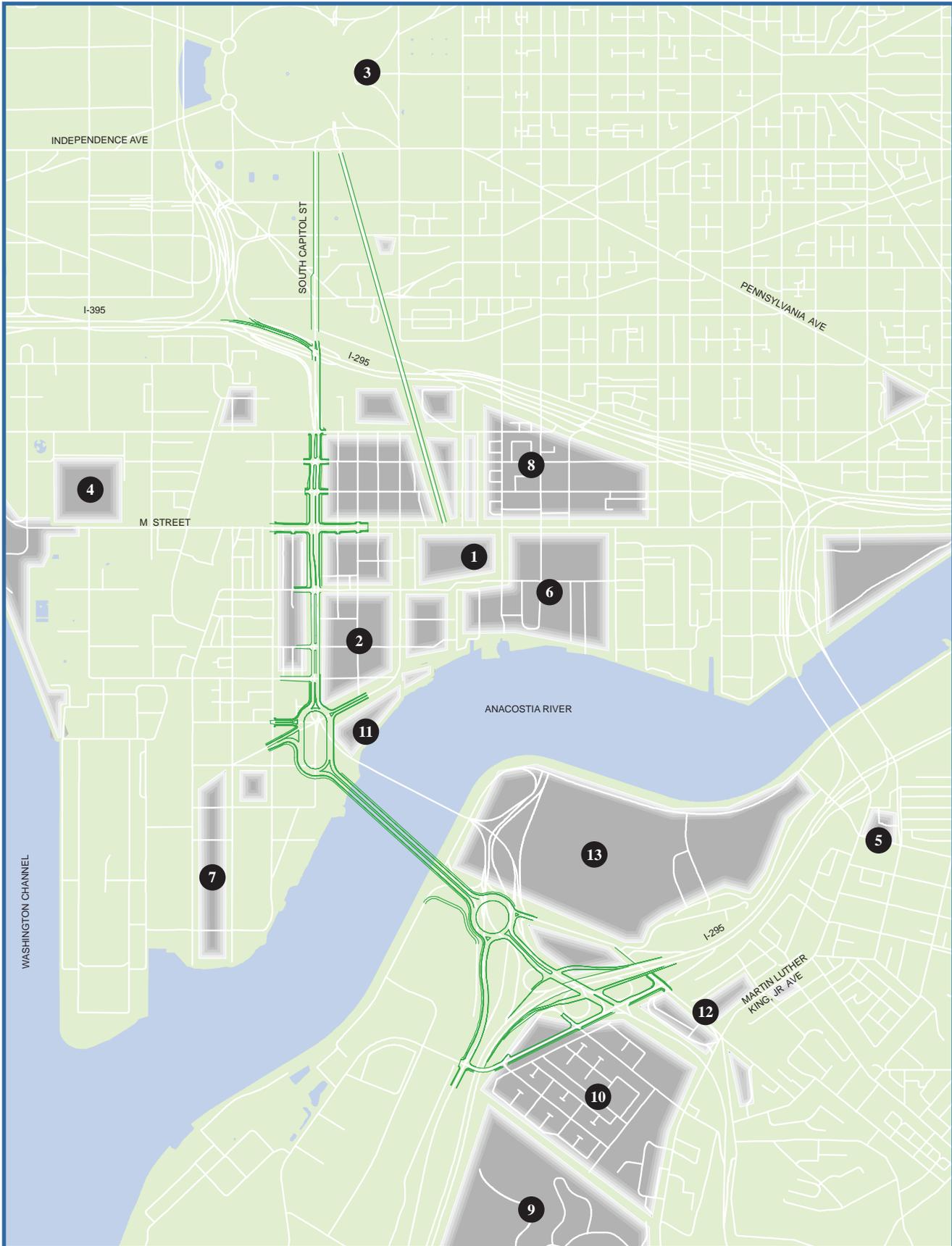


Figure 6-1: Developments in the South Capitol Street Corridor

## 6 Key Developments

### Middle Anacostia Crossings/11th Street Bridges Corridor (Figure 6-2)

	<b>Development Name</b>	<b>Total Square Feet</b>	<b>Office Square Feet</b>	<b>Retail Square Feet</b>	<b>Estimated Cost (millions)</b>	<b>Residential Units</b>	<b>Parking</b>	<b>Expected Completion</b>
1	Department of Transportation Headquarters	2,000,000	1,350,000	22,300	\$400	-	957	2007
2	Anacostia Gateway Government Center	306,000	300,000	6,000	\$77	-	TBD	2011
3	"The Yards" (Southeast Federal Center)	5,500,000	1,800,000	250,000	\$1,700	2,800	TBD	2011
4	Arthur Capper/Carrollsborg Senior Homes and Dwellings	1,206,338	TBD	51,000+	\$469	1288	968	2011
5	Hill East	4,235,200	2,000,000	35,000	TBD	700-800	TBD	2020
6	Anacostia Metrorail Station	1,255,000	550,000	55,000	\$335	550	TBD	TBD
7	Poplar Point	1,750,000	TBD	TBD	\$300	1400-2300	TBD	TBD



Figure 6-2: Developments in the Middle Anacostia Crossings / 11th Street Bridges Corridor

## 6 Key Developments

### Kenilworth Avenue Corridor (Figure 6-3)

	<b>Development Name</b>	<b>Total Square Feet</b>	<b>Office Square Feet</b>	<b>Retail Square Feet</b>	<b>Estimated Cost (millions)</b>	<b>Residential Units</b>	<b>Parking</b>	<b>Expected Completion</b>
1	Minnesota Benning Government Center	350,000	350,000	-	\$95	-	TBD	2009
2	Mayfair Mansions	500,000	-	-	\$110	569	282	2010
3	Parkside (incl. Thomas Elementary School)	3,170,000	500,000	30,000	\$416	1500	2,400	2011

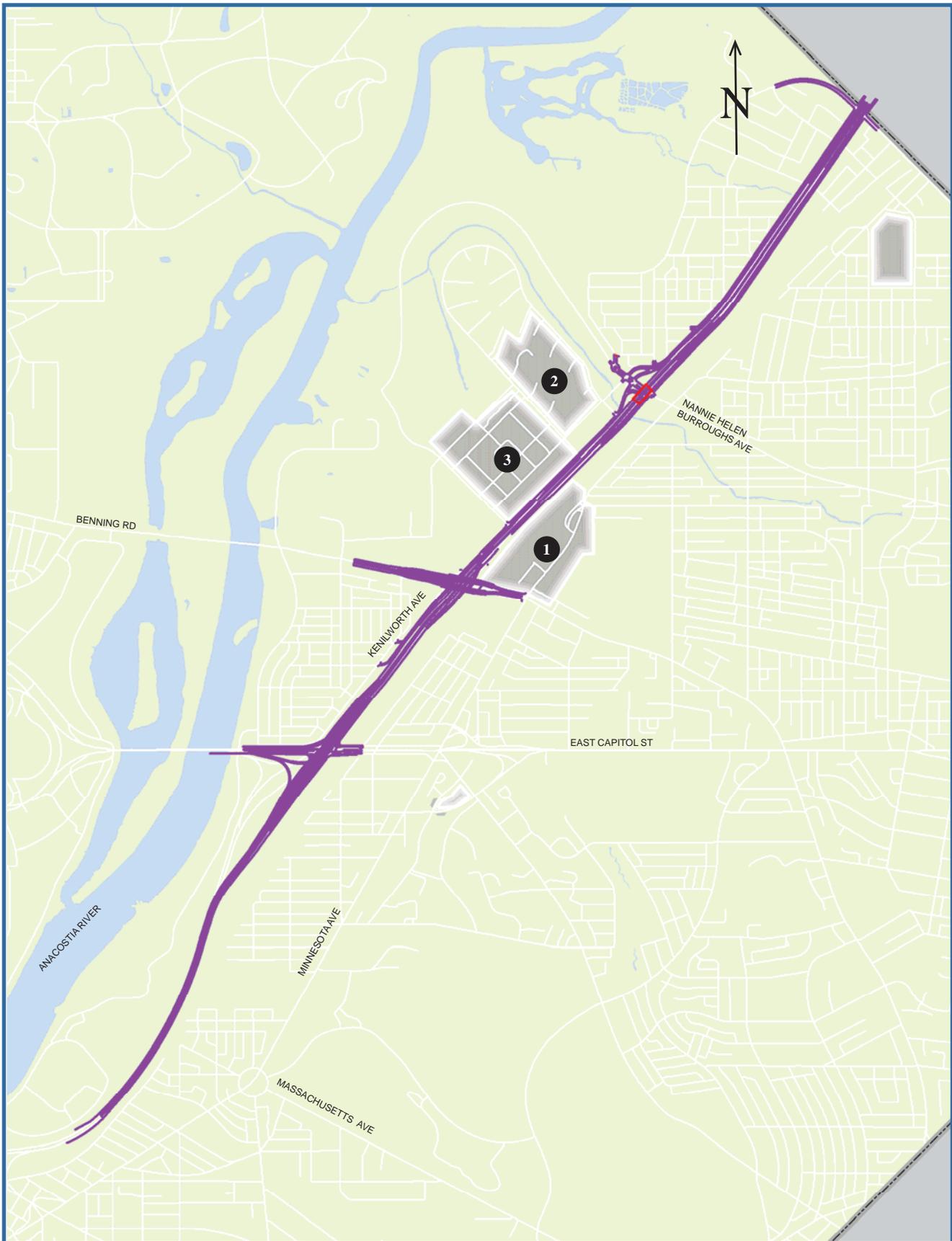


Figure 6-3: Developments in the Kenilworth Avenue Corridor

## 6 Key Developments

### Southwest Waterfront Corridor (Figure 6-4)

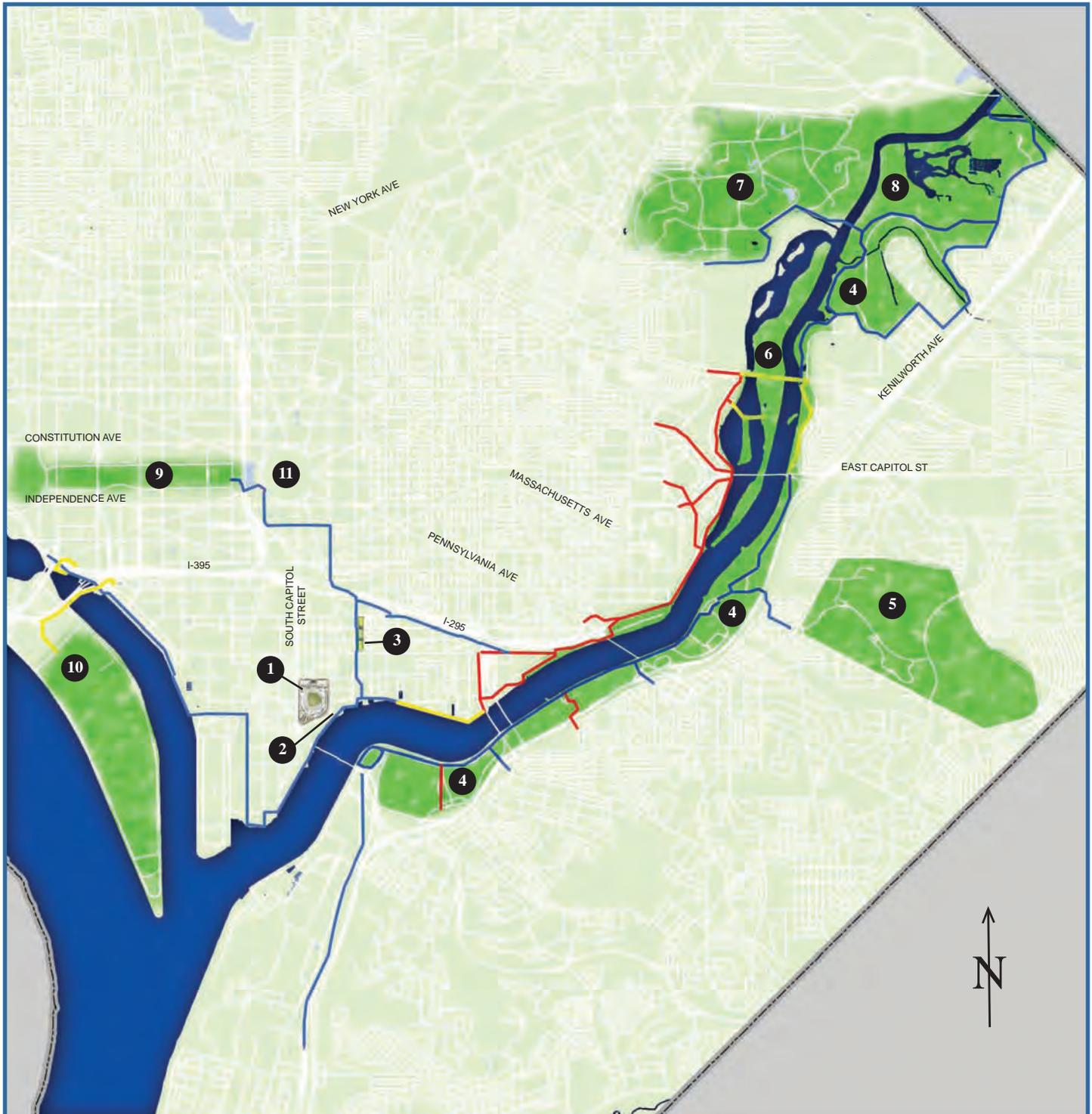
	<b>Development Name</b>	<b>Total Square Feet</b>	<b>Office Square Feet</b>	<b>Retail Square Feet</b>	<b>Estimated Cost (millions)</b>	<b>Residential Units</b>	<b>Parking</b>	<b>Expected Completion</b>
1	L'Enfant Plaza Redevelopment and National Children's Museum	1,213,319	701,319	109,000	\$300	260	-	2009
2	Waterfront	2,475,000	1,200,000	75,000	\$650	800	1,900	2010
3	Southwest Waterfront	2,300,000	150,000	230,000	\$800	950 (360 hotel)	2,000	2014



Figure 6-4: Developments in the Southwest Waterfront Corridor

## 6 Key Developments

### Parks linked by the Anacostia Riverwalk (Figure 6-5)



- |                        |                               |                          |
|------------------------|-------------------------------|--------------------------|
| 1. Ballpark            | 5. Fort Dupont Park           | 9. National Mall         |
| 2. Diamond Teague Park | 6. Kingman Island             | 10. East Potomac Park    |
| 3. Canal Park          | 7. National Arboretum         | 11. U.S. Capitol Complex |
| 4. Anacostia Park      | 8. Kenilworth Aquatic Gardens |                          |

# Appendices

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Appendix A: List of AWI Planning and Environmental Efforts

Appendix B: Required Environmental Documentation for AWI Projects

Appendix C: AWI Mobility Study



# Appendix A

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## List of AWI Planning and Environmental Efforts

The development of the Master Plan included research on the previous planning and environmental efforts throughout the AWI area. Because the AWI is an interagency effort, the documents listed below were prepared by various District entities. DDOT uses these documents as a starting point for further project stages such as design and construction.

Pertinent information from the planning and environmental documents was distilled into the list shown below. Only those projects with final plans or studies are listed.

### Documents Defining the AWI Vision

**Anacostia Waterfront Initiative Memorandum of Understanding (MOU)****March 2000**

Signed on March 22, 2000, The MOU Agreement signed by 20 Federal and District agencies, pledged their cooperation to transform the Anacostia River from the city's forgotten river into a vibrant economic corridor that could rival any urban waterfront in the world.

**Anacostia Waterfront Initiative Framework Plan, DCOP****November 2003**

The AWI Framework Plan identified five major themes to guide development and revitalization efforts in the Anacostia Waterfront area, and identified eight neighborhoods, including the South Capitol Corridor, to be studied in greater detail.

## South Capitol Street Corridor Documents

**South Capitol Street Urban Design Study, NCPC  
January 2003**

This South Capitol Street and Urban Design Study was a cooperative effort between the District's Office of Planning and the National Capital Planning Commission. It provides fundamental information regarding design, open space, and land use that was used in a larger effort, the South Capitol Street/Gateway Improvement Study.

**South Capitol Gateway and Corridor Improvement Study, DDOT  
Septmeber 2003**

This study proposed that South Capitol Street be transformed into an urban boulevard that would accommodate transit, pedestrians, and cyclists. Recommended a new Frederick Douglass Bridge on a more southerly alignment.

**South Capitol Street Report by Urban Land Institute (ULI) Advisory Panel, NCPC & DCOP  
Novemeber 2003**

This document summarized the specific land use, transportation, and urban design recommendations for the South Capitol Street Corridor and pointed out the need to strengthen physical connections between neighborhoods and activity centers.

**South Capitol Gateway and Anacostia Access Studies, DDOT  
October 2004**

These studies further developed the recommendations of the South Capitol Gateway and Corridor Improvement Study and stressed the need for replacement of the Frederick Douglass Bridge and redesign of the I-295/South Capitol Street/Suitland Parkway interchange.

**South Capitol Street Task Force Recommendations, NCPC  
January 2005**

These recommendations reexamined the South Capitol Corridor and recommended a traffic oval at South Capitol and Potomac with a major memorial/open space at that location. Prescribed a more urban character for South Capitol Street north of M Street with smaller parcels and a larger scale south of M Street with a center median and limited cross streets.

**Frederick Douglass Memorial Bridge Alignment Study  
December 2005**

This study considered the technical constraints of the proposed alignments for the new Frederick Douglass Memorial Bridge. This study will be a technical report to the South Capitol Street EIS.

**Ballpark District Development Strategy Plan, DCOP & AWC  
September 2006**

The Ballpark District Development Strategy Plan created a vision for development of the areas surrounding the Washington Nationals Ballpark site to the east of South Capitol Street. Analyzed the level and feasibility of various development types.

## Middle Anacostia Crossings Corridor Documents

### **Middle Anacostia River Crossings Transportation Study, DDOT July 2005**

As part of the Anacostia Waterfront Initiative, a transportation study was conducted for the Middle Anacostia area of the District of Columbia. The study evaluated traffic and safety issues and considered improvement options.

### **11<sup>th</sup> Street Bridges EIS, DDOT October 2007**

Both the Draft EIS and the Final EIS documents describe the environmental impacts associated with the reconstruction and reconfiguration of the interchange of the Southeast/Southwest Freeway and the Anacostia Freeway over the Anacostia River in Southeast Washington, DC. Federal Highway Administration (FHWA) and District Department of Transportation (DDOT) sponsored the project and prepared the EIS.

## Southwest Waterfront Documents

### **Southwest Waterfront Plan, OP/NCPC February 2003**

The Southwest Waterfront Plan is a redevelopment framework for nearly 50 acres of waterfront in the Southwest quadrant of Washington. The plan envisions replacing parking lots and underutilized streets with a mix of public plazas, cultural venues, restaurants, shops and residences to create a vibrant neighborhood and regional waterfront destination.

### **Fourth Street SW Transportation Study, DDOT March 2003**

The District of Columbia Department Transportation (DDOT) conducted a study that evaluated the potential impacts of proposed redevelopment at Waterside Mall.

### **Southwest Waterfront- Maine Access/ Improvements Study, DDOT October 2004**

This study considered future conditions on Maine Avenue, without Water Street and with a new signalized entrance to the Fish Market. Water Street is planned to be removed as part of future development under the Anacostia Waterfront Initiative (AWI). A planning horizon of ten years was used in assessing effects from future developments that will generate more trips along Maine Avenue.

### **Anacostia Waterfront Initiative Framework Plan, DCOP November 2003**

The AWI Framework Plan identified five major themes to guide development and revitalization efforts in the Anacostia Waterfront area, and identified eight neighborhoods, including the South Capitol Corridor, to be studied in greater detail.

## Kenilworth Avenue Corridor Documents

### **Kenilworth Avenue Corridor Study, DDOT August 2006**

The Kenilworth Avenue Corridor Study was the third major transportation study by the District Department of Transportation (DDOT) and looked at transportation improvements for the Anacostia Waterfront Initiative (AWI) area. This study examined the section of Kenilworth Avenue between Pennsylvania Avenue and Eastern Avenue and suggested ways for the facility to provide a safer, more pedestrian friendly, atmosphere, create a more urban setting for Kenilworth Avenue, and improve access for local neighborhoods.

## Anacostia Riverwalk Documents

### **Anacostia Riverwalk Trail Environmental Assessment (EA), National Park Service December 2005**

This Environmental Assessment was prepared in coordination with DDOT to assist the National Park Service in identifying and evaluating the potential environmental impacts and benefits of the Anacostia Riverwalk. A public meeting was held regarding the Riverwalk EA on January 16, 2005.

## Other Documents Relevant to the AWI Area

### **Extending the Legacy: Planning America's Capital for the 21st Century, NCPC September 1996**

This study presented a revised vision for the District's Monumental Core, including the South Capitol Street Corridor. Envisioned "a bustling mix of federal, local, and private uses" for South Capitol Street, and a major public building or monument at the point where the corridor meets the river.

### **Hill East/Reservation 13 Master Plan, OP March 2002**

The plan for the Hill East waterfront envisions transforming Reservation 13 from an isolated campus to a mixed-use waterfront neighborhood. By extending neighborhood-scaled streets, the site can accommodate diverse uses including health care, civic, residential, educational, recreational, community and other public uses along with unrestricted access to the Anacostia waterfront.

### **DC Transit Alternative Analysis-Anacostia Streetcar Study, WMATA/DDOT January 2004**

The D.C. Alternative Analysis/Anacostia Corridor Demonstration Project was an 18-month joint study between WMATA and DDOT to develop a locally preferred transit investment for the District's highest priority corridors. The study analyzed the benefits, costs and impacts of light rail or bus rapid transit in four District corridors, and developed an implementation and phasing plan for the system.

### **AWI Poplar Point Target Area Master Plan, DCOP June 2005**

The plan called for community and culturally focused development near the Anacostia Metro Station and mixed-use development along Howard Road.

**DC Comprehensive Plan, DCOP**

**March 2006**

This major revision of the District Elements of the comprehensive plan described major changes to the land use for the AWI area.

**Capitol Hill Transportation Study, DDOT**

**August 2006**

In response to citizen concerns about the speed and volume of vehicular traffic (including trucks) on streets in the Capitol Hill area, DDOT carried out the Capitol Hill Transportation Study. This study examined existing and projected transportation conditions within the study area, and suggested short-, mid-, and long-term recommendations for transportation management and infrastructure improvements.

**H Street NE Corridor Transportation Study, DDOT**

**December 2006**

The H Street NE Corridor Transportation Study focused on ways to improve transit, pedestrian facilities, parking, and reduce vehicular impacts on the corridor. This study was the foundation for improvements to the streetscape along H Street, including the sidewalks, lighting, trees and other elements.

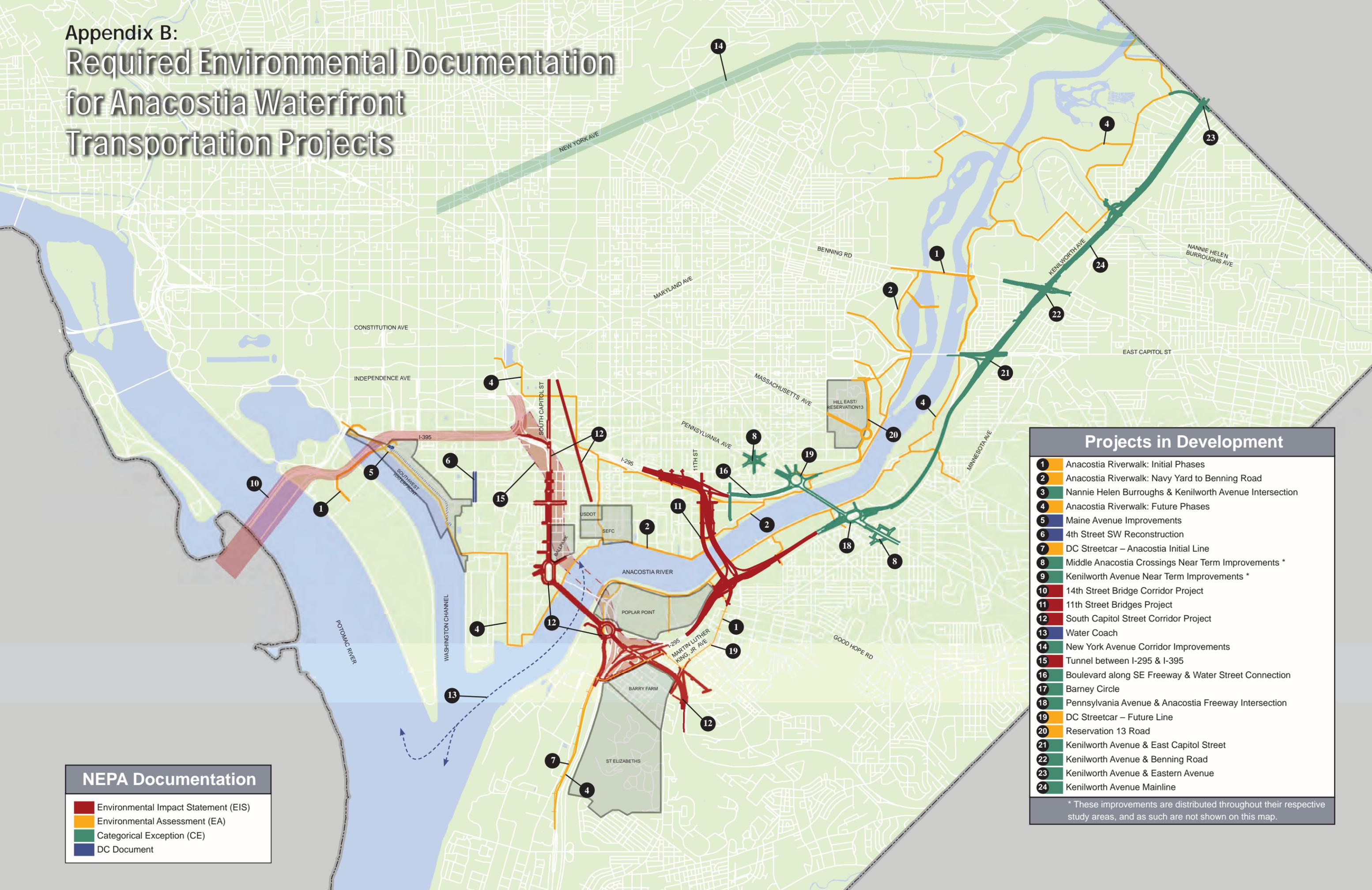
**New York Avenue Corridor Study, DDOT/OP**

**August 2007**

The New York Avenue Corridor, from the District of Columbia / Prince George's County line to 7<sup>th</sup> Street, NW, has been identified in the District's strategic transportation plan as a potential multimodal and intermodal corridor. This study outlines the plan for the Corridor.



# Appendix B: Required Environmental Documentation for Anacostia Waterfront Transportation Projects



### NEPA Documentation

- Environmental Impact Statement (EIS)
- Environmental Assessment (EA)
- Categorical Exception (CE)
- DC Document

### Projects in Development

- 1 Anacostia Riverwalk: Initial Phases
- 2 Anacostia Riverwalk: Navy Yard to Benning Road
- 3 Nannie Helen Burroughs & Kenilworth Avenue Intersection
- 4 Anacostia Riverwalk: Future Phases
- 5 Maine Avenue Improvements
- 6 4th Street SW Reconstruction
- 7 DC Streetcar – Anacostia Initial Line
- 8 Middle Anacostia Crossings Near Term Improvements \*
- 9 Kenilworth Avenue Near Term Improvements \*
- 10 14th Street Bridge Corridor Project
- 11 11th Street Bridges Project
- 12 South Capitol Street Corridor Project
- 13 Water Coach
- 14 New York Avenue Corridor Improvements
- 15 Tunnel between I-295 & I-395
- 16 Boulevard along SE Freeway & Water Street Connection
- 17 Barney Circle
- 18 Pennsylvania Avenue & Anacostia Freeway Intersection
- 19 DC Streetcar – Future Line
- 20 Reservation 13 Road
- 21 Kenilworth Avenue & East Capitol Street
- 22 Kenilworth Avenue & Benning Road
- 23 Kenilworth Avenue & Eastern Avenue
- 24 Kenilworth Avenue Mainline

\* These improvements are distributed throughout their respective study areas, and as such are not shown on this map.



# Appendix C

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## Appendix C - 2005 Anacostia Waterfront Transportation Mobility Study

### *Summary*

Public agencies draw on a variety of data sources and must coordinate with one another to ensure that their projections for the future make sense. Just like every other major metropolitan area, the District of Columbia carries out such planning and coordinating among agencies. To be certain that the plans and transportation improvements under development for the Anacostia Waterfront area correspond to what the transportation network can support, the District Department of Transportation (DDOT) and the District Office of Planning (OP) have both relied on the regional planning body, the Metropolitan Washington Council of Government's (MWCOG) regional travel demand model and cooperative land use forecasts.

This report summarizes the activities of DDOT and OP and lays out how these agencies coordinate with one another in the process of developing the future land use and transportation infrastructure for the District. Both agencies supply MWCOG with information, and use its land use and transportation projections as a test of their projects. Although these processes are logical activities, carried out by agency professionals daily, describing the various permutations of travel demand models and the system for determining future land use involves laying out many, somewhat convoluted, steps. The Mobility Study should not only clearly depict how a tremendous amount of data and information are organized to develop a sensible picture of the future population, but also show that the future population is well served by the proposed transportation network.

This report is composed of five sections that explain facets of the land use and transportation planning process and how modeling activities served to inform and confirm transportation projects in the AWI:

Section 1 provides a few more background details for the mobility study. The goal of the study is to reassure the public that the planned transportation improvements do meet future demand.

Section 2 discusses the transportation planning process and land use forecasts developed by MWCOG. MWCOG uses a four-step, trip-based model to determine area travel demand on the regional transportation system. As an input to the travel demand model, MWCOG's land-use forecasts rely on information gathered from local planners, supplied through the land use planning process, to determine future households, population and employment. Since the MWCOG model was used by DDOT in its planning studies, an explanation of the basic workings of the MWCOG model is important to gaining an understanding of the process.

Section 3 summarizes the Office of Planning's (OP) role in the development process, specifically how they track projects and estimate future land use, and how they supply that information to other agencies, including MWCOG. The section also describes the list of development projects in the City's pipeline.

Section 4 discusses the planning process for each of DDOT's transportation planning studies. In particular, this section demonstrates how the MWCOG model is the foundation for determining future traffic volumes and future traffic impacts. As studies move from conceptual level to full design and implementation, DDOT updates future traffic volume forecasts and future transportation impacts using the latest MWCOG models and land use forecasts, to ensure that anticipated development and infrastructure growth have been captured in its evaluation. Projects are carefully analyzed as to how they accommodate future traffic conditions.

Section 5 explains the major finding of the report, namely that DDOT through its individual transportation planning studies and project development, has taken a comprehensive look at future land use and travel demand in the Anacostia corridor, and that the proposed Anacostia Waterfront transportation infrastructure serves that future travel demand well.

## Appendix C

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The goal of the document is to assure the community that DDOT planning has incorporated the proposed and planned developments in the AWI area, and that proposed infrastructure improvements will accommodate the anticipated growth. The Mobility Study is intended to illuminate how land use, development, and traffic information are used by District agencies as they cultivate projects to solve current transportation problems without creating new ones in the future.

## Section 1. Background

Major metropolitan areas in the United States are required to analyze how land is expected to be developed and how that influences and is affected by the network of streets, roads, bridges and all other transportation infrastructure. This activity, land use planning and its relationship with transportation, is an area of growing interest in the District of Columbia. The District Department of Transportation (DDOT) is in the process of planning and building the infrastructure to complete the Anacostia Waterfront Initiative (AWI) transportation projects. As in many communities, within the AWI area there is concern from the public that the planned infrastructure will not be able to accommodate anticipated growth from planned and proposed development in the District. DDOT has made a point of planning projects that improve the city's transportation infrastructure while not adding pavement, and at the same time, high-density development projects are proposed or planned in many parts of the city. This apparent disparity or disconnection between development levels and roadway capacity has inspired concern among community members that the transportation infrastructure will not be able to handle the growth from the development, and that DDOT has underestimated future traffic impacts.

DDOT is dedicated to openness concerning transportation planning and appreciates that the community needs a full understanding of the development assumptions used by the District and DDOT in their planning studies. With a clearer understanding of the process, the community will better be able to evaluate the impact of land use and transportation projects proposed for the area, have confidence in the recommendations from the planning studies and be assured that the planned infrastructure will accommodate future growth. One important element of DDOT's objectives in developing infrastructure projects is the notion that increased capacity will only contribute to non-attainment of air quality standards because traffic will expand to fill the newly available space. DDOT is dedicated to making sure that there is a balanced, sustainable, multi-modal transportation network. They are equally dedicated to the notion that no community can build its way out of traffic congestion. Instead, the improvements proposed for the corridor seek to maximize the efficient use of the existing system while providing missing logical connections.

In addition to the outreach that DDOT consistently undertakes in the project planning and development process, it also presents this Mobility Study. The purpose of the Mobility Study is to respond to the requests of the community and provide data regarding the federally-mandated planning process utilized by DDOT.



Figure 1. Anacostia Waterfront Study Area (Source: Office of Planning, 2005)

## **Section 2. MWCOG Land Use Forecasts**

The following section discusses the MWCOG planning process and what materials and information they gather to form their land use forecasts. The MWCOG model assumptions are the basis for all transportation planning projects undertaken in the metropolitan Washington region.

### **Section 2.1. Modeling Activities**

Like every major municipal area in the United States, the Washington metropolitan region follows a defined transportation planning process. The Transportation Planning Board (TPB) is the recognized metropolitan planning organization (MPO) for the Washington metropolitan region. Although it operates independently of the MWCOG, its staff is provided by the Department of Transportation Planning within MWCOG. The TPB has developed the transportation planning process based on federal requirements that forecasts the transportation impacts, needs, and travel patterns over a 20-25 year time frame. Most of the process is performed by using travel demand models. The TPB, in conjunction with the MWCOG, uses regional travel demand models to produce regional travel demand forecasts and air quality assessments in order to support long-range planning, and for the development of key planning documents. The model is essential for the development of the Constrained Long Range Transportation Plan<sup>1</sup> (CLRP) and the six-year Transportation Improvement Program<sup>2</sup> (TIP). Any time that the CLRP and TIP are amended, the region's transportation networks (roads and transit), as well as all new projects, must be modeled to ensure air quality conformity for the region. Federal law, the Clean Air Act (1990), requires travel demand modeling to show that the CLRP and TIP are in conformity with regional air quality improvement goals.

The modeling process produces travel forecasts (in the form of vehicle trips, vehicle miles of travel, transportation mode choice options, and vehicular speed data) that can be used in a variety of decision-making opportunities by the local jurisdictions. The regional travel forecasting models are also used in other functions throughout the region. State departments of transportation (DDOT, VDOT, MDO'T), WMATA, and local transportation agencies all use the models to develop future travel demand for corridor studies and other analyses. The models help determine the future impacts of the proposed infrastructure. The model is also used to examine the mobility of various population segments.

It is important to note that travel demand modeling and forecasting is not an exact science; travel patterns and traffic volumes over a long period of time cannot be predicted with precise accuracy. However, the output from the models can be used as a basis for comparison. Transportation decision makers and local governments can use the output from the models to analyze different transportation options and determine the potential effects those options would have on the regional and/or local system, such as the effects of various potential land use and development scenarios on future traffic congestion levels.

#### **Section 2.1.1. MWCOG Regional Travel Demand Model**

The current officially adopted travel demand model in use by MWCOG is Version 2.1D #50, which was adopted November 17, 2004 when the TPB approved the air quality determination for the 2004 CLRP and the FY 2005-2010 TIP. The MWCOG travel demand model is refined on a periodic basis with newly collected data or with emerging forecasting techniques. During the refinement process, there typically will be a draft travel demand model that is under development and available for public review. The next draft travel demand model will be Version 2.1E.

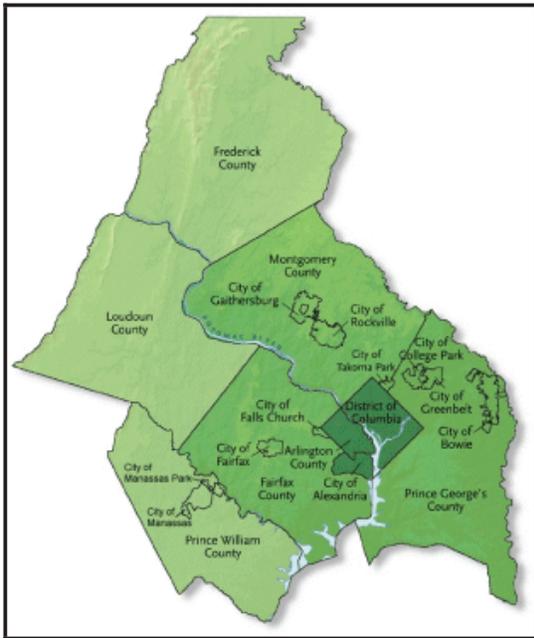
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<sup>1</sup> The CLRP is a financially constrained comprehensive plan of transportation projects and a system-wide collection of strategies that the TPB realistically anticipates can be implemented over the next 25 years. Federal law requires that the CLRP be updated every three years. The TPB has typically amended the CLRP every year.

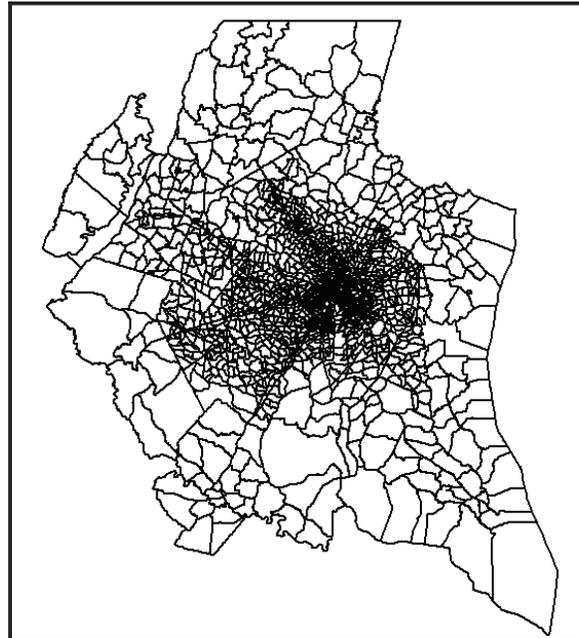
<sup>2</sup> The TIP provides detailed information showing which projects in the CLRP will be completed over the next six-year period. The TIP, like the CLRP, is subject to federal review and must meet air quality conformity requirements. TPB develops a new TIP every year.

For many of the AWI transportation studies, a previous version of the MWCOG model, Version 2.1 C, was used to forecast future travel demand. For the upcoming South Capitol Street and 11<sup>th</sup> Street Bridges Project Environmental Impact Statements, MWCOG Version 2.1 D will be used to forecast future travel demand.

The AWI area, though sizeable, is only a small portion of the entire area covered by the MWCOG model. The MWCOG travel demand model covers an area of 6,800 square miles, or 22 jurisdictions (counties and cities). This area is divided into about 2,000 traffic analysis zones (TAZs). The highway network represents over 27,000 road segments and the transit network includes over 600 routes, including such modes as Metrorail, Metrobus, other local bus, commuter bus, and commuter rail.



**Figure 2.** MWCOG's Member Jurisdictions  
(Source: [www.mwco.org](http://www.mwco.org), 2005)

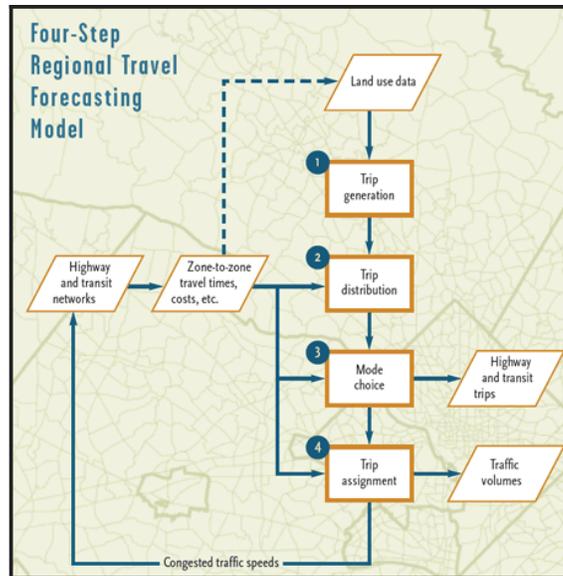


**Figure 3.** Map of MWCOG's Traffic Analysis Zones  
(Source: Parsons Brinckerhoff, 2005)

### Section 2.1.2. The Four-Step Process

For its regional travel demand model, MWCOG uses the four-step process to determine travel demand. The four main steps of this process are:

- **Trip generation** - determine the number of daily trips that take place in the region by estimating the number of "trip ends" produced in and/or attracted to each transportation analysis zone (TAZ) in the region.
- **Trip distribution** – determine the geographical linkages between the trips "produced" and those "attracted" to develop complete trips.
- **Mode choice** – determine the mode of travel for commuters (mass transit, drive alone, or carpooling).
- **Trip assignment** - determine the routes travelers choose to reach their destinations.



**Figure 4.** The Four Step Regional Travel Forecasting Model  
(Source: [www.mwco.org](http://www.mwco.org), 2005)

The four-step model is a trip-based model that is used, in one form or another, by almost every MPO that performs regional modeling. The first three steps are used to estimate the demand for travel. In the fourth step, trip assignment, the travel demand is brought into equilibrium with the travel supply, as trips are loaded onto one or more networks.

### Section 2.1.3. Model Inputs

There are two major pieces of information that are used in the MWCOG model: transportation inputs and land use inputs.

Transportation inputs include highway transportation network, public transportation network, planned improvements, and potential network changes. Information regarding the transportation inputs comes from the existing transportation network, coupled with current transit fares and policies, local jurisdictions' transportation plans, and proposed roadway and transit improvements.

Land use inputs include forecasts of future population, household growth, and employment. MWCOG's Cooperative Forecasting Program develops the land use inputs using information from real estate development, market conditions, adopted land use plans, and planned transportation improvement impacts. The data developed through this program reflects the best judgment of planning officials from the local jurisdictions. This enables local and regional planning efforts to be coordinated using common assumptions with regards to future growth. The Cooperative Forecasts combine regional data, based on national economic trends and regional demographics, with location projections of population, households, and employment. Section 2.2. describes the development of the commonly used land use forecasts for the MWCOG model.

The MWCOG travel demand models are empirically estimated and calibrated using observed data. Major sources of observed data used to calibrate and validate the model include census data, household travel surveys, automobile travel time surveys, airline passenger surveys, WMATA Metrorail surveys, traffic counts, and truck surveys.

#### **Section 2.1.4. Model Outputs**

The COG Model produces information including highway and transit trips and traffic volumes. Other outputs include:

- Travel flows on links
- Speeds on links
- Origin/destination patterns, represented by zone-to-zone trip tables segmented by travel mode
- Mode splits
- Emissions (requires post processor and emissions models)

The outputs are used to provide decision makers with information regarding the future mobility in the region.

#### ***Section 2.2. Land Use Forecasting***

The Cooperative Forecasting program is a joint effort by the MWCOG, federal and local governments to produce a consistent set of long-range economic and demographic forecasts for use in metropolitan and local planning programs. The process ensures that as each municipal agency carries out their planning and forecasting activities, there information the same, and uses the same parameters, as neighboring municipalities. The process provides common assumptions about future growth and development in the region and results in forecasts of employment, households and population in five-year increments for the entire metropolitan area. The resulting forecasts apply not only to individual member jurisdictions, such as the District or Loudoun County, but also for any traffic zone within each jurisdiction. The Cooperative Forecasting program, established in 1975, works to provide forecasts on which to base functional plans in the areas of transportation, water resources, air quality, housing, land use, and energy.

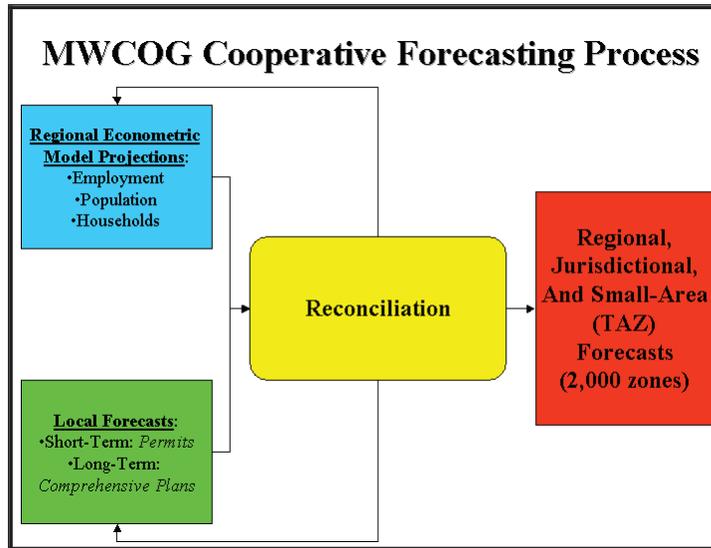
Each series of forecasts constitutes a “round.” Each round covers a period of 20-30 years. Major “rounds” (Round 6, Round 7) have been prepared following significant events in metro area demographics, typically the release of Census data, but also major changes in development or transportation infrastructure. Forecasts are also updated annually by MWCOG based on adjustments made by local jurisdictions. These updated forecasts are referred to by adding a number after the major “round” number, such as Round 6.1, Round, 6.2, etc. The current forecasts developed by MWCOG are the Round 6.4A land use forecasts, approved by MWCOG’s Board of Directors in November 2004. Round 6.4A forecasts will be used in the modeling efforts for the South Capitol Street and 11<sup>th</sup> Street Bridges Environmental Impact Statements.

The modeling activities for the other AWI studies (*South Capitol Corridor Gateway Improvement and Anacostia Access Studies, Middle Anacostia River Crossings Transportation Study, Kenilworth Avenue Corridor Transportation Study*) used the Round 6.3 land use forecasts. Round 6.3 was approved by MWCOG’s Board of Directors on October 8, 2003. The purpose of Round 6.3 figures is to incorporate newly released Census 2000 figures for population and households to correct the projected 2000 figures used in the initial Round 6 data set.

#### **Section 2.2.1. Methodology**

The Cooperative Forecasts is a multi-stage, “top-down/bottom-up” process undertaken by MWCOG’s Planning Directors Technical Advisory Committee and the Cooperative Forecasting and Data Subcommittee. Both committees employ both a regional econometric model and local jurisdictional forecasts in their determination of the cooperative forecasts. The regional econometric model projects the employment, population, and households for the metropolitan Washington area based on national economic trends and local demographic factors. The model is based on the 1983 definition of the Metropolitan Statistical Area (MSA) that includes the MWCOG member jurisdictions, as well as other counties in the region. At the same time, local jurisdictions, such as Washington DC, develop independent projections of employment, population, and households, based on pipeline development, market conditions, planned transportation improvements, and adopted land use plans and zoning. While doing this, local jurisdictions consider the preliminary regional projections. The Cooperative Forecasting and Data Subcommittee, which is composed

of local government planners, economists, and demographers, reviews and reconciles the two sets of projections. The model and the local jurisdictional projections must be within three percent of each other for the new set of Cooperative Forecasts to be reconciled.



**Figure 5.** MWCOG Cooperative Forecasting Process  
(Source: [www.mwcof.org](http://www.mwcof.org), 2004)

Once the forecasts are reconciled and approved by the Cooperative Forecasting and Data Subcommittee, the forecasts are then presented and approved by the following committees at MWCOG: the Planning Directors Technical Advisory Committee, the Metropolitan Development Policy Committee, and ultimately the MWCOG Board of Directors, which is composed of local elected officials from throughout the region.

Recognizing that market conditions and policies may change, the subcommittee also reviews the forecasts annually, and allows local governments to make minor adjustments to reflect these changes. The forecasts may also be adjusted to reflect local governments’ assessments of the likely housing and employment impacts due to major new transportation facilities.

In Washington, DC, the Office of Planning (OP) is responsible for submitting data to MWCOG for the development of the cooperative forecasts. OP staff members serve on the various MWCOG’s committees, including the Cooperative Forecasting and Data Subcommittee and Planning Directors Technical Advisory Committee, to serve as representatives for the District of Columbia. OP also develops employment, population, and household forecasts based on planned developments and state data, and must be constrained by the DC Comprehensive Plan and associated master plan documents. OP also reviews the forecasts from MWCOG and makes recommendations on refinements or adjustments before approving the forecasts for publishing.

By providing cooperative land use forecasts, MWCOG is able to provide a consistent set of local and regional forecasts for use in program and facility planning throughout the region. According to the federally mandated planning process, any travel demand modeling activities performed as part of corridor and planning studies must use the officially adopted version of the travel demand model, usually the most recent version, and the most recent model inputs, including land use forecasts. The most recent land use forecasts have been agreed upon by the TPB, COG, and the local jurisdictions. DDOT uses the most recent land use forecasts as part of the officially adopted travel demand model so as to remain in compliance with federal procedures.

Use of the most recent model inputs is important if future roadway projects are vying for federal funding, and will need to be added to the CLRP for future years.

### Section 2.2.2. MWCOG’s Round 6.3 Cooperative Land Use Forecasts

The Round 6.3 Cooperative Land Use Forecasts were used in the travel demand modeling activities for most of the AWI transportation studies, including the South Capitol Street Gateway Improvement and Anacostia Access Studies, the Middle Anacostia River Crossings Study, and the Kenilworth Avenue Corridor Study. It should be kept in mind, then, that the employment, population, and household forecast data from the Round 6.3 serve as the basis for developing future traffic volumes and determining future transportation impacts.

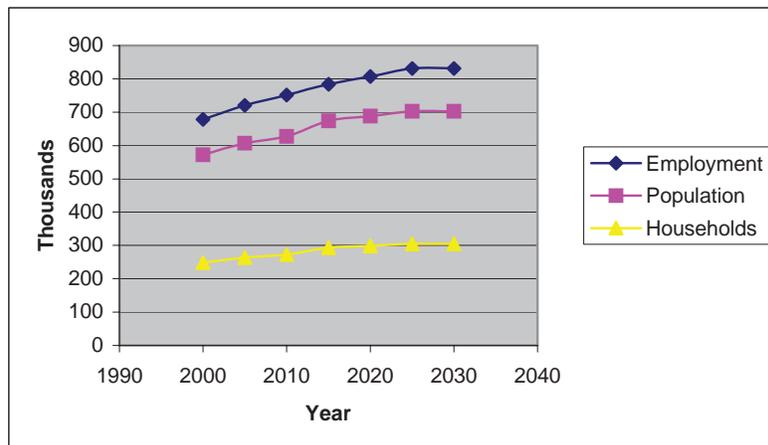
### Section 2.2.3. DC Growth Trends

According to the Round 6.3 intermediate forecasts, employment, population, and households are all projected to increase over the next 25 years. Jobs in the District of Columbia are expected to increase by 23 percent. The District’s population also is expected to grow steadily from 2000 to 2030 by 23 percent from 2000 to 2030. In addition, the number of households is expected to grow by 23 percent over the 30-year timeframe.

**Table 1** and **Figure 6** display the Round 6.3 forecasts for employment, population, and households.

**Table 1.** Round 6.3 Land Use Forecasts (Source: MWCOG, 2003)

Category	Actual	Forecasts					
	2000	2005	2010	2015	2020	2025	2030
<i>Employment</i>	678,017	720,407	752,016	783,731	807,107	831,196	831,196
<i>Population</i>	572,059	606,998	626,996	673,711	688,132	702,441	702,441
<i>Households</i>	248,338	263,937	272,237	292,945	298,744	304,441	304,441



**Figure 6.** Round 6.3 Land Use Forecasts  
(Source: Parsons Brinckerhoff, 2005)

### Section 2.2.4. AWI Study Area Growth

Out of approximately 2000 traffic analysis zones that comprise the DC metropolitan area, over 100 zones lie in the study area for the Anacostia Waterfront Initiative. **Figure 7** shows the TAZs in the AWI study area.

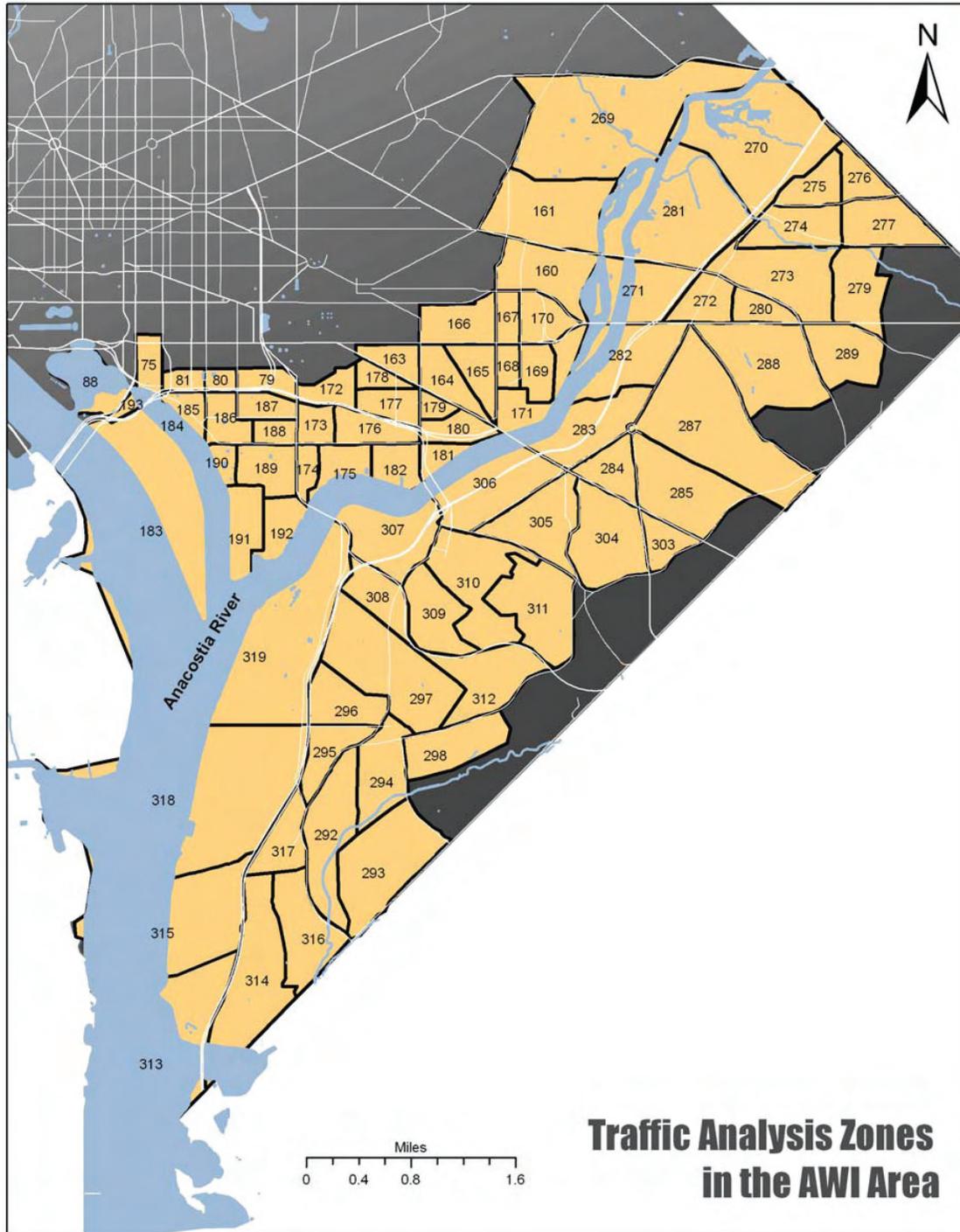
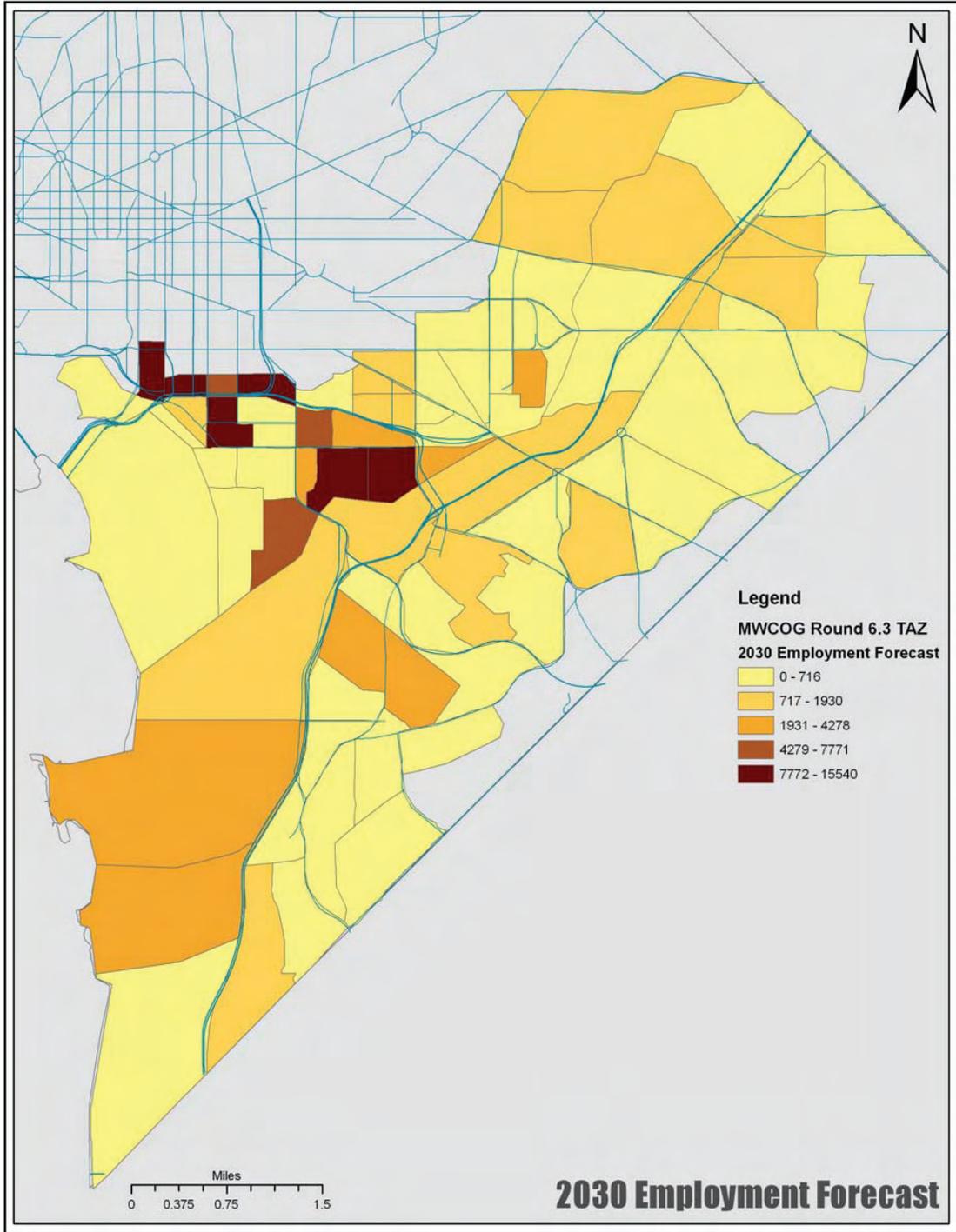


Figure 7. Map of TAZs in AWI study area  
(Source: Parsons Brinckerhoff, 2005)

Figures 8 and 9 show the 2030 forecasts for employment, population, and households from the Round 6.3 land use data.



**Figure 8.** 2030 Employment Forecasts  
 (Source: Parsons Brinckerhoff)

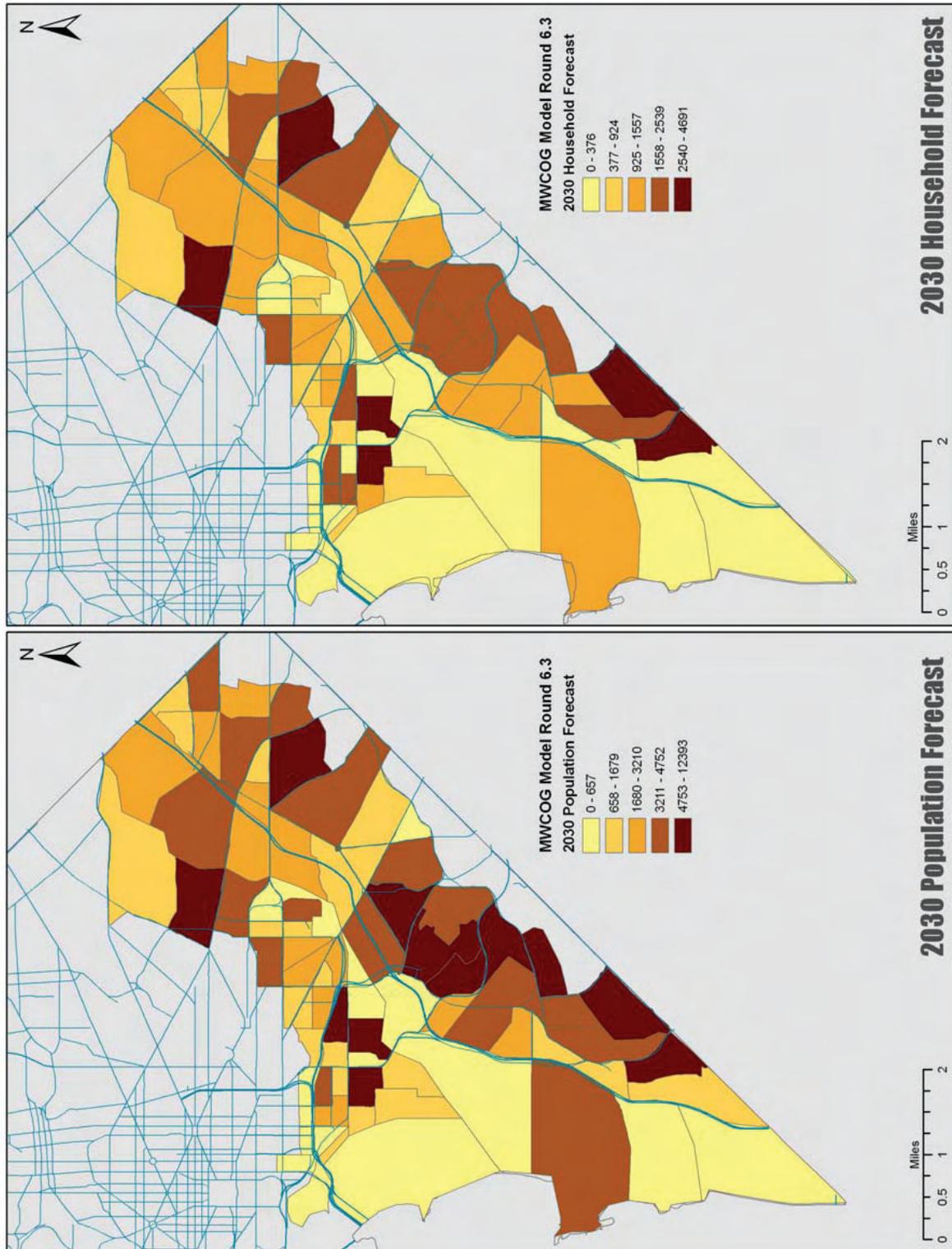


Figure 9. 2030 Population and Household Forecasts (Source: Parsons Brinckerhoff)

**Table 2** shows the comparison of forecasts from 2000 to 2030 in the AWI study area. According to the Round 6.3 land use forecasts, there will be an increase of approximately 30 percent in population, employment, and households over a thirty-year period in the AWI study area.

**Table 2.** 2000 vs 2030 Forecasts in AWI Study Area (Source: MWCOG, 2005)

	<b>Employment</b>	<b>Population</b>	<b>Households</b>
<b>2000</b>	164,518	214,010	87,834
<b>2030</b>	210,116	273,766	115,359
<b>% Change</b>	28%	28%	31%

**Figures 9** and **10** show the map of the targeted growth areas in the AWI study area.

According to the Round 6.3 land use forecasts, there will be a 28-percent (approximate) growth in employment in the AWI study area. Targeted areas of growth include Buzzard Point, Near Southeast, Poplar Point, Anacostia and Northeast DC. There are areas of significant growth in the Navy Yard district.

A 28-percent growth in population is forecasted for the AWI study area. Areas such as the Southwest Waterfront, Buzzard Point, Near Southeast, Poplar Point, Saint Elizabeth’s Hospital, and Hill East are expected to grow in population by 100 percent or more. Such an increase in population is significant. Along the South Capitol Street corridor there is also a significant increase projected for population.

The number of households in the AWI study area is predicted to increase by 31 percent. Areas of growth include the Southwest Waterfront, Waterside Mall, Buzzard’s Point, Near Southeast, Poplar Point, Saint Elizabeth’s Hospital, Hill East, and points east of the Anacostia River. Significant household growth will occur along the South Capitol Street corridor.

The Round 6.3 Land Use Forecasts indicate certain AWI areas where a significant amount of growth will be focused. These areas include the Southwest Waterfront, Buzzard Point, Near Southeast, Hill East, and Poplar Point. This concentration indicates that the high levels of development planned in these areas were included in the Round 6.3 forecasts, and were subsequently incorporated in the travel demand modeling analysis. Because the growth was accounted for in the regional travel demand model, the modeling efforts undertaken for the AWI transportation studies also included the anticipated growth in these targeted areas. The destination of this trail of data input and modeling brings one to the understanding that traffic volumes and the subsequent analyses of traffic impacts as documented in each of the studies took into the consideration the growths in these areas.

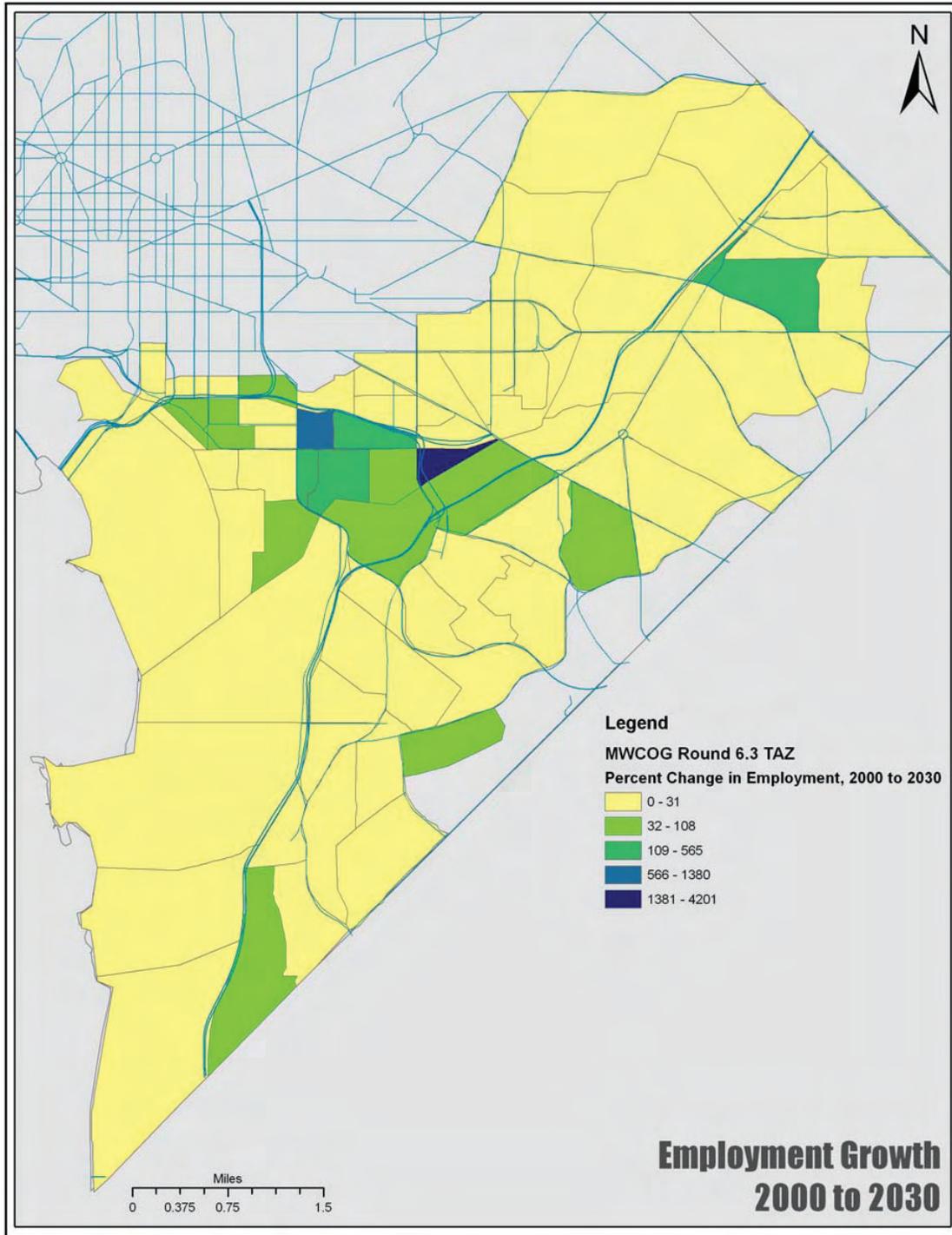


Figure 9. Percent Change in Employment, 2000 to 2030  
(Source: Parsons Brinckerhoff, 2005)

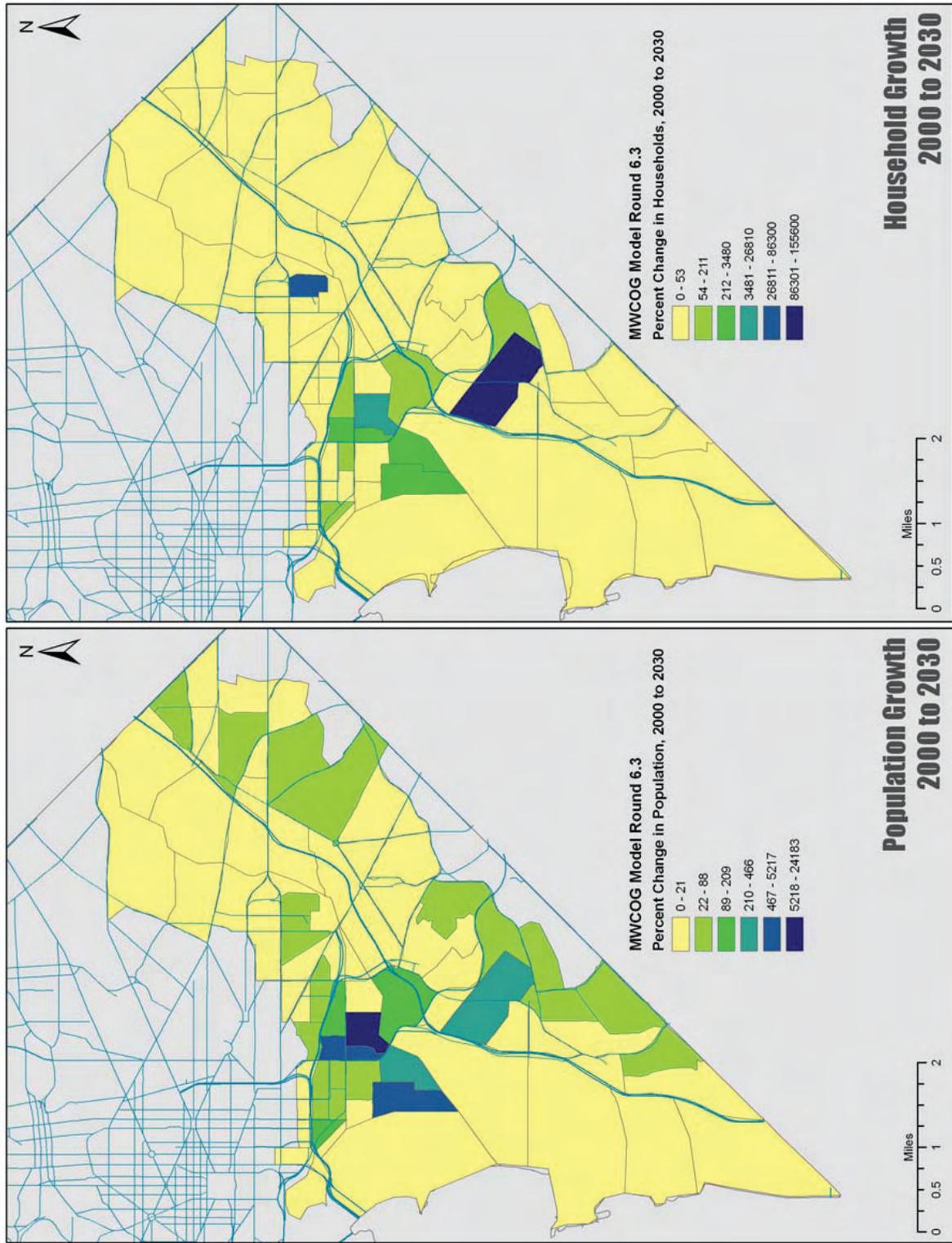


Figure 10. Percent Change in Population and Households, 2000 to 2030 (Source: Parsons Brinckerhoff, 2005)

### ***Section 3. DC Office of Planning***

The previous sections described the efforts of the regional planning body to accommodate land use and transportation changes in their regional modeling efforts. This section will explain the more local activities undertaken by the District Office of Planning (OP). OP has several functions. It is the city agency responsible for serving each DC neighborhood with planning representation, overseeing the development review process, disseminating demographic, economic, and spatial data concerning the District, overseeing historic preservation, and serving as the key agency in the revitalization of the District neighborhoods by developing thoughtful plans for this revitalization. OP was the lead agency behind the development of the Anacostia Waterfront Initiative.

The functions of the agency include developing neighborhood revitalization plans, collaborating with neighborhoods on community priorities, incorporating historic preservation into the overall city planning, and reviewing development plans. OP performs three functions, discussed below, that significantly contribute to District development and that provide crucial inputs for regional land use planning: development review, long range planning, and neighborhood planning and development.

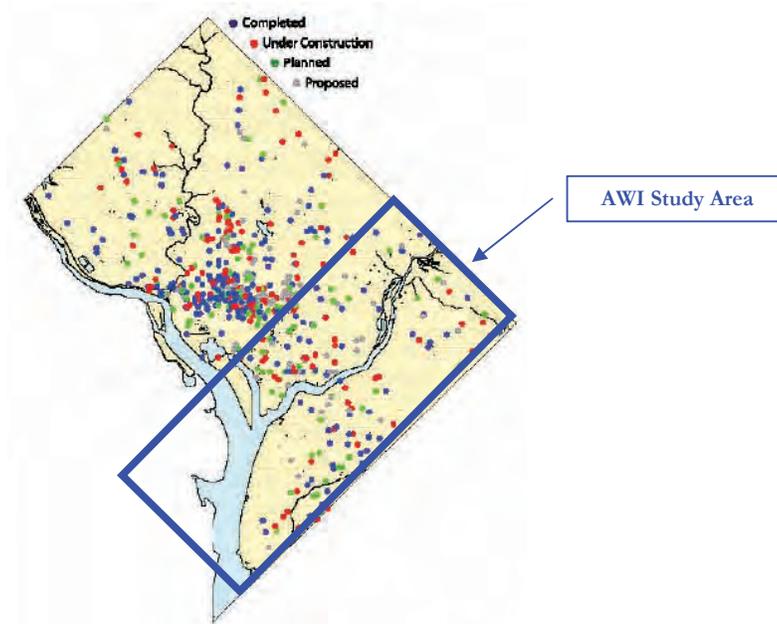
The *Development Review Division* assesses plans that are generally large, complex, and precedent-setting in their potential to change the character of an area. The division reviews development applications submitted to the Office of Zoning, and reports on the developments' consistency with the DC Comprehensive Plan, and the Planned Unit Development (PUD) process. OP staff review the applications and provide reports to the Office of Zoning detailing the development impacts and recommendations for a public hearing. Because OP knows about and reviews all of these major developments, when they provide information to MWCOG they are able to report on significant, real-world changes that are outside classic regional growth equations.

The *Long Range Planning Division* is responsible for guiding long-term (20-year) planning and policy decisions for the District. The division works to identify, analyze, interpret and explain emerging trends in the District, as well as evaluate existing and proposed policies in light of detailed data analysis. The Long Range Planning Division is responsible for developing and monitoring the District Elements of the Comprehensive Plan, the District's only legislatively mandated plan. Staff members of the Comprehensive Planning unit, which is under the Long Range Planning Division, participate in a number of MWCOG committees and provide inputs to MWCOG on the city's land use plans. As with the development review division, the long range planning staff understands both the regular trends in city growth, and more exceptional elements in city expansion.

The *Neighborhood Planning & Development/Urban Design Division* works to revitalize neighborhoods, restore economic health, create a world-class waterfront, and encourage a diverse and dynamic downtown. The division develops neighborhood strategic plans for each of the city's 39 neighborhood clusters, develops comprehensive strategies for large-scale development, and develops master plans for neighborhood revitalization. It is this division that laid the groundwork for the Anacostia Waterfront Initiative. This division is in touch with the District's citizens at the most intimate level.

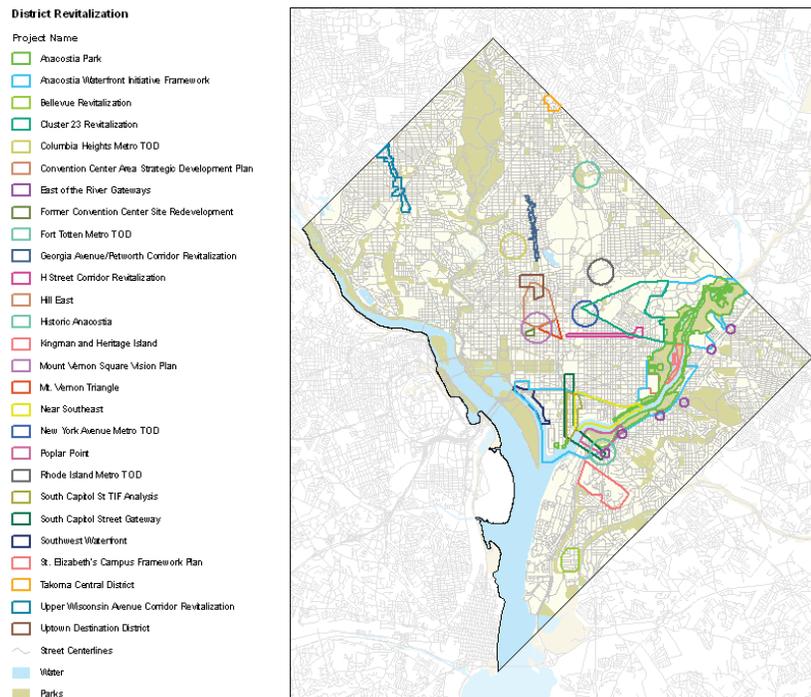
#### ***Section 3.1. Development Activity in the AWI Study Area***

OP is in touch with all development throughout the District. **Figure 11** shows the development activity for the District, as of 2003. As explained in the previous section, there is significant development slated for the District of Columbia, particularly in the AWI target areas. The combined development activity in Wards 6 and 8, the wards in which the majority of the AWI study area lies, consists of 200 development projects in various stages. This development will consist of over 50 million square feet of new or renovated market uses. Another factor of note is that most of the development in the AWI target areas consists of mixed-use development.



**Figure 11.** Development Activity in the District of Columbia  
(Source: DC Marketing Center, 2003)

**Figure 12** shows the development project areas initiated by the Office of Planning. Key development areas with specific correlation to the DDOT’s transportation projects besides the AWI Framework include Anacostia Park, the East of the River Gateways, South Capitol Street Gateway and TIF Analysis, Poplar Point, Historic Anacostia, Poplar Point and St. Elizabeth’s Campus Framework Plan.



**Figure 12.** Office of Planning Development Project Areas (Source: [www.planning.dc.gov](http://www.planning.dc.gov), 2005)

### *Section 3.2. DC OP Development Methodology*

Generally, the Office of Planning tracks development projects that are larger than 10 units or 5,000 square feet of a commercial land use. Each project is tracked by status and defined by one of the following categories: proposed, planned, under construction, and completed.

- **Proposed / Conceptual** – Proposed projects are defined as a potential development where a developer, individual, or organization has ability and interest in developing a project and has made that interest public. OP becomes aware of these projects through news reports or other sources, but has limited information on them or, in some cases, is large redevelopment or planned neighborhoods.
- **Planned** – Projects are defined as planned when a developer has site control and funds committed or the project has received approval from the Office of Zoning. Delivery of the project is expected within five years.
- **Under Construction** – Projects are defined as under construction once a building permit has been issued on the project. Delivery of the project is expected within two years.
- **Completed** – Projects are defined as completed once the first certificate of occupancy is issued on a project, except in the case of a multi-phase project, where each phase of the project is tracked separately.

OP keeps a database of all development projects that meet the criteria described above. They use this information in a number of ways. They review and analyze Office of Zoning development applications and report to the Office of Zoning on impacts of the proposed development and project compliance with the Comprehensive Plan. They use development information, along with market trends, to provide inputs to the MWCOC Cooperative Land Use Forecasts. They develop neighborhood revitalization plans and economic development plans that consider future development activity. Specifically, then, OP's development methodology plays a key role in assessing the impacts of development and infrastructure for the AW region.

**Figure 13** shows the developments planned for the AWI study area, as taken from the Office of Planning's development database. **Table 3** describes the list of development projects in the study area. The development projects include mixed-use, residential, office, institutional, and hospitality uses. Most of the projects in the database are for new construction and are in various stages of progress.

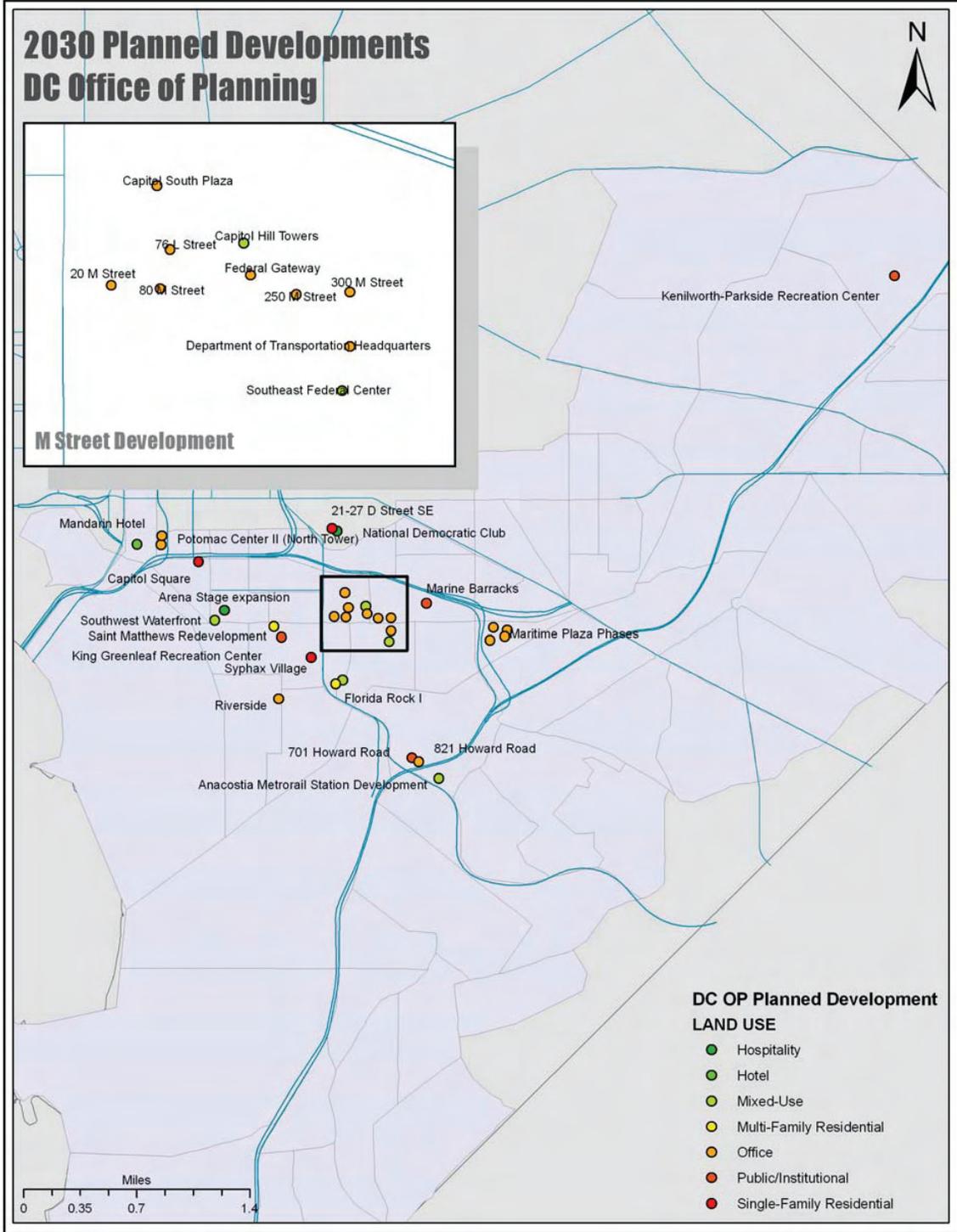


Figure 13. OP's Tracked Development in AWI Study Area  
(Source: DC Office of Planning, 2005)

Table 3. OP's Tracked Development in the AWI Study Area<sup>3</sup>

	Project	Address	Ward	Status	Delivery	Land Use	Valuation	Developer
1	Mandarin Hotel	1330 Maryland Ave SW	2	C3	Mar-04	Hotel	\$ 144,000,000	Mandarin Oriental Hotels
2	Potomac Center (South Tower)	550 12 <sup>th</sup> St SW	2	C3	Apr-03	Office	\$ 70,000,000	JBG Companies
3	Potomac Center II (North Tower)	500 12 <sup>th</sup> St SW	2	UC	Nov-05	Office	\$ 89,000,000	JBG Companies
4	20 M Street	20 M St SE	6	UC	Nov-03	Office	\$ 17,100,000	Lerner Enterprises
5	21-27 D Street SE	21-27 D St SE	6	PR		Single-Family Res.	\$ -	Capital City Development Corp.
6	250 M Street	250 M St SE	6	PR	Oct-03	Office	\$ 36,300,000	William C Smith and Company
7	300 M Street	300 M St SE	6	C2	May-01	Office	\$ 26,336,000	Potomac Investment Properties
8	76 L Street	76 L St SE	6	UNK		Office	\$ 180,000,000	Peterson Companies
9	80 M Street	80 M St SE	6	C2	Jul-01	Office	\$ 25,477,000	Spaulding and Slye Colliers
10	Arena Stage expansion	1101 6 <sup>th</sup> Street, SW	6	PL		Hospitality	\$ 80,000,000	Washington Drama Society
11	Capitol Hill Towers	140 L St SE	6	UC	Aug-05	Mixed-Use	\$ 105,000,000	Valhal Corporation
12	Capitol South Plaza	77 I St SE	6	C		Office	\$ 34,375,000	Potomac Development Corp.
13	Capitol Square	799 G St SW	6	C2	Nov-01	Single-Family Residential	\$ 10,000,000	Eakin Youngentob Associates Inc
14	Department of Transportation HQ	1204 4 <sup>th</sup> St SE	6	UC	Sep-06	Office	\$ 330,000,000	JBG Companies
15	Federal Gateway	1100 New Jersey Ave SE	6	C3	Aug-03	Office	\$ 50,000,000	Spaulding and Slye Colliers
16	Florida Rock I	100 Potomac Ave SE	6	PL		Mixed-Use	\$ 357,500,000	
17	Florida Rock II	25 Potomac St SE	6	PR		Multi-Family Residential	\$ 50,000,000	John Akridge Companies
18	King Greenleaf Recreation Center	201 N St SW	6	UC	Oct-03	Public/ Institutional	\$ 3,400,000	DC Dept of Parks and Recreation
19	Marine Barracks	1011 7 <sup>th</sup> St, SE	6	C		Public/ Institutional	\$ 35,000,000	US Marines Corps
20	Maritime Plaza Phase I	1201 M St, SE	6	C2	Nov-01	Office	\$ 30,000,000	Lincoln Property Company
21	Maritime Plaza Phase II	1220 12 <sup>th</sup> St SE	6	C3	Jan-03	Office	\$ 50,000,000	Lincoln Property Company
22	Maritime Plaza Phase III	1205 M St SE	6	PR		Office	\$ 30,000,000	Lincoln Property Company
23	Maritime Plaza Phase IV	1205-1207 M St SE	6	PR		Office	\$ 30,000,000	Lincoln Property Company
24	National Democratic Club	411 New Jersey Ave SE	6	PR		Hospitality	\$ -	Democratic National Club
25	Riverside	2nd St SW at R St SW	6	PL		Office	\$ 375,000,000	John Akridge Companies
26	Saint Matthews Redevelopment	222 M St SW	6	PL	Jun-04	Multi-Family Res.	\$ 45,000,000	Mid-City Urban LLC
27	Southeast Federal Center	Southeast Federal Center	6	PR	Dec-17	Mixed-Use	\$ 400,000,000	Forest City Enterprises
28	Southwest Waterfront	500 - 1300 Water St SW	6	PR		Mixed-Use	\$ 350,000,000	National Capital Revitalization Corp.
29	Syphax Village	1360 Half St SW	6	C2	Nov-03	Single-Family Residential	\$ 6,184,000	Manna Inc
30	Kenilworth-Parkside Recreation Center	4300 Anacostia Ave NE	7	PL		Public/ Institutional	\$ -	DC Dept of Parks and Recreation
31	701 Howard Road	701 Howard Rd SE	8	C3	Aug-02	Public/ Institutional	\$ 3,087,000	Advantage Schools Inc
32	821 Howard Road	821 Howard Rd SE	8	C3	Oct-02	Office	\$ 3,038,000	Jenco Development
33	Anacostia Metrorail Station Development	Anacostia Metrorail Station	8	PR		Mixed-Use	\$ 65,000,000	

<sup>3</sup> PL=Planned, PR=Proposed/Conceptual, UC=Under Construction, UNK = Unknown, C=Completed, C2=Completed over two years, C3=Completed past two years

**Section 3.3. Comparison of Development Plans with MWCOG’s Cooperative Land Use Forecasts**

A review of MWCOG’s Round 6.3 and Round 6.4A Cooperative Land Use Forecasts shows growth in the areas of households, population, and employment for several zones in the AWI study area. Since the MWCOG land use forecasts do not state specific development projects in their data, a review of the statistics show that some of the development projects are accounted for in the land use forecasts. **Table 4** shows a comparison of MWCOG’s land use forecasts with the known planned/proposed development projects. Both rounds of land use data is displayed so as to show the differences in 2030 forecasts. The table also lists the corresponding AWI transportation studies.

**Table 4.** Comparison of MWCOG’ Land Use and Development Projects in AWI Study Area Studies

SCS	South Capitol Street Studies	CHTS	Capitol Hill Transportation Study
MAT	Maine Avenue Traffic Study	MAC	Middle Anacostia Crossings Study
14TH	14th Street Bridge EIS		

Studies	TAZ										Percent change between 2000 and 2030 Round 6.4A			Development Areas
		2000	2030Round 6.3	2030 Round 6.4	2000	2030Round 6.3	2030 Round 6.4	2000	2030Round 6.3	2030 Round 6.4	Pop	HH	Emp	
		Population			Households			Employment						
CHTS, MAC	169	2365	4233	4233	1	864	864	3060	3204	3004	79%	>100%	-2%	Reservation 13
CHTS, MAC	171	4	4	4	0	0	0	12	12	412	0%	0%	>100%	Reservation 13
SCS	173	18	957	957	15	446	446	439	6689	6589	>100%	>100%	>100%	Ballpark District
SCS	174	20	657	657	13	307	307	643	4405	4805	>100%	>100%	>100%	Ballpark District
SCS	175	24	5828	5828	10	2691	2691	2622	16000	16350	>100%	>100%	>100%	USDOT/SEFC
SCS	176	1741	5381	5381	797	2482	2482	696	2999	3199	>100%	>100%	>100%	Hope VI
SCS	181	0	268	268	0	124	124	70	3100	3300	>100%	>100%	>100%	Maritime Plaza
SCS	182	22	22	22	10	10	10	5682	10799	10899	0%	0%	92%	Navy Yard
MAT, 14TH, SCS	184	0	1440	1440	0	665	665	639	639	639	>100%	>100%	0%	SW Waterfront
MAT, 14TH, SCS	185	144	346	346	94	189	189	893	893	893	>100%	>100%	0%	L'Enfant Plaza
MAT, 14TH, SCS	186	2274	3210	3210	1479	1908	1908	5419	5419	5519	41%	29%	2%	Waterside Mall
MAT, 14TH, SCS	191	57	1568	1568	20	716	716	325	325	525	>100%	>100%	62%	Buzzard's Point
MAT, 14TH, SCS	192	158	746	746	17	286	286	4959	8001	7701	>100%	>100%	55%	Buzzard's Point
SCS	296	2022	2453	2453	792	990	990	152	172	172	21%	25%	13%	St. Elizabeth's - east
SCS	297	723	4090	4090	1	1557	1557	4074	4074	4074	>100%	>100%	0%	St. Elizabeth's - east
SCS	306	3373	3501	3501	1375	1434	1434	930	1100	1300	4%	4%	40%	Anacostia Govt Center
SCS	307	238	514	514	70	197	197	1092	1932	1932	>100%	>100%	77%	Poplar Point
SCS	308	2771	3115	3115	832	991	991	182	182	382	12%	19%	>100%	Anacostia Metro
SCS	319	46	46	46	0	0	0	1131	1131	1131	0%	0%	0%	St. Elizabeth's - west

This information shows that planned growth in the AWI study area over the next 20 years was captured in the MWCOC travel demand model. The model took into account any significant planned growth and land use development that would be independent of any changes to the transportation network. Any development projects that were not included in the land use forecasts or any additional projects to be added to the Office of Planning’s database will be included in the next round of updates to the Cooperative Land Use Forecasts, as deemed for inclusion by the Office of Planning.

However for the purposes of the AWI transportation studies, planned and approved development included in the COG land use forecasts have been incorporated into the transportation analyses. MWCOC’s land use forecasts were not adjusted for each of the transportation studies, so land use assumptions remained the same for each modeling activity. Stakeholders can be confident that the traffic volumes produced as a result of the transportation studies did take into consideration the anticipated growth in the AWI study area.

### ***Section 4. Transportation Review***

As mentioned earlier, local jurisdictions and MWCOC TPB use the regional travel demand model to produce travel demand forecasts and air quality assessments to support long-range planning. Projects that are listed in the CLRP and six-year TIP are modeled regularly to ensure air quality conformity for the region, as required by air quality and metropolitan planning legislation (42 USC 7506 and 23 USC 134).

New highway and transit projects or improvements must be evaluated prior to construction to determine how well they address future demand. The design year for an entirely new facility or an improvement to an existing facility is usually 20 to 30 years in the future. As a result of this need for a long-term forecast, state departments of transportation (DDOT, VDOT, and MDSHA), WMATA, and local transportation agencies all use MWCOC's travel demand models to produce future travel forecasts for their corridor and sub-area studies. These studies must be performed in cooperation with the TPB and in accordance with federal requirements, and so they all use the MPO-approved regional model. Federal regulations require that corridor or sub-area studies be performed when any major highway or transit investments are being considered, and receive particular scrutiny if federal funds are to be used. The forecasts derived from the regional models are used to analyze different transportation options and determine the potential effects those options would have on the regional and local system. In particular the forecasts can help determine future traffic congestion levels, which help local transportation officials make informed decisions. Because state and local jurisdictions are using the most recent travel demand model and cooperative land use forecasts, they are assured of using TPB-recognized standards. This gives a greater sense of security concerning land use, development, and highway network decisions.

The evaluation of the build year for any given transportation improvement involves taking travel forecasts, and determining how those forecasts specifically affect intersections within the study area. Specific counts at an intersection provide the basis for how future trips will be distributed in a given area. Within traffic analysis zones, there are individual links where automobiles travel. If there are 30,000 trips in a TAZ, not all of them travel on every link. Instead, trips are focused along specific routes, based on information in the model that designates origins and destination. Once travel forecasts are disseminated among area roadways, and distributed through specific intersections, there is a better understanding of what will happen at a given intersection once an improvement is put in place. For example, if DDOT knows what the volumes are on specific links within a TAZ, particularly a link with a new left-turn lane proposed, then DDOT will be able to predict how many automobiles will use the new turn lane.

#### ***Section 4.1. Summary of Project-Level Traffic Modeling***

The MWCOC Regional Travel Demand Model Version 2.1 and the officially adopted Cooperative Land Use Forecasts were used in each of the transportation studies for the AWI network. Although the studies were conducted separately, the fact that the MWCOC model was used shows that the same development assumptions from the MWCOC land use forecasts were used in each model application, and thus the resulting traffic forecasts were replicated for each study. Similar modeling assumptions were used in the modeling activities for each study. The current MWCOC land use forecasts were used for each of the studies to provide continuity in land use assumptions for each modeling activity. Roadway networks were refined where needed, and the model was calibrated with real-world traffic data to ensure accuracy.

The following is a summary of the travel demand modeling activities in each of the AWI projects.

**Table 4.** Summary of Travel Demand Models for each AWI Study

	<b>South Capitol Gateway and Anacostia Access</b>	<b>Middle Anacostia River Crossings Transportation Study</b>	<b>Kenilworth Avenue Corridor Transportation Study</b>	<b>11<sup>th</sup> Street Bridges Environmental Impact Statement</b>	<b>South Capitol Street Environmental Impact Statement</b>	<b>Southwest Waterfront-Maine Avenue Study</b>
<i>Travel Demand Model</i>	Version 2.1/TP+, Release C	Version 2.1/TP+, Release C	Version 2.1/TP+, Release C	Version 2.1/TP+#50	Version 2.1/TP+#50	n/a
<i>Land Use Forecast</i>	Round 6.3	Round 6.3	Round 6.3	Round 6.4A	Round 6.4A	Trip generation rates used
<i>Horizon Year</i>	2030	2030	2030	2030	2030	2010

- South Capitol Gateway and Anacostia Access

The travel demand forecasting was conducted using the MWCOC Version 2.1/TP+, Release C Regional Travel Demand Model. The MWCOC model was used to develop year 2030 traffic forecasts based on the demographic, employment, and land use data found in the MWCOC Round 6.3 Cooperative Land Use Forecast.

- Middle Anacostia River Crossings Transportation Study

As part of the traffic analysis completed for this study, 2030 was selected as the design year for gauging the magnitude of traffic impacts for the Middle Anacostia River study area because of the timing of this study with respect to the future considerations taken into account by the regional traffic model. The MWCOC Version 2.1/TP+, Release C Regional Travel Demand Model was used to provide estimates of future traffic demand for the transportation facilities within the study area. Round 6.3 Cooperative Land Use Forecasts were also used. Future conditions were evaluated under two scenarios: the No Build Condition, and the Build Condition.

- Kenilworth Avenue Corridor Transportation Study

The travel demand forecasting was conducted using the MWCOC Version 2.1/TP+, Release C Regional Travel Demand Model and Round 6.3 Cooperative Land Use Forecasts to develop year 2030 traffic forecasts.

- 11th Street Bridges Environmental Impact Statement

This project will use the MWCOC Version 2.1D/TP+#50 Regional Travel Demand Model and Round 6.4 A Cooperative Land Use Forecasts to develop year 2030 traffic forecast. The analysis of future conditions will be evaluated under several scenarios: a No Build scenario and multiple Build scenarios.

- South Capitol Street Environmental Impact Statement (EIS)

This project will use the MWCOC Version 2.1D/TP+#50 Regional Travel Demand Model and Round 6.4 A Cooperative Land Use Forecasts to develop year 2030 traffic forecast. The analysis of future conditions will be evaluated under several scenarios: a No Build scenario and multiple Build scenarios.

- Southwest Waterfront-Maine Avenue Study (EIS)

Because of the localized study area for this project, future traffic forecasts from the MWCOC were not developed. Trip generation rates were used to calculate development-related traffic volumes and future traffic volumes were developed by applying an average growth rate based on historic traffic data to existing year traffic volumes.

## Section 4.2. Model Networks

In the AWI transportation studies, the MWCOG travel demand model was used to provide estimates of the future travel situation in order to evaluate the proposed transportation improvements in the AWI study area. In each study, the future was evaluated using two different ideas of what the future travel conditions would be: a No-Build condition, and a Build condition. The No-Build condition, as the name implies, consists of the future with only planned transportation improvements. The No-Build generally would be the roadway network we see today coupled with improvements as listed in the long range plan and 2030 traffic forecasts. This scenario would be the basis for making a comparative evaluation and would serve to guide transportation decision makers on what improvements, if any, were necessary. In contrast, the future, when considered using the Build scenario, would involve the proposed roadway improvements currently being studied. A Build scenario usually consists of the proposed roadway improvements coupled with the planned transportation improvements from the CLRP, combined with the 2030 traffic forecasts. In some instances, more than one Build scenario was evaluated, especially in cases where several design options were developed.

The following is a summary of the scenarios evaluated under each AWI transportation study.

**Table 5.** Model Networks of AWI Projects

	<b>South Capitol Gateway and Anacostia Access</b>	<b>Middle Anacostia River Crossings Transportation Study</b>	<b>Kenilworth Avenue Corridor Transportation Study</b>	<b>11<sup>th</sup> Street Bridges Environmental Impact Statement</b>	<b>South Capitol Street Environmental Impact Statement</b>
<i>Horizon Year</i>	2030	2030	2030	2030	2030
<i>No-Build Conditions</i>	n/a	Existing transportation network with refinements and planned improvements	Existing transportation network with refinements and planned improvements	Existing transportation network with refinements and planned improvements	Existing transportation network with refinements and planned improvements
<i>Build Conditions</i>	<ul style="list-style-type: none"> <li>• Six-lane principal arterial</li> <li>• Full connections at N St, Potomac Ave, Suitland Pkwy, I-295, and MLK Jr. Blvd.</li> </ul>	<ul style="list-style-type: none"> <li>• Full interchanges Pennsylvania Ave &amp; Anacostia Frwy, 11<sup>th</sup> St &amp; Anacostia Frwy, and 11<sup>th</sup> St &amp; Southeast Frwy</li> <li>• Full movement at-grade circle at Barney Circle</li> <li>• Extended 17<sup>th</sup> Street, Kentucky Ave, and M Street</li> <li>• Development of Reservation 13 Road from Barney Circle to Independence Ave</li> <li>• Redevelopment of SE Frwy between 11<sup>th</sup> St and Sousa Bridges as urban boulevard</li> </ul>	<ul style="list-style-type: none"> <li>• Alt 1- eight-lane urban boulevard</li> <li>• Alt 2 – four- or six-lane limited-access roadway</li> <li>• Alt 3 – at-grade four-lane roadway + depressed six-lane roadway</li> </ul>	<ul style="list-style-type: none"> <li>• Build conditions not yet determined</li> </ul>	<ul style="list-style-type: none"> <li>• Alt 1 – six-lane urban boulevard with at-grade intersections, a traffic oval, a traffic circle, a modified interstate interchange</li> <li>• Alt 2 – six-lane urban boulevard with a grade-separated overpass, a traffic oval, a traffic circle, a diamond interstate interchange, and a center-turn ramp interchange</li> </ul>

- South Capitol Gateway and Anacostia Access

Since this was a conceptual planning study, a 2030 No Build scenario was not needed in this study. The 2030 Build condition consisted of a six-lane South Capitol Street corridor from I Street to Suitland Parkway. South Capitol Street was downgraded in classification from an urban highway to a principal arterial, which reduced the assumed travel speed of the roadway in the travel demand model. Multiple design options at several locations along South Capitol Street were evaluated outside the travel demand modeling exercise.

- Middle Anacostia River Crossings Transportation Study

The 2030 No Build traffic conditions for this study consisted of the existing transportation network combined with 2030 traffic volume projections. Refinements were made to the existing roadway network in the MWCOG transportation network to ensure linkages to major roadways in the Middle Anacostia study area. The 2030 Build condition included the missing connections at several key locations within the study area, and full movements at major interchanges.

- Kenilworth Avenue Corridor Transportation Study

The 2030 No Build traffic conditions for this study consisted of the existing transportation network combined with 2030 traffic volume projections. Refinements were made to the existing roadway network in the MWCOG transportation network to ensure linkages from arterials to Kenilworth Avenue. Three Build conditions were analyzed with varying designs: (1) an eight-lane urban boulevard, (2) a four-lane or six-lane limited-access roadway flanked by access roads, (3) a combination of an at-grade four-lane roadway between Pennsylvania Avenue and East Capitol Street and a depressed six-lane roadway flanked by at-grade access roads from East Capitol Street to the DC/Maryland border.

- 11th Street Bridges Environmental Impact Statement (EIS)

The 2030 No Build traffic conditions for this study consisted of the existing transportation network combined with 2030 traffic volume projections. Refinements were made to the existing roadway network in the MWCOG transportation network to ensure linkages to roadways in Historic Anacostia, and Capitol Hill. The Build condition was taken from the Middle Anacostia Crossing Transportation Study recommendations, which include full interchange connections on both sides of the bridges. At the time of this writing, the Build conditions were still being developed based on comments from the EIS public scoping meetings.

- South Capitol Street Environmental Impact Statement (EIS)

The 2030 No Build traffic conditions for this study consisted of the existing transportation network combined with 2030 traffic volume projections. Refinements were made to the existing roadway network in the MWCOG transportation network to ensure linkages from arterials to South Capitol Street. Also 4<sup>th</sup> Street SW was assumed to be closed as proposed in the Fourth Street SW Transportation Study. The Build condition was taken from the South Capitol Street Gateway and Anacostia Access Study recommendations, which included a six-lane urban boulevard from I Street to Suitland Parkway. Two Build conditions were analyzed with varying designs: (1) an at-grade intersection at M Street, a traffic oval at Potomac Ave, a traffic circle at Suitland Parkway, a modified existing interchange at I-295, (2) a grade-separated overpass at M Street, a traffic oval at Potomac Avenue, a traffic circle at Suitland Parkway, a diamond interchange at I-295, and a center-ramp interchange at Martin Luther King Jr. Boulevard.

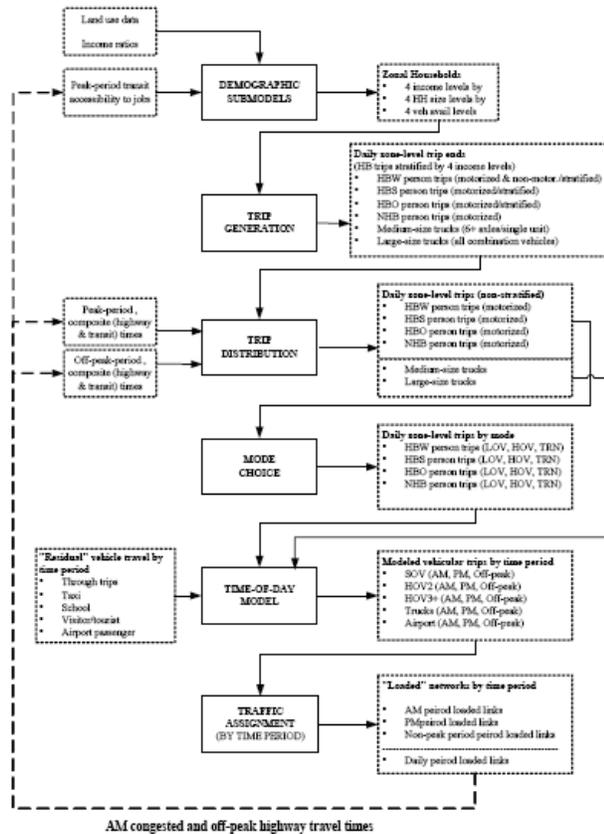
## Section 4.3. Development of Traffic Forecasts

Every road has a particular number of vehicles that are estimated to travel on it. What tells a regional model the most about a particular road are the activities around it. Every land use, whether a shop, a home, or an office, produces a certain number of trips. Based on national standards, each land use is assigned trip generation characteristics, how many and what type of trips are made to and from it every day. If, for example, a given traffic analysis zone contains a school, a 10-story office building, and one hundred homes, then the daily trips associated with each of those land uses are coded into the model and demonstrated in model outcomes. Once the model is run, then it is clearer how much traffic is forecasted to use the TAZ roadways. The following is a detailed description of how that process works.

According to the MWCOC travel model structure follows a defined process shown in **Figure 14** to develop traffic forecasts. The MWCOC travel demand model first uses demographic submodels to allocate the total number of households in a given zone among 64 cross-classes, defined as four income levels by four household size groupings by four vehicle availability groups.

The land use inputs to the model from the Cooperative Land Use Forecasting process results in TAZ-level households, population, group quarters population, and employment by four categories (office, retail, industrial and other). It is this information that is fed into the demographic submodels.

The trip generation and distribution models simulate daily person trips corresponding to four trip purposes: *Home-Based Work (HBW)*, *Home-Based Shopping (HBS)*, *Home-Based Other (HBO)*, and *Non-Home Based (NHB)*. The trip generation model estimates the number of trips produced by and attracted to each traffic analysis zone, based on the household, population, and employment data of the zone. The HBW trip rates reflect both motorized and non-motorized (transit, automobile, bicycle, and walk) person travel. Trip rates associated with the remaining purposes reflect motorized (transit and automobile) person travel only. The non-motorized component of HBW trip-ends generated is subsequently extracted from the total trip-ends prior to trip distribution. The trip generation process yields productions and attractions, which are divided by the four income levels for the home-based purposes, and remains undivided for the NHB and truck-related purposes.



**Figure 14. MWCOC Travel Model Structure**  
(Source: MWCOC, 2004)

The trip distribution model matches the trips produced in each zone with the zones to which they are attracted, and thus creates origin-destination pairs. This linkage is created using a standard gravity model formulation, so the origin-destination pairs are based on gravitation attraction (the pull one zone may have on another from a travel perspective), and travel distance. The trip distribution process results in six daily trip tables that correspond to the basic motorized person and truck purposes.

The mode choice model allocates the motorized person trips for each of the four purposes (HBW, HBS, HBO, NHB) among highway and transit modes (single-occupancy vehicle, high-occupancy vehicle, transit). A time-of-day model assigns daily vehicle trips among three time periods: AM peak period (6AM-9AM), PM peak period (4PM-7PM) and off-peak period (all remaining hours). The model consists of survey-based factors that are applied on the basis of purpose, mode, and trip orientation. The time-of-day model ultimately produces three “total vehicle” trip tables, one for each of the three time periods.

The traffic assignment model consists of separate assignment executions for each of the three time periods. Thus, trips are now assigned paths, and the model determines the best path in terms of time and distance for each origin-destination pair. The model also predicts factors that may trigger changes in travel behavior, such as congestion or transit subsidies. A link-level method of successive averaging process is applied after each successive highway assignment process to ensure converging highway volumes and speeds. Network links are thus loaded with restrained speeds and traffic volumes. This information is then recycled back to the trip generation and trip distribution steps for several iterations. The final iteration produces link-level traffic forecasts for the following time periods: daily volumes, AM peak period volumes, PM peak period volumes, and off-peak volumes. Individual intersection turning movement volumes are developed as part of the post-processing routines, which is performed outside of the model.

**Section 4.3.1 Example**

The following is an example of the MWCOG modeling process as applied to a traffic analysis zone within the AWI study area.

TAZ #175 is located on M Street SE between South Capitol Street and the 11<sup>th</sup> Street Bridges. This TAZ has the following land use characteristics, as taken from the Round 6.4A Cooperative Land Use Forecasts.

**Table 6A.** Round 6.4A Cooperative Land Use Forecasts for TAZ #175

TAZ	Population	Households	TOTAL Employment	Industrial	Retail	Office	Other
175	5,828	2,691	17,932	168	179	14,273	3,312

This TAZ is associated with development such as the Southeast Federal Center and the new USDOT Headquarters, which will represent a significant growth in employment and mixed-use development. The 2030 forecasts capture this growth.

When processed through the MWCOG Version 2.1D/TP+#50 Regional Travel Demand Model, the resulting trip information is as follows:

**Table 6B.** Resulting Trips for TAZ #175

Trip Type	TAZ	Person Trips				Total Person Trips
		Home-Based Work	Home-Based Shopping	Home-Based Other	Non-Home Based	
Productions	175	1,348	1,482	4,951	6,548	14,329
Attractions	175	26,061	47	9,672	6,548	42,328

Approximately 56,000 person trips are produced per day at TAZ #175, thus generating trips to travel throughout the regional network from this location. Approximately 42,000 daily trips are attracted to TAZ #175, which means that this many persons will travel to TAZ #175 throughout the day, mostly for employment.

The total number of person trips for TAZ #175 will be input into the trip distribution and traffic assignment modules of the MWCOG to determine the future traffic forecasts. The forecasts are spread across all highway links associated with the TAZ. For TAZ #175, a centroid from the TAZ will distribute vehicle trips to nearby streets – 1<sup>st</sup> Street SE, and M Street SE. Thus all trips in this zone will travel to and from the area via 1<sup>st</sup> Street or M Street.

For another example, TAZ #188 is located at the corner of South Capitol Street and M Street SW. This TAZ has the following land use characteristics, as taken from the Round 6.4A Cooperative Land Use Forecasts.

**Table 7A.** Round 6.4A Cooperative Land Use Forecasts for TAZ #188

TAZ	Population	Households	TOTAL Employment	Industrial	Retail	Office	Other
188	888	277	594	57	66	251	220

This TAZ has less population, households, and employment forecasts than in TAZ #175. This TAZ is mostly residential in nature. When processed through the MWCOG Version 2.1D/TP+#50 Regional Travel Demand Model, the resulting trip information is as follows:

**Table 7B.** Resulting Trips for TAZ #188

Trip Type	TAZ	Person Trips				Total Person Trips
		Home-Based Work	Home-Based Shopping	Home-Based Other	Non-Home Based	
Productions	188	155	166	681	195	1,197
Attractions	188	787	17	893	195	1,892

Only 2,900 person trips are produced per day at TAZ #188, thus generating trips to travel throughout the regional network from this location. Approximately 1,900 daily trips are attracted to TAZ #188, and 1,200 person trips are produced from this zone per day. This zone being mostly residential will produce and attract fewer trips than a zone with mostly employment characteristics. The resulting vehicle trips to and from this zone will travel on links near this zone, such as M Street and South Capitol Street.

This information can now be used by DDOT to determine future infrastructure needs for Near Southeast area, and for the planned development on the corresponding land area.

#### **Section 4.4. Review of System-Wide Future Volumes**

This section presents the analysis of future daily traffic conditions, based on the various traffic forecasts that were available during August, 2005. Maps of the 2030 traffic forecasts for the AWI transportation network are shown in **Figures 15 and 16**.

##### **Section 4.4.1. Source of Data**

The primary source of information for the traffic analysis was the major transportation studies completed and underway in the Anacostia Waterfront Transportation Master Plan study area. Only projects that proposed significant infrastructure work were examined to assess the traffic impacts of various transportation improvement projects. Not every study performed detailed travel demand forecasting or tried to determine other future traffic conditions.

Traffic data was obtained from three main projects, listed below:

- The Anacostia Access Study, led by Parsons Brinckerhoff. This project covered the South Capitol Street corridor from Anacostia to the SE/SW Freeway. Only the 2030 Build Conditions were assessed in this project.

- The Middle Anacostia Crossings (MAC) Study data was obtained from KCI Associates for the 2030 No-Build and Build Conditions. The river crossings that were analyzed included the 11<sup>th</sup> Street Bridges and the Sousa Bridge.
- The Kenilworth Avenue Corridor Study data was obtained from STV Inc. This project examined traffic flows under several different roadway configurations along Kenilworth Avenue from Eastern Avenue to the interchange with Pennsylvania Avenue. Their study analyzed 2030 No-Build and Build Conditions.

Another study that was examined but not used for the comparative analyses was the New York Avenue project. This project was not used for the comparative analyses because it did not provide overlapping traffic volumes for the study area and their future forecast year was 2025.

#### **Section 4.4.2. Assumptions**

For performing comparative analyses of the traffic data from the three studies, it is important to understand the assumptions that each study used for travel demand modeling. All projects assumed that 2030 was the horizon year for future traffic analyses.

The main factor is the order in which each study assumed that the other projects would be completed. The order impacted forecasted traffic flows. The studies assumed that the projects would be completed in the following sequence: the South Capitol Street corridor, the Middle Anacostia Crossings improvements, and then the Kenilworth Avenue projects. The forecasts for each study assumed complete build of the various elements of each previous study improvements. For example, the MAC study forecasts assumed that all of the 11<sup>th</sup> Street Bridges, Barney Circle and the Anacostia Freeway interchange with Pennsylvania Avenue would be complete. Consequently, the MAC study did not perform traffic forecasting when only one element was complete, but before the next element was under construction. Thus, any comparative analyses between the No-Build and Build forecast at one location should be performed with the caveat that other discrete locations have been reconfigured.

#### **Section 4.4.3. 2030 No-Build Condition Trends**

By not constructing the proposed improvements to the AWI transportation infrastructure, many of the same problems that we see today (lack of accessibility, inadequate multi-modal options, limited movements at interchanges and intersection) will continue to exist. The roadway network problems coupled with anticipated growth in traffic volumes will result in reduced traffic operations: increased congestion, increased vehicular delays, reduced vehicle speeds, and increased vehicle-pedestrian conflicts.

Traffic volumes for the 11<sup>th</sup> Street Bridges are projected to increase over the next 20 years from approximately 93,000 to 127,000 vehicles per day, an increase of about 37 percent. With the existing freeway operating at acceptable levels of service, such an increase in traffic volumes will deteriorate roadway operations on the 11<sup>th</sup> Street Bridges. Traffic volumes are forecasted to decrease on the Sousa Bridge (Pennsylvania Avenue) from 93,000 to 87,000 vehicles per day, a decrease of about six percent.

Kenilworth Avenue will have major increases in traffic volumes over the next 20 years, according to the traffic forecasts. Traffic volumes on Kenilworth Avenue from Eastern Avenue to Benning Road are projected to grow by 63 percent, from 92,000 to 150,000 vehicles per day. Traffic volumes on the section between East Capitol Street and Benning Road would increase from 99,000 to 138,000 vehicles per day, a 39 percent increase. South of East Capitol Street, traffic volumes on Kenilworth Avenue would increase by 45 percent, from 77,000 to 112,000 vehicles per day. Examining the river crossings, the East Capitol Street Bridge volumes are forecasted to increase over the next 20 years from 60,000 to 69,000, a 15 percent increase. Traffic on the Benning Road Bridge is projected to decrease by 20 percent, from 77,000 to 62,000 vehicles a day.

If no significant transportation infrastructure improvements are made, the trend in traffic in year 2030 reveals that traffic volumes will continue to increase on Kenilworth Avenue and the 11<sup>th</sup> Street Bridges. Although some traffic on the river crossings will decrease, more than likely due to congestion, traffic will divert to East Capitol Street Bridge, and the 11<sup>th</sup> Street Bridges. This will likely deteriorate traffic conditions not only on these river crossings, but also along adjacent arterials to these river crossings. Infrastructure improvements must be made to the 11<sup>th</sup> Street Bridges and Kenilworth Avenue so as to accommodate the anticipated traffic growth.

It is important to note that the South Capitol Street corridor was not considered in this analysis, as a 2030 No-Build scenario was not produced as part of the South Capitol Street Gateway and Anacostia Access Study.

**Figure 15.** 2030 No-Build Conditions for AWI Study Area  
 (Source: DDOT, Parsons Brinckerhoff, KCI, STV)  
**Note:** 2030 No-Build forecasts were not developed for the South Capitol Street Gateway and Anacostia Access Study. The 2030 Build forecasts for this project are shown on this map.



## Section 4.4.4. 2030 Build Condition Trends

In reviewing the 2030 Build Condition trends, the South Capitol Street corridor improvements will not increase capacity of that roadway system, but were designed to improve pedestrian and cyclist mobility, enhance the streetscape, and replace the aging bridge. The downgrading of South Capitol Street from an urban highway to an urban boulevard has the potential to decrease travel speeds and traffic volumes. Forecasted volumes for the South Capitol Street corridor are projected to grow to 72,000 vehicles per day, which is only a 22 percent increase from existing traffic volumes.

The 11<sup>th</sup> Street Bridges would be reconfigured so that one bridge would carry interstate traffic from I-295 to the SE-SW Freeway, and the other bridge would carry local traffic from Anacostia into the residential neighborhood to the north of the SE-SW Freeway. The second major component would be new connections to and from Anacostia Freeway. This connection does not currently exist and has a major impact on the overall traffic flows. The new connection would separate local from interstate traffic as well as provide a new connection, all while taking advantage of the available roadway capacity. Overall, the access into the Washington core should be improved by this project, and traffic on the adjacent bridges should be reduced.

Once the bridges are reconfigured, volumes are projected to increase from approximately 127,000 to 209,000 vehicles per day, an increase of about 65 percent. The increase of traffic in this area is due to the shifting of traffic from I-295 and South Capitol Street Bridge onto the 11<sup>th</sup> Street Bridge. In addition, some traffic would shift from the Sousa Bridge (Pennsylvania Avenue) to the 11<sup>th</sup> Street Bridge, as traffic volume decreases from 87,000 to 75,000 vehicles per day, a decrease of about 14 percent. The biggest impact is seen on the SE Freeway between the 11<sup>th</sup> Street Bridge and Barney Circle, as the daily traffic volumes decrease from 54,000 to 25,000.

The Kenilworth Avenue project would reconfigure the roadway from Eastern Avenue to the interchange with Pennsylvania Avenue without adding capacity. Two major arterials that cross Kenilworth Avenue are East Capitol Street and Benning Road. This project is likely to increase the traffic volumes on Kenilworth Avenue from Eastern Avenue to Benning Road from 150,000 to 154,000 vehicles per day from No-Build to Build Conditions, a three percent increase. Traffic volumes on the section between East Capitol Street and Benning Road increase from 138,000 to 147,000 vehicles per day, by about seven percent. Volumes remain relatively the same on the section south of East Capitol Street. Examining the river crossings, the East Capitol Street Bridge volumes will decrease in the Build Conditions, from 69,000 to 64,000, a nine percent decrease. Traffic on the Benning Road Bridge should increase by two percent, from 62,000 to 63,000 vehicles a day.



### *Section 4.5. Event Traffic*

In addition to understanding how new development and transportation improvements affect traffic on a typical day, DDOT also focuses on how the transportation system will handle the number of automobiles and pedestrians that a particular event will attract. DDOT's planning for the new ballpark in the South Capitol Street corridor provides an example of how the department considers the effects of events.

In order to account for what happens during particular events, DDOT generally performs a specific study to understand what the implications of a noteworthy new traffic generator will be on traffic flow. In the case of the potential new major league ballpark, DDOT added an appendix to its Anacostia Access Study. The appendix described specific assumptions about what could be expected during games, and analyzed the impacts on the surrounding traffic, as well as on the proposed infrastructure improvements.

Because several scenarios could be analyzed to determine the impacts of ballpark traffic on the Anacostia Access study area, the first step was to choose the most relevant scenario. For the purposes of the event analysis for the ballpark, to understand what would happen when traffic would be the most irritating to drive through and difficult to manage, a "worst-case" scenario was selected for analysis.

Developing the most representative worst-case scenario meant considering the ballpark impacts during the morning and evening peak hours. This step layered the impacts upon the peak-hour traffic volumes that had already been analyzed as part of the study. The result of this layering showed that weekday baseball games would be considered for the worst-case scenario because the weekday ballpark impacts were also likely to affect the evening peak hour.

DDOT developed the traffic forecasts for this worst-case scenario, and then could determine the amount of congestion that would occur at intersections, the time it would take to clear vehicles at various intersections, and the most direct route to divert traffic so as to avoid congestion. After analyzing the worst-case scenario, DDOT determined the future transportation improvements that would allow for traffic to flow reasonably well through the area during events. This finding was predicated, though, on traffic for the event being managed by District officials in order to avoid the bottlenecks identified during the first pass of analysis.

DDOT took the initiative in analyzing game day operations. The Sports and Entertainment Commission will be responsible for developing a ballpark traffic management plan and a ballpark traffic operations plan in accordance with DDOT standards so as to better address event-specific traffic impacts, and to effectively manage game day operations.

DDOT applies this procedure, an analysis outside the confines of the travel demand modeling activities, to event-specific traffic. Thus, event-specific traffic analyses are performed as part of the operational analysis in their transportation studies. The determination of specific events to include in the operational analysis of a particular project is made by DDOT based on the anticipated impacts of such an event.

### *Section 4.6. Conclusions*

The Build conditions of each study, with their complementary future traffic conditions, demonstrate that there will be shifts and changes in the Anacostia Waterfront-area roadways over the next 20 years. In some places, traffic volumes increase slightly, and in others the traffic decreases slightly. Most of the infrastructure improvements rationalize the transportation system, enabling regional connections that are now missing or rebuilding the roadway to suit the scale of the area through which it runs. The aim of the improvements is to make the entire system more responsive to the range of users—pedestrians, local drivers, regional drivers, cyclists—rather than simply moving more cars through the system faster. Traffic patterns will be shifted, but they should not diminish the overall quality of the transportation network. Although traffic levels will change, the overall mobility and accessibility in the area will improve.

### *Section 5. Summary of Findings*

This study was intended to make the federally mandated planning process clear and explain the logic behind the data used by DDOT. It is in response to community requests for DDOT to provide a better level of clarity and detail about its modeling process. The goal of this document is to assure the community that DDOT's planning has incorporated the proposed and planned developments in the AWI study area, and that infrastructure improvements have been planned and designed for the anticipated growth.

DDOT follows the federally mandated transportation planning process as outlined by the Transportation Planning Board. That process requires the use of the regional travel demand model and cooperative land use forecasts developed by MWCOG and officially adopted by the TPB. The TPB ensures that regional development and transportation infrastructure projects are approved through the official process, and that collectively these projects do not affect the air quality conformity of the region. The MWCOG travel demand model and cooperative land use forecasts are the backbone of this process.

All jurisdictions in the Washington, DC metropolitan region contribute inputs to the cooperative land use forecasts, including data on future growth that is expected from commercial, industrial, recreation, and residential development. The DC Office of Planning has the major role of providing input to MWCOG's modeling and forecasting committees for the District of Columbia. DCOP tracks development in the city and provides this information to MWCOG on a regular basis, so that model updates will contain the latest information.

During the investigation of the processes explained in this report, several findings became clear.

- ◆ Although MWCOG and DCOP may discuss their development forecasts in different ways, they are, in fact, working in concert concerning the land use data that is the foundation for planning studies.
- ◆ DDOT used the MWCOG models and cooperative land use forecasts in its transportation planning studies that make up the Anacostia Waterfront Initiative study area.
- ◆ DCOP provided information to MWCOG about what development it foresaw in the area.

The MWCOG model is the foundation for determining future traffic volumes and future traffic impacts. As studies move from conceptual level to full design and implementation, DDOT updates future traffic volumes and future transportation impacts using the latest MWCOG models and forecasts to ensure that anticipated development and infrastructure growth have been captured in its evaluation. In conclusion, a comprehensive look at the impacts affecting the city and region has occurred even in local transportation studies, just by the use of the federally mandated planning process and tools.

Estimating the future is an undertaking that necessarily involves leaps of logic and some amount of guesswork. DDOT has relied upon the best available information, proven models, and consistent assumptions to inform their decision making. This mobility study shows how DDOT, working with the District, MWCOG and OP, has comprehensively approached the issue of meeting future land uses and travel demand with suitable transportation infrastructure.

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District Department of Transportation  
64 New York Avenue NE  
Washington, DC 20002  
202.671.2800  
[www.ddot.dc.gov](http://www.ddot.dc.gov)

