

11<sup>th</sup> STREET BRIDGE PARK:  
A FRAMEWORK FOR CONNECTING COMMUNITIES

# Access, Walkability and Wayfinding

The Experience of Getting to the  
11<sup>th</sup> Street Bridge Park

Virginia Tech Studio Report, May 2013

11<sup>th</sup> STREET BRIDGE PARK:

A FRAMEWORK FOR CONNECTING COMMUNITIES

## ACCESS, WALKABILITY AND WAYFINDING

### The Experience of Getting to the 11<sup>th</sup> Street Bridge Park

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## REPORT OVERVIEW AND ACKNOWLEDGEMENTS

This report represents the work of students enrolled in the Planning Studio of the Masters in Urban and Regional Planning program at Virginia Tech's National Capital Region campus. Working closely with 11<sup>th</sup> Street Bridge Park Project Director, Scott Kratz, students spent the spring semester of 2013 conducting an in depth study designed to inform the process of transforming the obsolete 11<sup>th</sup> Street Bridge into DC's first elevated park.

The studio team produced a set of three independent but related reports:

1) *People, Places and Plans* includes an analysis of demographic characteristics of census tracts adjacent to the proposed 11th Street Bridge Park; an inventory of unstructured spaces, structured active spaces, cultural points and food related spaces in the vicinity; and an assessment of other relevant planning documents and initiatives with overlapping goals.

2) *Access, Walkability and Wayfinding* examines and provides recommendations on issues that relate to the experience of getting to the 11<sup>th</sup> Street Bridge Park.

3) *Elevated Parks on the Rise* presents six detailed case studies of projects with key similarities to and lessons for the 11<sup>th</sup> Street Bridge Park. The analysis looks closely at four main issues: site context; planning process; management, operations and programming; and site design considerations.

The 11th Street Bridge Park studio team would like to thank our studio client, Scott Kratz, for the opportunity to participate in the launch of this exciting project. We would also like to express our appreciation to DC community advocates, personnel from the DC Office of Parks and Recreation, and other city officials, architects and engineers who have provided us with important data and insights. Finally, we would like to thank our studio advisor, Dr. Elizabeth Morton, who guided us through the process and provided invaluable feedback as we worked to deliver this final report.

# ACCESS, WALKABILITY AND WAYFINDING

## INTRODUCTION

This report on Access, Walkability and Wayfinding will examine and provide recommendations on issues that relate to the experience of getting to the 11th Street Bridge Park (Bridge Park). It is not enough to assume that “if you build it they will come,” and it is important for Bridge Park planners to make sure to provide a safe, comfortable and easy access for visitors.

Many factors are relevant when considering access to the Bridge Park. This report will assess the following issues: the various modes visitors will take; the physical characteristics of the gateway entrance corridors; the pedestrian infrastructure to important connections adjacent to the Bridge Park and an overview of wayfinding best practices for the Bridge Park.

Each section will review relevant planning efforts, a brief review of important literature used for analysis and finally recommendations for Bridge Park planners and designers to use as the project moves forward.

## PHYSICAL ACCESS

In order for the 11th Street Bridge Park to succeed in connecting the neighborhoods of Navy Yard/Capitol Hill and Anacostia, future design and planning efforts must improve physical access to the park. For the purposes of this report, we define physical access as the experience of entering the Bridge Park. There are three primary components that shape this experience.

- **GATEWAYS** are the immediate approach path to the Bridge Park.
- **WATERFRONT ACCESS** to the Bridge Park will be from the Anacostia Riverwalk Trail on both sides of the river. Currently, the trails run underneath the 11th Street Bridge and there is no convenient way to get from the waterfront to the Bridge Park above.
- **ENTRY POINTS** to the Bridge Park will be marked by special paving patterns, entry signage and distinct architectural elements like an archway that communicate a sense of arrival.

Visitors will be able to reach the Bridge Park in a number of ways, including walking, cycling, taking the Anacostia Riverwalk Trail, buses, Metrorail and driving. For all of the above modes, the experience of getting to the park should be what Speck calls safe, comfortable and interesting as possible (2012, 4). Unfortunately, the built environment on both sides of the river contains a number of significant and seemingly permanent challenges for those who want to reach the park. However, with these challenges comes the opportunity to truly reconnect people to the waterfront with the 11th Street Bridge Park. Planners and designers must strive to improve the experience of visiting the park for both local residents and those from outside the region. This section will outline these challenges and propose recommendations that designers, planners and stakeholders in the 11th Street Bridge Park project can implement as funding and public support allows.



A number of previous planning and visioning efforts proposed strategies that overlap with the goals of the proposed 11th Street Bridge Park project by highlighting the importance of providing physical access to and across the Anacostia River.

**THE ANACOSTIA WATERFRONT FRAMEWORK PLAN (2003)** advocated a strategy to redefine the river as an amenity and a civic landmark. The DC Office of Planning defined a vision of uniting the city economically, physically and socially and identified five themes of revitalization and associated goals (The Anacostia Waterfront Framework Plan 2003, 21):

1. Environmental Theme: Promote a clean and active river by improving water quality, reducing pollution and enhancing environmental education on the river. Other goals include:
  - Increase all types of maritime activity.
  - Restore riparian function in the watershed.
2. Transportation Theme: Provide continuous pedestrian and bicycle access along the entire waterfront, promote public transit and improve overall walkability. Other goals include:
  - Redesign highways and freeways to become less of a barrier between neighborhoods and waterfront parks.
  - Reconnect the city street grid to waterfront parks.
3. Parks Theme: Create a system of interconnected parks using the Anacostia Riverwalk Trail (ARWT) as a unifying element. Increase recreational opportunities along the waterfront. Other goals include:
  - Enhance underutilized parkland along the river.
4. Cultural Theme: Facilitate sustainable economic development by highlighting the natural and urban heritage of the river. Create public destinations along the waterfront that reinforce existing and emerging cultural institutions. Other goals include:
  - Make the Anacostia a regional destination for special events such as concerts or sporting events.
  - Create distinct park destinations at the neighborhood, regional and national scales.
5. Neighborhood Theme: Reinvest in the housing and communities by increasing mixed-use opportunities along the waterfront, revitalize existing commercial cores and reinforce connections to existing and new public amenities. Other goals include:
  - Provide the capacity and opportunity for 20,000 additional mixed-income households to live in waterfront neighborhoods.
  - Improve services and amenities in existing neighborhoods

The Framework Plan's Transportation Theme, Parks Theme and Cultural Theme identify relevant short- and long-term goals for improving physical access to the Bridge Park. For example, the Framework Plan, along with previous reports, emphasizes the importance of minimizing or eliminating barriers to the waterfront. These goals begin to shape the methodology used to assess the existing opportunities and challenges, both short- and long-term, for getting to the Bridge Park.

**THE ANACOSTIA TRANSIT AREA STRATEGIC INVESTMENT AND DEVELOPMENT PLAN (2004)** expands on the Framework Plan by identifying six core planning guidelines that were derived from market conditions at the time, community objectives and physical feasibility. The DC Office of Planning

produced guidelines that were intended to transform the neighborhood into a “vibrant urban village.” The guidelines overlap significantly with the goals of the Bridge Park (Anacostia Transit Area Strategic Investment and Development Plan 2004, 2).

1. Enhance pedestrian quality and connectivity
2. Build a transit-focused plan
3. Create distinct nodes of activity
4. Improve connectivity throughout the neighborhood
5. Encourage sensitive development
6. Promote sustainable principles

**Figure 2.1** Activity Nodes

Source: Anacostia Transit Area Strategic Investment and Development Plan 2004



The *Transit Area Plan* also proposed the creation of four distinct activity nodes (see Figure 2.1), each with a concentration of mixed-use activities, a distinct identity and unique attractions to serve the needs of the Anacostia neighborhood (Anacostia Transit Area Strategic Investment and Development Plan 2004, 53). The plan designates the intersection of Good Hope Road and Martin Luther King Jr. Avenue SE (MLK) as the center of the Gateway Node, which would include substantial increases in new office space, ground floor retail and public space (Anacostia Transit Area Strategic Investment and Development Plan 2004, 58). A number of guidelines for developing the Gateway Node are relevant to our efforts to improve physical access to the Bridge Park. These guidelines include:

1. Highlight the gateway
  - Include public art and/or communal gathering spaces
2. Increase public safety through observation
  - New buildings should have windows oriented toward the primary pedestrian corridors
3. Improve transit and park access
  - Improve pedestrian access into Anacostia Park along Good Hope Road
  - Improve streetscape and public open space design along the route to Anacostia Park
  - Widen sidewalks and pedestrian amenities
  - Improve lighting, landscaping and public art
  - Provide wayfinding signage

**Table 2.1** *Gateway Node Objectives*

Source: Anacostia Transit Area Strategic Investment and Development Plan 2004

Key Implementation Objectives from Station Area Development Plan	Means
Widen the sidewalks on Good Hope Road, SE between Martin Luther King, Jr. Avenue, SE and Anacostia Park. Landscape the area as a green corridor to the Park and incorporate public art to highlight the presence of the Anacostia Light Rail station.	Incorporate as element of Anacostia Riverwalk and Trail for implementation and/or Partner with WASA to utilize green space as stormwater retention area and/or Incorporate as component of Anacostia LRT demonstration line and/or Implement as PUD amenity of proposed development and/or Partner with Casey Trees Endowment Fund (Community Tree Planting Program).
Improve pedestrian crossings on Martin Luther King, Jr. Avenue, SE particularly during rush hour	Planned as implementation of DDOT short term transportation improvements.
Expand on-street and off-street parking resources in the neighborhood to support local retail	Incorporate shared parking facilities into Government Center and/or Require any private development utilizing public financing to join parking management district
Restore and rehabilitate vacant or dilapidated historic commercial buildings along Martin Luther King, Jr. Avenue, SE	Continue and expand commercial façade improvement program and/or Develop historic façade easement program and/or Utilize reSTORE DC commercial acquisition and development funds to support preservation objectives and/or Require as PUD amenity if properties are included in development plan and/or Facilitate Home Again mixed use pilot in Anacostia for residential-over-retail rehabilitation

**THE GREAT STREETS (2006)** program orients the goals of the Framework Plan and the Anacostia Transit Area Plan around proposed transportation and streetscape improvements that include potential linkages across the river to the Navy Yard (Ricks et al. 2006). The program goals include:

1. Improve the quality of life in neighborhoods along the corridors, including public safety, physical appearance and personal opportunity;

2. Support local demand for goods and services through economic development;
3. Expand mobility choices and improve safety and efficiency of all modes of travel; and
4. Attract private investment through the demonstration of a public commitment to Great Street communities.

#### THE ANACOSTIA WATERFRONT TRANSPORTATION ARCHITECTURE DESIGN GUIDELINES

(2008) go beyond the previous planning efforts by defining the look and feel of the built environment in order to make communities more livable, provide more options to commuters, and to build the foundation for economic growth (Anacostia Waterfront Transportation Architecture Design Guidelines 2008, 1-4). The guidelines, produced by the DC Department of Transportation (DDOT), identified eight key corridors as Special Areas that deserve the focus of any efforts to strengthen the connection to the waterfront, the District and the region (2-3). The following corridors (called Special Areas) were identified in the guidelines and are relevant to the Bridge Park project:

- Special segments
- River crossings
- Waterfront access

The Special Segments defined in the Transportation Design Guidelines should celebrate significant cultural and historic destinations, strengthen the neighborhood's identity and establish a sense of place that leaves a positive impression on visitors and residents alike. Local artists can custom-design elements such as seating, bike racks, street lamps, banners, trash receptacles and public art pieces that would express the spirit and identity of the neighborhood while also attracting broader levels of investment (2-35). MLK from Howard to Good Hope Road and Good Hope Road from Anacostia Drive to Minnesota Avenue are identified as Special Segment corridors in the Transportation Architecture Design guidelines.

An enhanced river crossing between the Navy Yard and the Historic Anacostia neighborhood is at the heart of the 11th Street Bridge Park project and would fulfill the objectives set forth by the guidelines for providing a comfortable crossing for pedestrians and bikers while also creating a strong sense of entry into the District. The guidelines highlight multiple factors that affect the sense of arrival and the quality of character, including the bridge approach, specific entry points and the bridge deck itself. They also call for minimal elevation changes, inviting bridge approaches, roundabouts to resolve conflicts between vehicles and pedestrians and attractive landscaping that incorporates low-impact development (LID), which contributes to District sustainability goals. Incorporating lighting and public art would also enhance the attractiveness of the river crossing to multiple user groups.

Like previous planning efforts, the Transportation Architecture Design Guidelines highlighted the importance of providing waterfront access. Existing connections like the Good Hope Road underpass to Anacostia Park, are unsafe and feel accidental in nature.. The guidelines call for improved walkways, landscaping and lighting fixtures to enhance the pedestrian experience and accessibility. Wayfinding and public art can help create a sense of arrival as well as alerting drivers to the presence of cyclists and pedestrians near the Bridge Park entry.. The document also identifies potential access corridors to the waterfront, including Howard Road, W Street, Good Hope Road, 16<sup>th</sup> Street and Naylor Road.

## METHODOLOGY

The methodology for assessing existing conditions and providing recommendations to enhance physical access to the Bridge Park was developed as a four step process, as shown below:

1. Identify the different ways people approach and enter the Bridge Park.
2. Identify the underlying principles that shape the experience of entering the Bridge Park.
3. Define the study areas on both sides of the Anacostia River that are most crucial to physical access.
4. Develop goals for enhancing physical access.

### 1. HOW PEOPLE ENTER THE 11TH STREET BRIDGE PARK

**PEDESTRIANS** are the key to the success of the 11th Street Bridge Park. If the Bridge Park is easy to walk to, it will become a destination, rather than a thoroughfare for traffic and cyclists. Though the neighborhoods on both sides of the river are low- to medium-density, the Bridge Park will appeal to multiple types of pedestrians.

West of the river, the Capitol Riverfront is becoming more popular with the recent additions of Yards Park, Canal Park, the Washington Nationals baseball stadium and the opening of many apartments and condominiums nearby. Furthermore, 15,000 employees work at the Navy Yard daily and could potentially use the Bridge Park as a lunchtime retreat. Despite the distance, the Bridge Park may also appeal to residents of the lively Capitol Hill neighborhood, north of the East-West Freeway.

East of the river, residents of the Historic Anacostia and Fairlawn neighborhoods as well as people in the MLK commercial corridor are close enough to reach the park on foot. A number of schools, including Anacostia Senior High, Ketchum Elementary, Howard Road Academy, Thurgood Marshall Academy Public Charter School, Septima Clark Public Charter School and Savoy Elementary are adjacent to the MLK and Good Hope corridors and could potentially reach the Bridge Park. At least three recreation centers are within a short distance. The future development of Poplar Point as a mixed-use development could also generate pedestrian activity near the Bridge Park.

**CYCLISTS** are also important for transforming the Bridge Park into a lively destination. As Washington's network of cycling-friendly features and facilities continue to expand, the Bridge Park will be increasingly easy to reach for more distant DC residents. More distant visitors from elsewhere in the city and region may desire to use the Bridge Park as a destination space or as a thoroughfare. However, connecting the proposed 11th Street Bridge Park to the adjacent communities requires an understanding of the travel behaviors, socio-economic, and demographic attributes of the communities on either side.

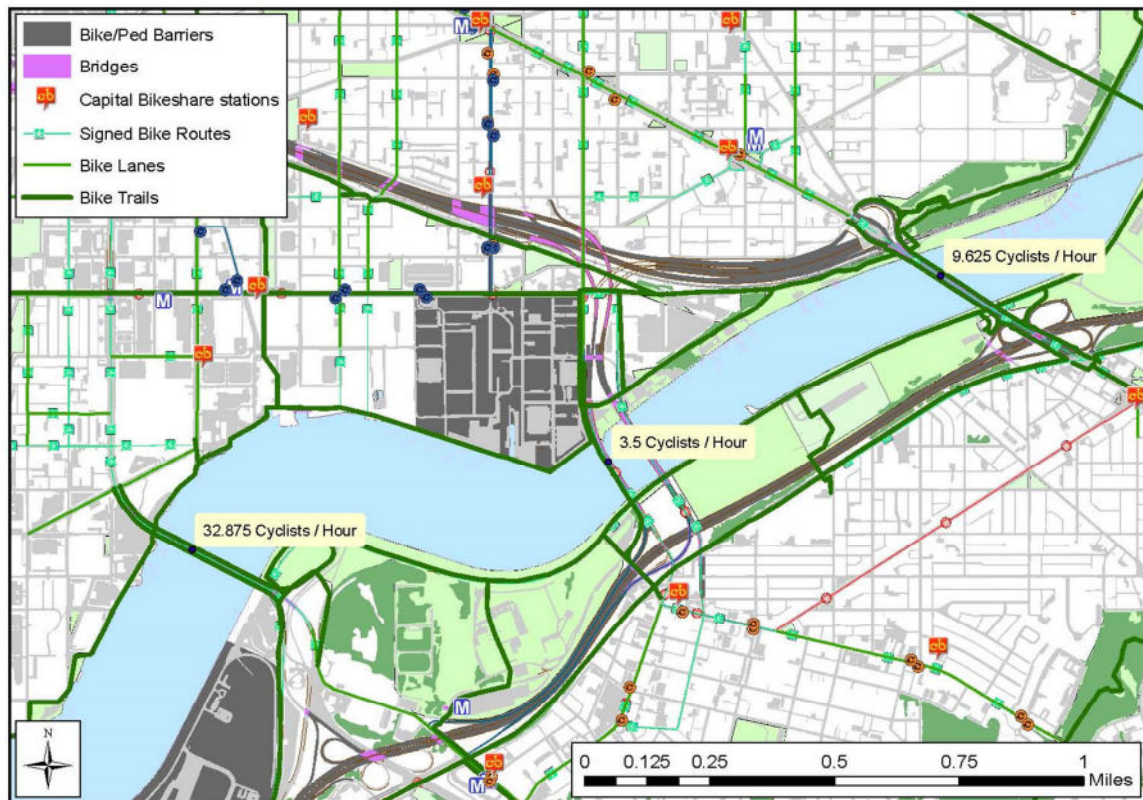
IA study that identified cycling opportunities near the Bridge Park found that the majority of residents in the communities east of the river commuted either by private vehicle (51%) or by public transportation (43%) (Doumi et al. 2013). Active transportation modes were in the minority: only around two percent of residents walked to their jobs and less than one percent commuted by bicycle. In the communities



west of the river, the majority of residents also commuted to work by private automobile (35%) and public transportation (38%). However, commuters in these communities were more likely to utilize active modes of transportation, with 15 percent of residents stating that they walked to work and 4 percent of residents stating that they commuted via bicycle (2013).

**Figure 2.2** *Bicycle Infrastructure Surrounding the 11th Street Bridge Park*

Source: DC GIS (2013)



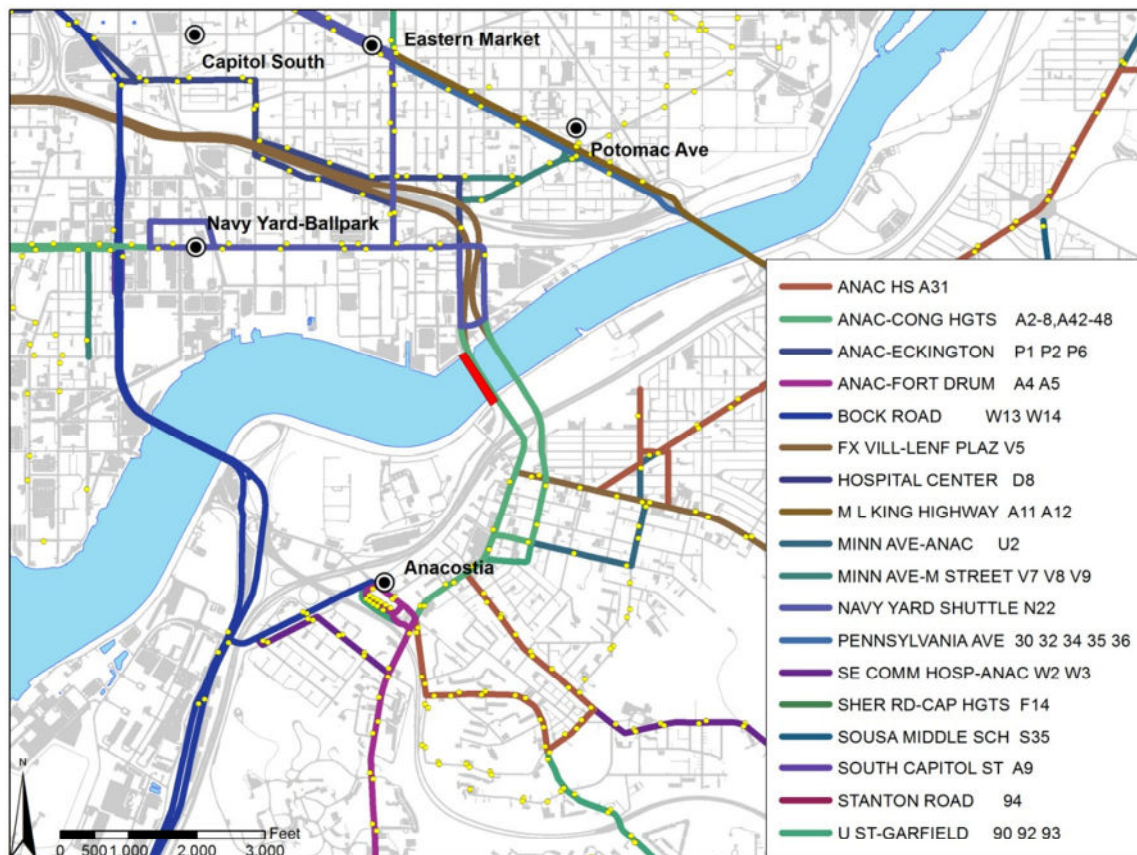
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**TRAIL USERS** enjoy the Anacostia Riverwalk Trail (ARWT), which extends past the 11th Street Bridge on both sides of the river. The ARWT is an alternative mode of active regional transportation and offers almost continuous access along the river, which is a hallmark of a great urban waterfront (The Anacostia Waterfront Framework Plan 2003, 18). Pedestrians and bicyclists can traverse the multi-use trail to reach many amenities, including the National Arboretum, Nationals Park, RFK Stadium, the Historic Anacostia neighborhood, the Fish Market, and recently, the Kenilworth Aquatic Gardens (Anacostia Riverwalk Trail 2012). Once built, the 11th Street Bridge Park will provide a crossing for trail users who wish to gain access to the other side of the river.

**BUS PASSENGERS** can take the 90, 92, V5, or P6 lines across the 11th Street Bridge. The nearest stops from the intersections of Good Hope and MLK on the east side of the river are approximately one third of a mile from the entrance of the Bridge Park. The nearest stops at 11th Street and M on the west side of the river are also one third of a mile from the Bridge Park. Bus lines to the Bridge Park will provide the opportunity for the elderly and persons with disabilities to reach the park safely. DDOT should consider including additional bus stops at the Bridge Park entry points to further encourage easy access.

**Figure 2.3** *Metrobus Routes and Stops*

Source: DC GIS, Eric Childs (2013)

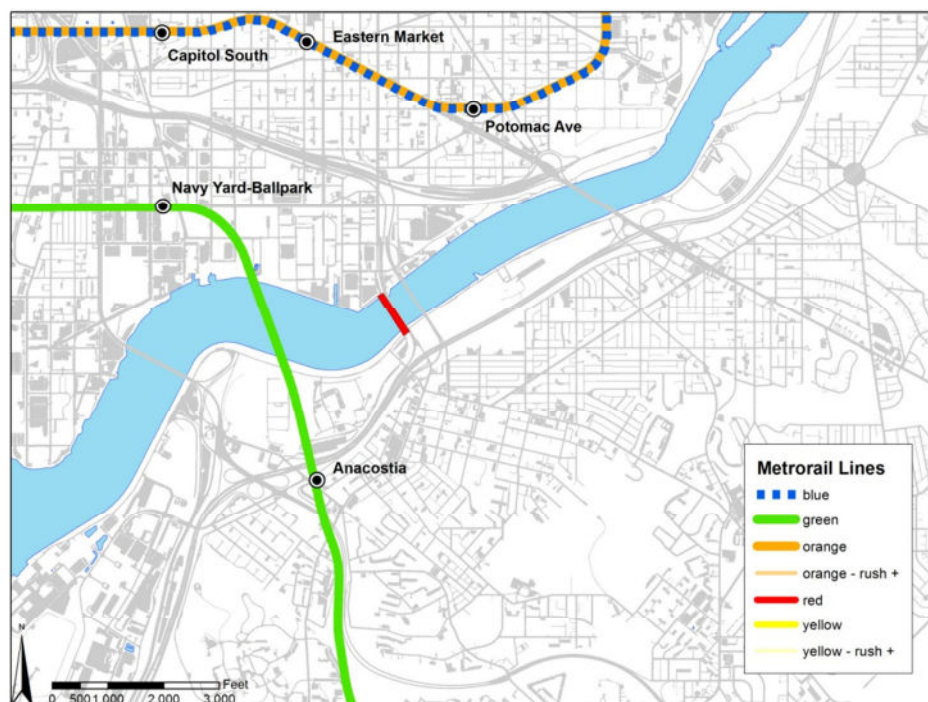


**METRORAIL PASSENGERS:** The Metro is likely to be a major mode of transportation for Bridge Park visitors who do not live in the surrounding neighborhoods. There are four Metrorail stops that are within a little over a mile from the point at which the Bridge Park will connect to either side of the river. These stations will serve visitors from within the city and from the greater Virginia and Maryland suburbs. The only line that does not stop at any of the closest stations is the red line. As Figure 2.4 indicates, there are three stops on the west side of the river and only one stop on the east side. The one-mile radius on the map refers to distances as the crow flies, while the listed distances are actual walking distances on the ground.

After arriving at the Metrorail stations, visitors have several modes of transportation available to them. With the exception of the Potomac Ave. Metro, there are bus lines that directly take visitors to the Bridge Park gateway entrances. Capital Bikeshare is also available at several stops. The majority of visitors arriving via Metrorail will likely complete their trip to the Bridge Park by walking. An assessment of the walking conditions related to the Bridge Park can be found in the Walkability section below.

**Figure 2.4** *Metrorail Lines and Stations*

Source: DC GIS, Eric Childs (2013)

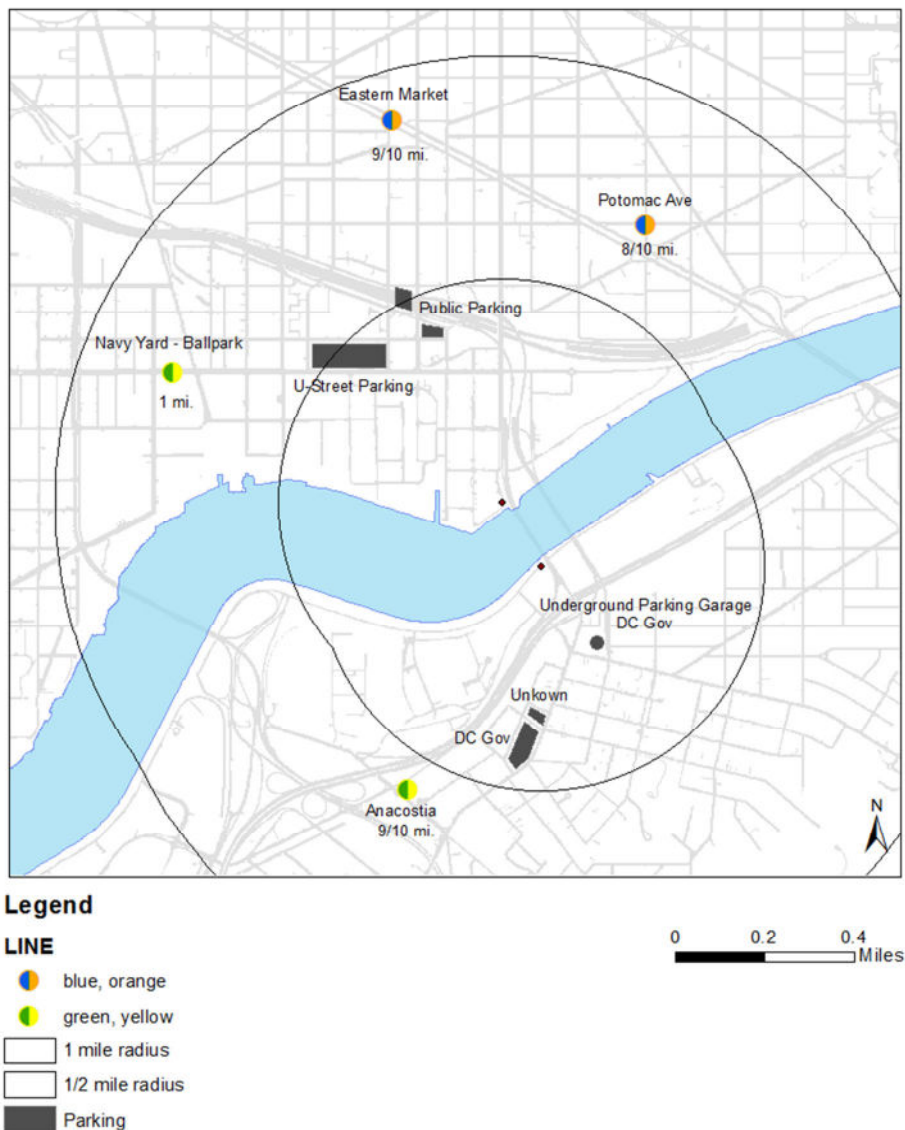


**AUTOMOBILE USERS:** Many Bridge Park visitors will choose to drive to the park and will need to find parking for their vehicle. Currently there are limited parking choices available in the immediate vicinity of the Bridge Park. Metered street parking is available along MLK, and Good Hope Rd. Street parking is also available in the surrounding areas on the both sides of the Bridge Park. As Figure 2.5 indicates, there are parking opportunities on either side of the river for the Bridge Park planners to explore.



**Figure 2.5** *Metrorail Stations & Parking*

Source: DC GIS, Ryan Anderson (2013)



The parking lots shown in Figure 2.5 are within a half-mile of the points at which the Bridge Park connects to either side of the river. The U-Street Parking lot is open M-F 6AM-7PM and is closed on the weekends. The public parking lot beneath the East-West Freeway operates like normal metered parking, while the other lot has unknown hours of operation.

On the east side of the river, the DC Government owns the larger parking lot, which is [for private use and](#) not open to the public. The smaller parking lot across the street from the large DC Government lot belongs to the adjacent office building. Finally there is an underground parking garage located in the DC Government building on the corner of MLK Blvd. and Good Hope Rd, which is open to the public.

The current open public parking lots, while all are in close proximity to the Bridge Park, will not serve the anticipated car capacity alone. Further discussions with the parking lot owners not currently open to the public are recommended.

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## 2. PRINCIPLES OF GOOD PHYSICAL ACCESS

Prior local planning efforts identified goals and guidelines for improving access to the Anacostia Waterfront and overall connectivity, creating a clear sense of place through cultural amenities, and highlighting the importance of gateway elements. From these guidelines, we developed several critical principles of good physical access that have guided our assessment of existing conditions and recommendations for enhancement.

1. The gateways and entry points to the Bridge Park should be **COMFORTABLE, SAFE AND INTERESTING** for all modes of transportation.
2. The approach to the Bridge Park should **CLEARLY DEFINE A SENSE OF ARRIVAL** for visitors.

A **COMFORTABLE** approach and entry to the Bridge Park means different things for visitors arriving by varying modes of transportation. Speck (2012) articulates a number of key characteristics of a comfortable pedestrian environment. First, a comfortable walk means that the street edge is clearly defined, preferably by buildings shaping the street (17). Wide-open spaces, like parking lots or vacant properties, fail to provide a sense of enclosure which pedestrians need to feel comfortable (17). In the case of the Bridge Park, where enclosing buildings are not possible, street trees may be the most effective way of increasing pedestrian comfort. Street trees define the street edge, provide cooler temperatures in warm conditions, absorb airborne pollutants, slow stormwater, and offer some protection from windy conditions (Speck 2012, 17).

For cyclists, we recommend the implementation of a two-way cycle track because it would be physically separated from auto and pedestrian traffic with bollards, raised medians, or pavement that differs from the main roadway in color and/or texture. These elements offer a greater sense of security and safety to cyclists, which will potentially appeal to those who might be uncomfortable with only bike lanes. For both pedestrians and cyclists, a comfortable approach should also consider the elevation profile of gateways and entry points. Wherever possible, gateway ramps and corridors should minimize elevation changes (Anacostia Waterfront Guidelines,, 2-42).

Metrobus and Metrorail passengers become pedestrians or cyclists after leaving their respective stops, so the aforementioned elements should be prioritized.

**SAFETY** is one of the most critical elements for providing good physical access and is important to achieving the goal of establishing a safe place for residents to exercise and play. Pedestrians want to feel protected from auto traffic and from potential criminal activity. The presence of bicycle facilities, continuous on-street parking and street trees provide physical separation between auto traffic and the sidewalk (Speck 2012, 14).

Design strategies that utilize the principles of Crime Prevention Through Environmental Design (CPTED) can also reduce crime and the fear of crime. CPTED approaches rely on the following three natural approaches as the first line of defense against criminal activity (Crowe and Zahm 1994, 22):

1. Natural access control
2. Natural surveillance
3. Territorial behavior

According to Crowe and Zahm, natural access control strategies include shrubs, gates, fences and other physical elements to grant access to only the intended users of a place (1994, 22). Natural surveillance emphasizes the visibility and clear sightlines of spaces, including the entrances and exits. Well-lit areas and landscape design that does not obstruct views are strategies that encourage natural surveillance. Physical design elements can also reinforce the civic character and shared nature of the Bridge Park, which deters criminals from claiming territory. Organized activities can also contribute to the safety of the Bridge Park. Visitors may frequent the Bridge Park more often on the weekends, leaving the area relatively unused during the weekdays or at night. Furthermore, organized evening events such as movie screenings or public performances introduce safe activities and legitimate users at times where the Bridge Park might otherwise feel unsafe (1994, 26).

An **INTERESTING** gateway to the Bridge Park should include a variety of design elements that create visual interest and encourage the presence of human activity (Speck 2012, 18). The domination or repetition of a single architectural feature, such as a blank wall or a parking deck, fails to contribute to an interesting experience and should be avoided. Public art and streetscape design elements like banners on light standards or historic markers can establish an interesting environment.

A **STRONG SENSE OF ARRIVAL** can be created by physical design elements that reflect the unique identity and history of adjacent communities and celebrate cultural and historic destinations (Anacostia Waterfront Guidelines, 2-42). Unique, custom-designed benches, bike racks, temporary banners, trash receptacles, and stand-alone temporary or permanent public art installations signal to visitors that the Bridge Park as a grand civic space and a gateway (Anacostia Waterfront Guidelines, 2-36-37). Physical elements that tie into the unique cultural and historic characteristics of the Navy Yard and Historic Anacostia can also help to reconnect those neighborhoods and generate renewed economic activity.

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### 3. GOALS FOR ENHANCING PHYSICAL ACCESS

1. Enhance the physical access to the Bridge Park for all modes of transportation
2. Define a sense of arrival and a character for the gateways, entry points, and waterfront access areas that reflect the unique cultural identity and history of the surrounding communities.
3. Reconnect the community to the waterfront.

## 1. STUDY AREA

**Figure 2.6** *Physical Access Site Context*

Source: DC GIS Atlas, Eric Childs (2013)



**Figure 2.7** Aerial View of Anacostia – Physical Access Site Context

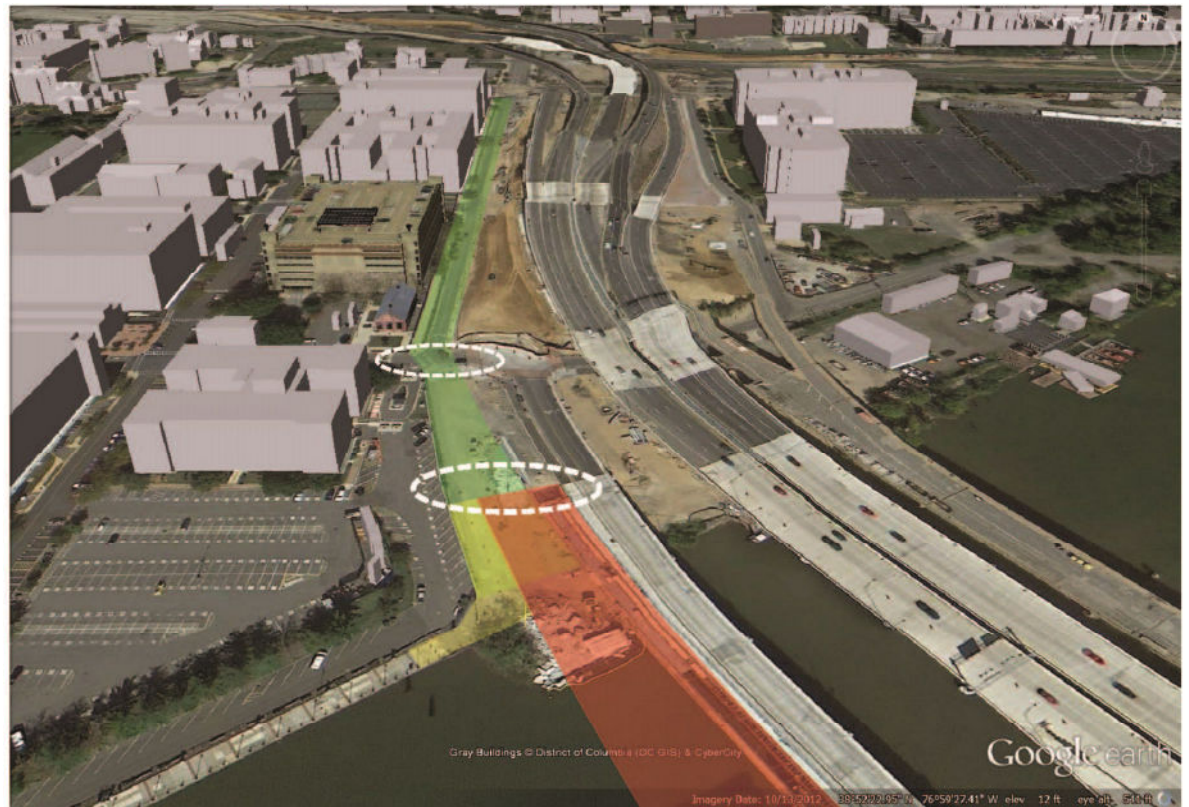
Source: (Community Communications Committee Meeting 14 2013), Eric Childs (2013)





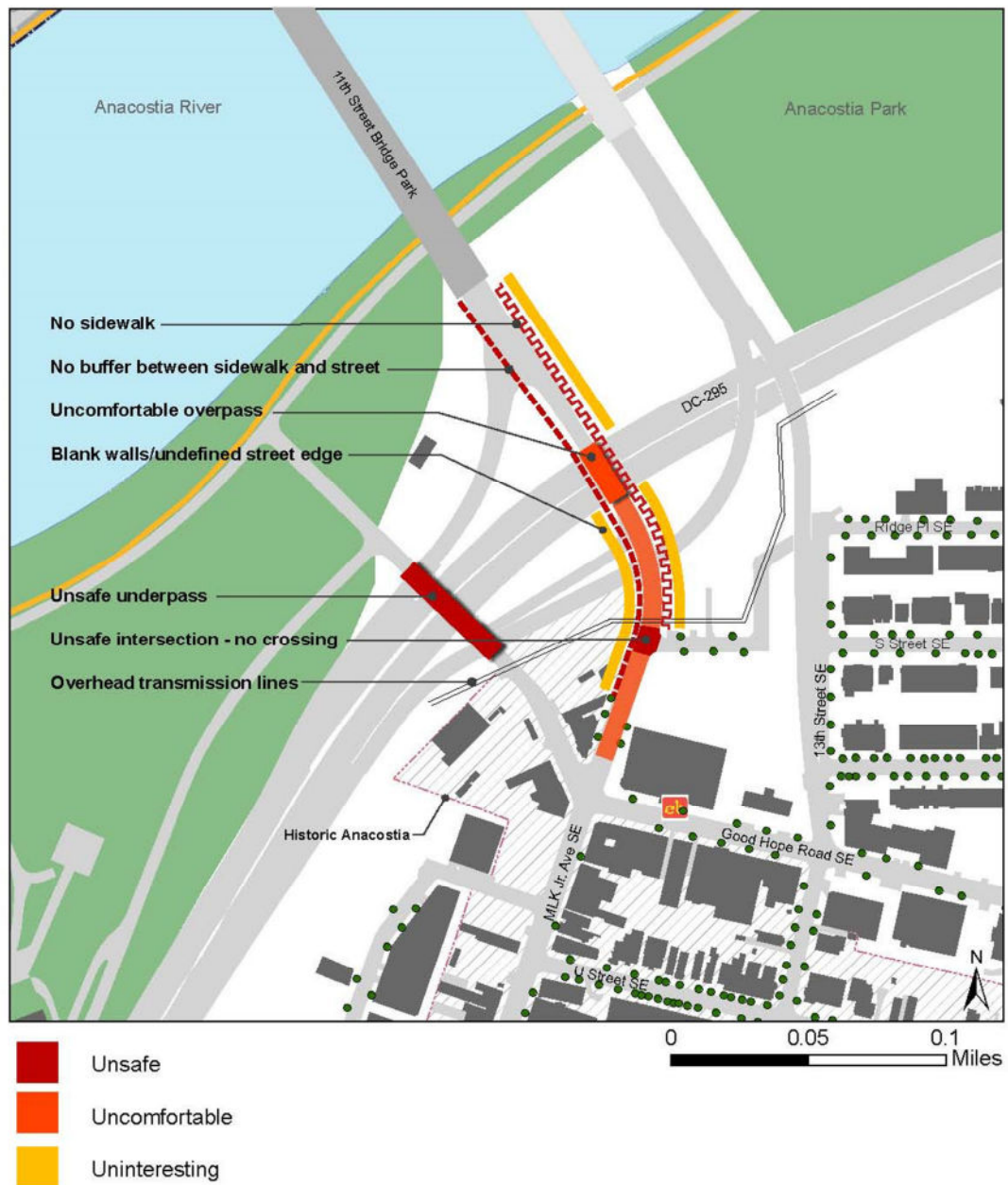
**Figure 2.8** *Aerial View of Navy Yard – Physical Access Site Context*

Source: Google Earth, Eric Childs (2013)



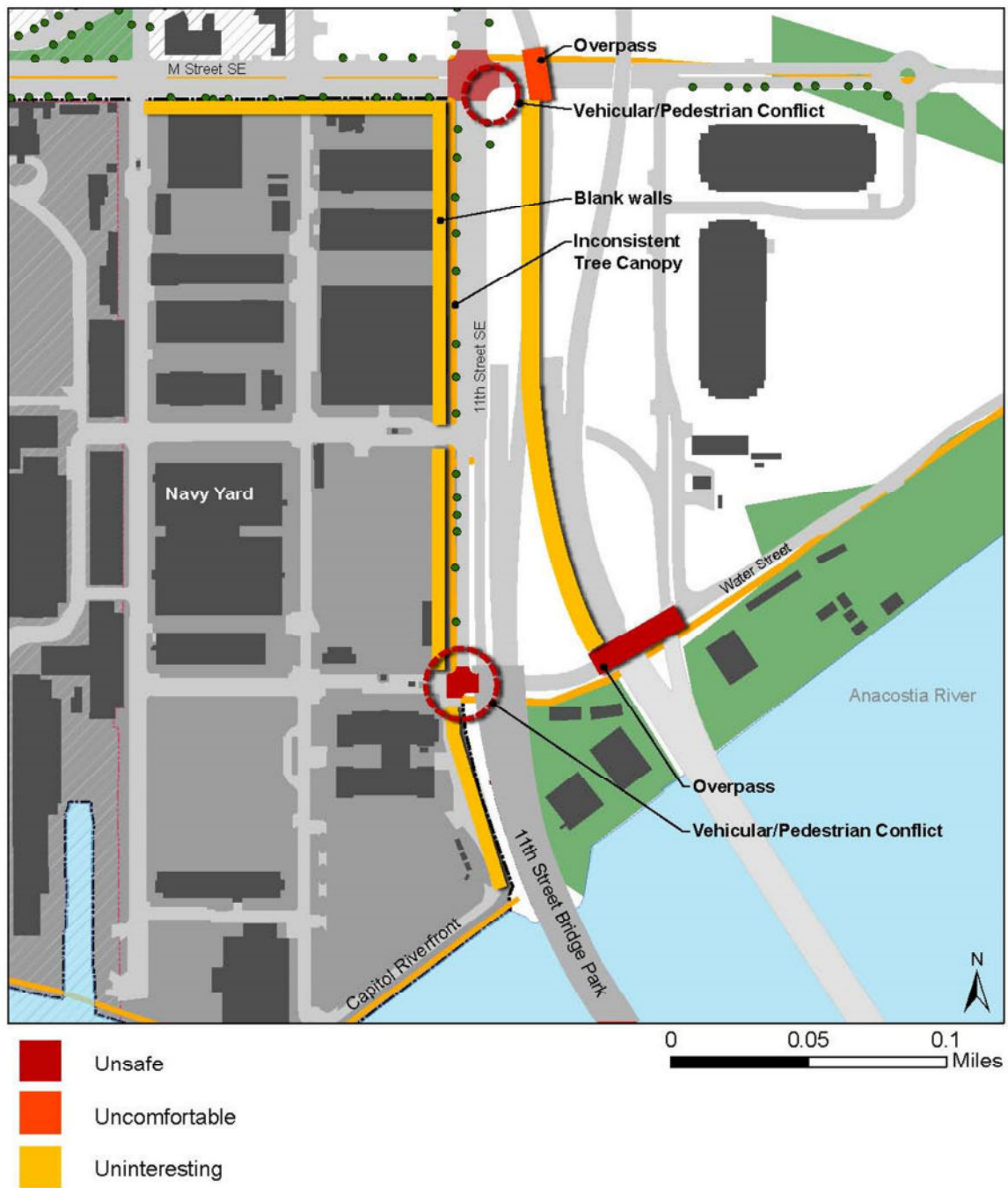
**Figure 2.9** *Challenges at Historic Anacostia*

Source: DC GIS Atlas, Eric Childs (2013)



**Figure 2.10** Challenges at the Navy Yard

Source: DC GIS Atlas, Eric Childs (2013)





## RECOMMENDATIONS

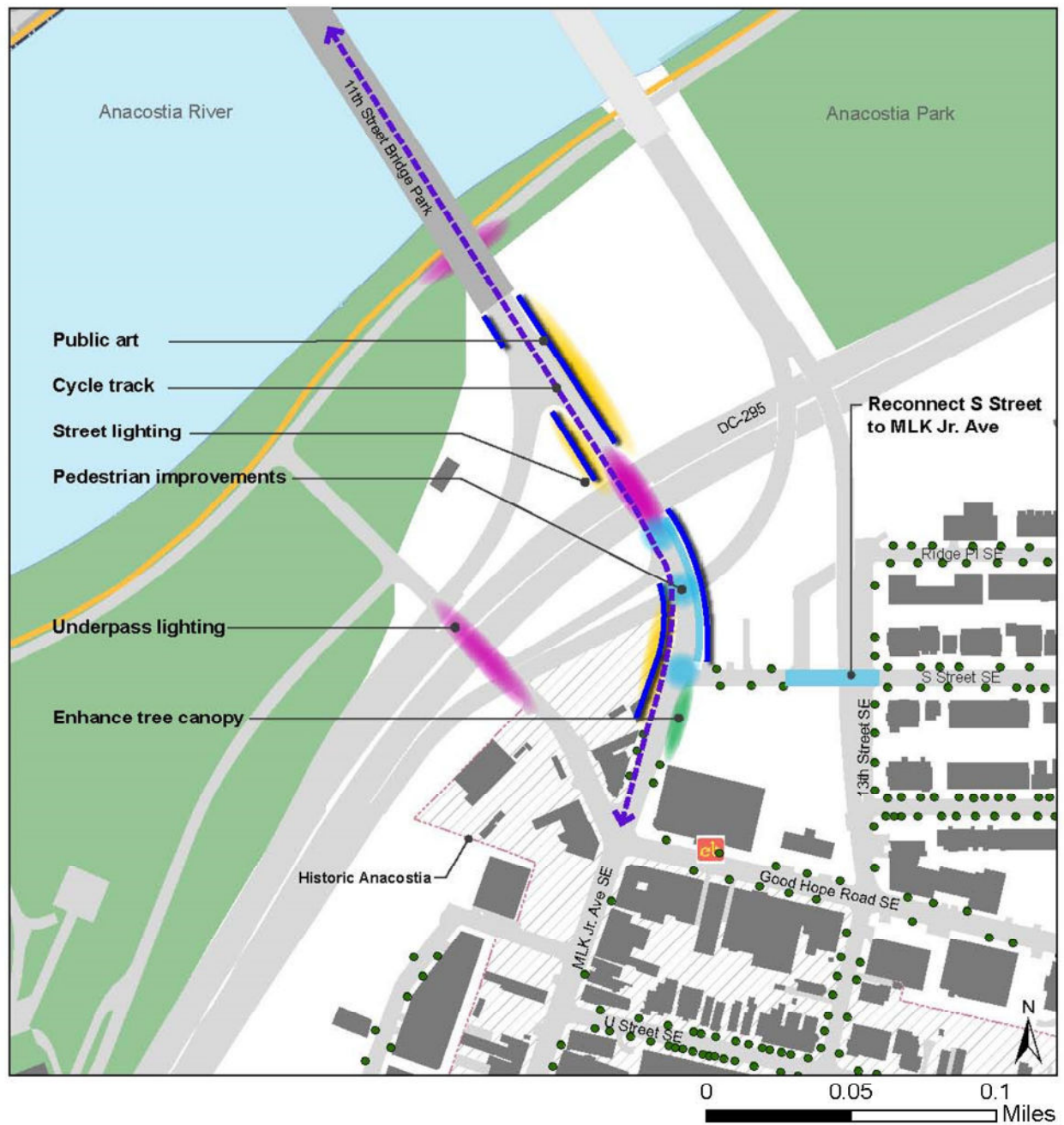
**Table 2.2** *Summary of recommendations for improving physical access*

Source: DC GIS Atlas, Eric Childs (2013)

<b>GATEWAYS</b>	<b>comfort</b>	<b>safety</b>	<b>interest</b>	<b>sense of arrival</b>
Enhance street tree canopy	●	○	○	○
Enhance pedestrian amenities	●	○		○
Pedestrian and bicycle wayfinding elements	○		●	
Traffic calming	●	●		○
Cycle track	●	●		
Low shrubs at the base of the Navy Yard wall		○	●	○
Underpass lighting	○	●	●	○
Attractive light standards		●	○	
Public art	○		●	●
<b>WATERFRONT ACCESS</b>				
Stairs	●	●	○	●
Ramps	●	●	○	●
Elevators	●	●	○	○
Underpass lighting	○	○	●	●
<b>ENTRY POINTS</b>				
Distinctive paving patterns			○	●
Attractive light standards		○	○	○
Public art			●	○
Significant architectural features			●	●
Culturally or historically significant signage			●	○
Bus stops at entry points	●	●		○
strongly contributes to	●			
contributes to	○			

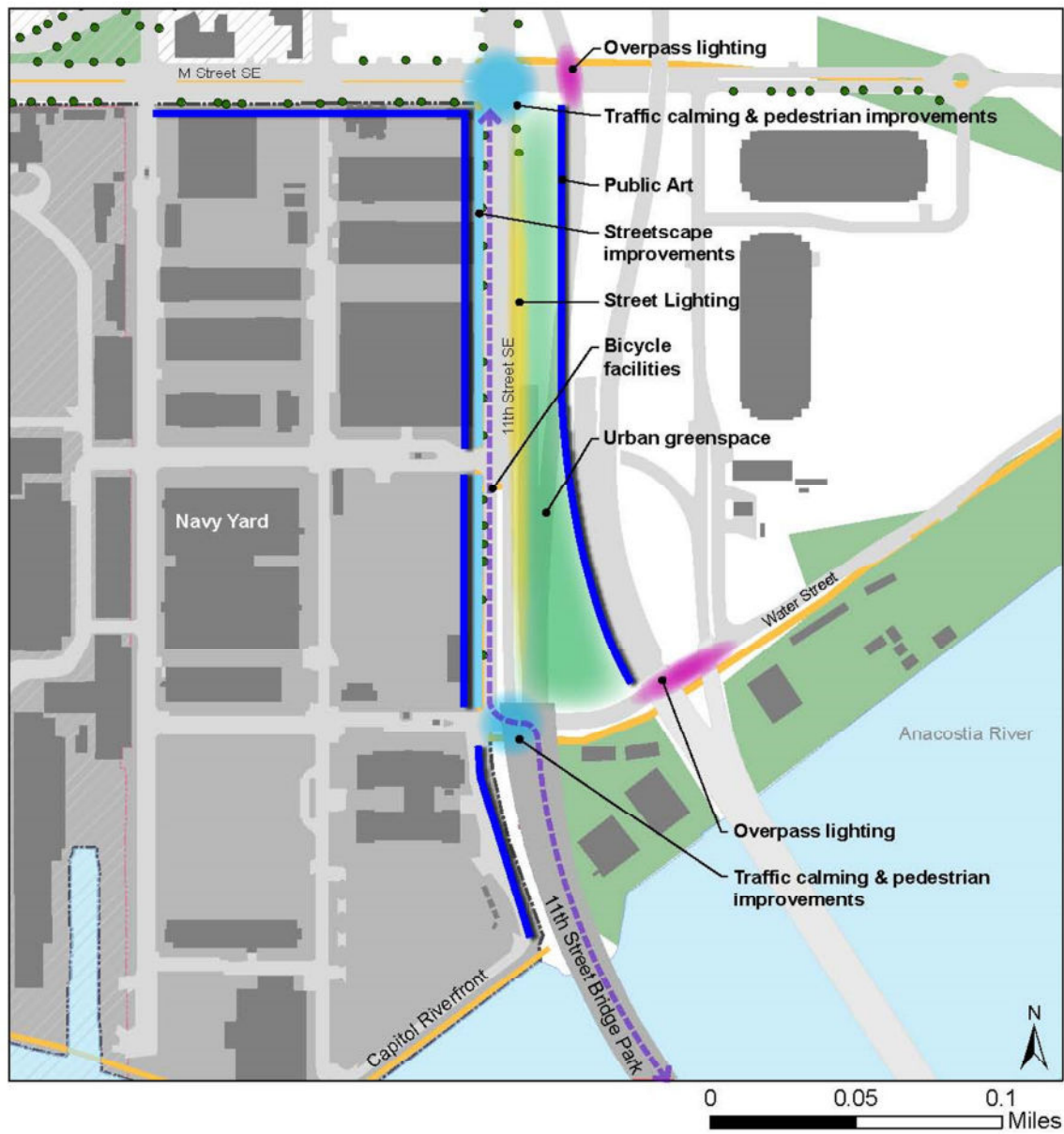
**Figure 2.11** *Opportunities at Anacostia*

Source: DC GIS Atlas, Eric Childs (2013)



**Figure 2.12** *Opportunities at Navy Yard*

Source: DC GIS Atlas, Eric Childs (2013)





**Figure 2.13** Recommendations for Navy Yard Gateway Improvements

Sources: top – Desai, Glenn and Studhalter (2013), bottom - Eric Childs (2013)





**Figure 2.14** *Recommendations for reconnecting S Street*

Source: top - Desai, Glenn and Studhalter (2013), bottom - Eric Childs (2013)



**Table 2.3** *Examples of Bicycle Infrastructure on Bridges*

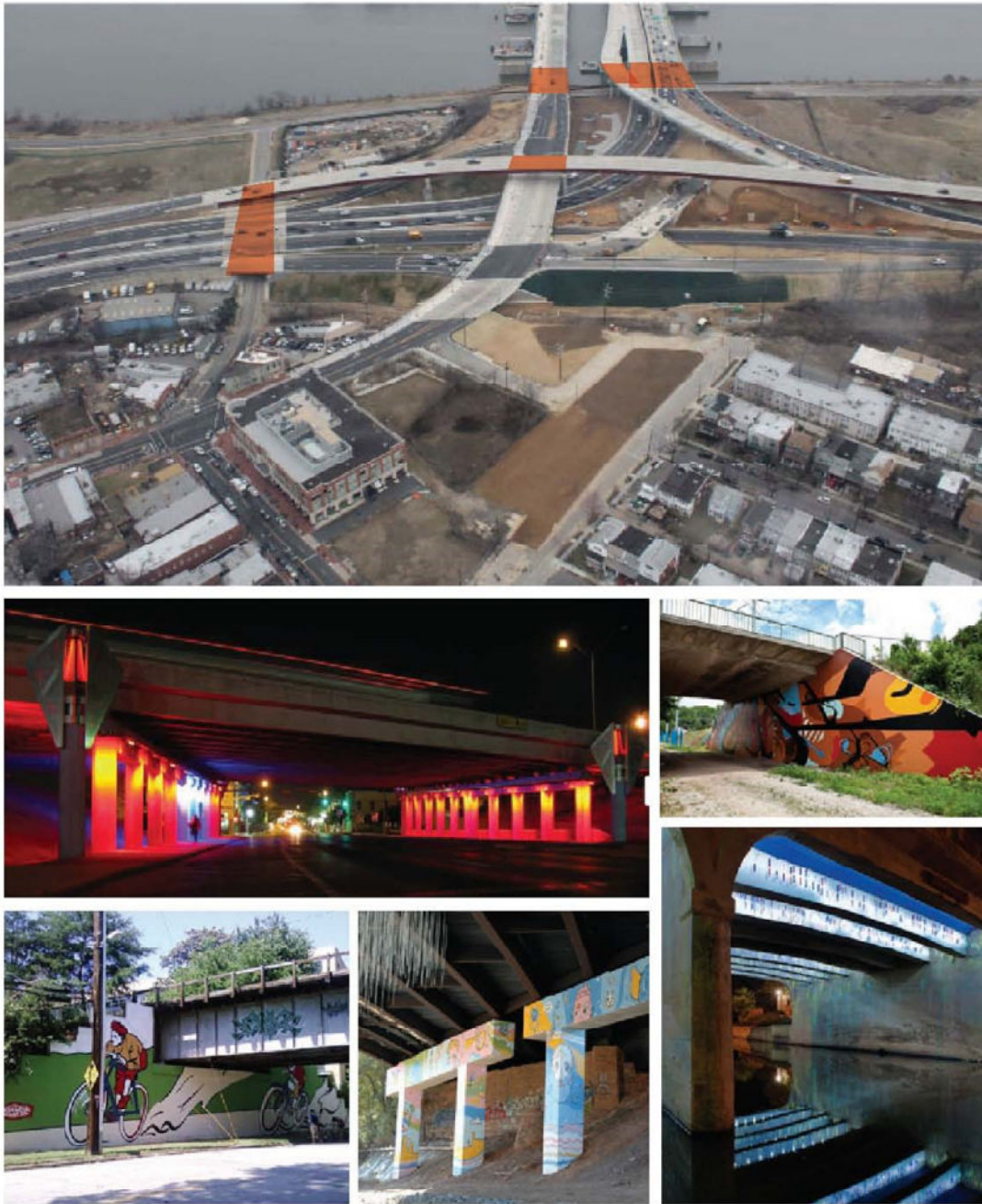
Source: Doumi et al.(2013)

Image	Application	Location	Tracks	Separation
 <p>Source: Bicycle Dutch</p>	Bridge	Budapest, Hungary	None, Sharrows	None
 <p>Source: Bicycle Dutch</p>	Bridge	Danube River in Budapest, Hungary	Two-way raised cycle tracks	Bollards, pavement color, elevation
 <p>Source: Blumel Adams</p>	Bridge	Woodrow Wilson Bridge, Virginia & Maryland	Two-way cycle tracks	Solid barrier
 <p>Source: Jonathon Maus/Bike Portland</p>	Road	Portland, Oregon	Two-way cycle tracks	Raised median
 <p>Source: NACTO Urban Bikeway Design Guide</p>	Road	Montreal, Quebec	Two-way cycle tracks	Pavement color and texture



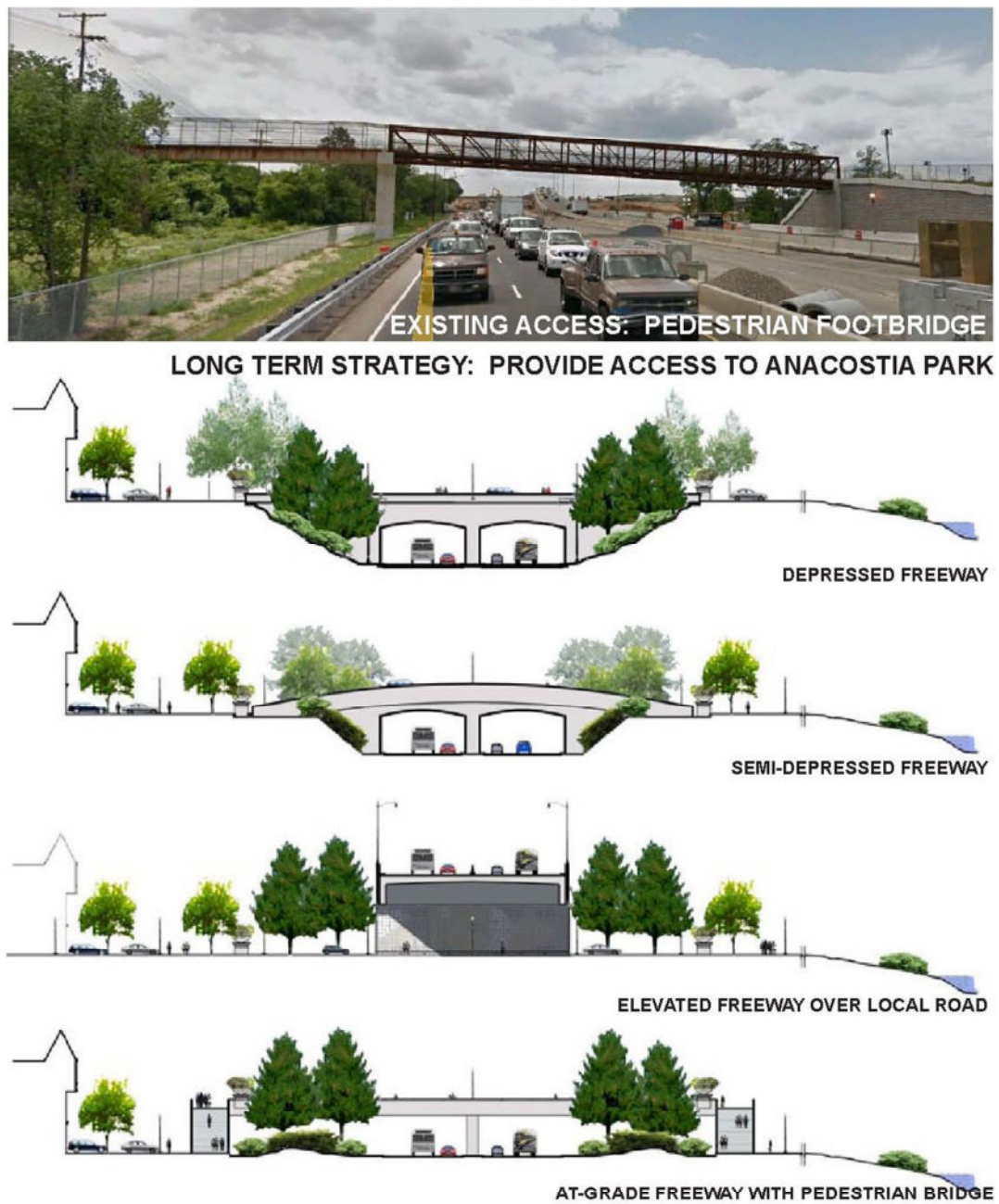
**Figure 2.15** *Enliven gateway underpasses with art and lighting*

Sources (clockwise from top): Community Communications Committee Meeting 14 (2013), HENSE (2013), Richman (2009), Brooks (2012), Loss Prevention Collective (2010)



**Figure 2.16** *Connecting neighborhoods to the waterfront*

Sources: Google Earth Street View (2013), Anacostia Waterfront Transportation Architecture Guidelines (2008)





**Figure 2.17 Streetscape Improvements**

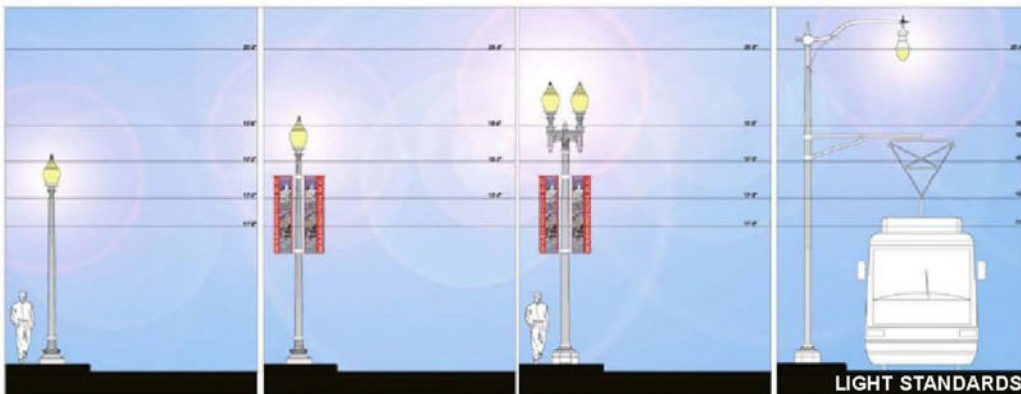
Sources: Street Trees – Childs (2010), all others - Anacostia Waterfront Transportation Architecture Design Guidelines (2008)



**STREET TREES**



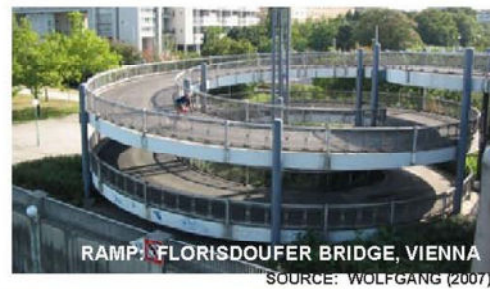
**WIDE SIDEWALK & STREETSCAPE ELEMENTS**



SOURCE: ANACOSTIA WATERFRONT TRANSPORTATION ARCHITECTURE DESIGN GUIDELINES

**Figure 2.18** *Waterfront Access*

Sources (clockwise from top): Wolfgang (2007), Carr (2012), Childs (2009), Childs (2009), Morgan (2009)



## WALKABILITY

The proposed Bridge Park will serve as not only a recreational and public space, but as a connection between two different communities. Planners and those actively engaged in the design and construction of the Bridge Park should work to make accessing the Bridge Park a safe, comfortable and enjoyable experience for local residents and visitors.

Whether a Bridge Park visitor rides the Metro, takes a local bus or drives to reach the park, at some point, the visitor is going to have to walk to reach the entrance. It will therefore be necessary improve the walking conditions in the network of streets adjacent to the Bridge Park. Measures to update the pedestrian experience on the nearby streets can also contribute to the Bridge Park project's goals of improving the health of the local community and in generating economic activity.

Improvements to the pedestrian infrastructure can promote and encourage walking as an active mode of transportation. This is especially important for nearby Bridge Park residents, who use these sidewalks on a daily basis and whose mode of transportation to the Bridge Park would most likely be walking.

On the east side of the river, the creation of a pedestrian-friendly place could help attract Bridge Park visitors to Historic Anacostia, increasing patronage of the current and future businesses in the area. Barracks Row on the west side of the river also contains many retail businesses, and improvements to the Bridge Park's pedestrian connections to that retail corridor could have a similar positive impact.

The goal of this section is to review the current walking conditions, planning efforts related to citywide walkability and efforts specific to the study area, and to provide recommendations based on relevant literature and best practices.

## PLANNING CONTEXT

In 2009, DC created its first ever Pedestrian Master Plan. The goal of the document was to improve walking conditions and to create a city where “roadways equally serve pedestrians, bicyclists, transit users and motorists” (DC 2009, 3). Through a process that assessed pedestrian conditions and received community input, the Plan identified the streets with the most pedestrian activity and the corridors most in need of improvement. From this review the Plan established a priority corridor in each of the eight wards. The priority corridor for Ward 6 is M St. from 6<sup>th</sup> St. SW up to the west entrance to the Navy Yard, located a half a block west of the intersection of 7<sup>th</sup> St. SE and M St.

The Plan outlined many pedestrian improvements on this stretch of M St., which is only four and a half blocks from the west of the river Bridge Park gateway located at 11<sup>th</sup> and M Streets, SE. Many of these recommendations overlap with ones put forward in our report, including: constructing adequate curb ramps, adding striped crosswalk markings and increasing the sidewalk width. Additionally, the Plan included an exhaustive review of all of the current and relevant pedestrian policies. In doing our review, we used the guidelines and recommendations from the Plan when applicable and when they conformed to best practices from the literature.

As mentioned above, The *Great Streets Initiative* is another DC effort that is important for the pedestrian experience on the streets connecting to the Bridge Park. Martin Luther King Jr. Avenue (MLK

Ave.) is the anchor of Historic Anacostia, and this critical street links the Bridge Park to the Anacostia Metro stop and to the local retail and businesses. MLK Ave. from Good Hope Road to Alabama Ave. has been designated by the city as 1 of 11 corridors included in the *Great Street Initiative*.

The program is a multi-agency effort “that strategically uses public investments to improve local quality of life and to attract private investment to the communities” (DDOT 2005, F-2). Key program goals are to improve the quality of life, physical appearance, and safety and to enhance mobility in these corridors. A framework plan was constructed that outlined a vision for the street, and, importantly, physical enhancements and improvements related to walkability. The MLK Ave. corridor also received approval for Tax Increment Financing in 2007 as a part of the *Great Streets* MLK Ave. is also eligible for consideration for the Great Streets Initiative Grant, awarded by the Office of the Deputy Mayor; this grant of up to \$85,000 is available for the purposes of attracting new businesses and helping current ones along the designated corridors (DC 2013).

The *DC Vibrant Retail Streets Toolkit* is a new program that the DC Office of Planning started along with a consultant, Streetsense. The goal of the program is to provide interested parties, residents, non-profits and businesses with the necessary tools to turn their street into a thriving vibrant retail center. This may be a useful tool for Bridge Park planners since the connection between land-use and walkability is very important, and creating a vibrant and lively space increases foot traffic and increases walkability.

## METHODOLOGY

The goal of walkability is to create an enjoyable pedestrian environment and experience. The Federal Highway Administration defines walkable communities as places “where it is easy and safe to walk to goods and services...[and they] encourage pedestrian activity, expand transportation options, and have safe and inviting streets that serve people with different ranges of mobility” (FHWA 2008, iv). Many planners, architects and urbanists have also written about the concept of walkability and its components. These experts agree that improving walkability is critical when trying to improve accessibility and to increase walking as a mode of transportation. While some aspects of walkability vary from study to study, at the core the notion is to create a pedestrian oriented, safe, comfortable and interesting place.

This report draws from various writings about walkability, in order to make assessments and recommendations on how to best improve the pedestrian environment and experience around the proposed 11<sup>th</sup> Street Bridge Park. Ewing’s *Pedestrian and Transit-Friendly Design: A Primer for Smart Growth* (1999) and the DC Pedestrian Master Plan are the primary sources for the individual components of walkability that this report reviews. The recommendations from this assessment are broken down into categories based on the financial and political ease with which these improvements can be made; this “urban triage” implementation strategy was developed by Speck and is outlined in his *Fort Lauderdale Downtown Walkability Analysis* (2013).

Our report will assess the following pedestrian infrastructure characteristics broken, down by their respective recommendation categories of short-term, mid-term, and long-term implementations. The

specific characteristics drawn from the DC Pedestrian Master Plan and Ewing's *Pedestrian and Transit-Friendly Design: A Primer for Smart Growth* were tailored to fit the needs and scope of this project.

Short-term Implementation:

- Curb ramps – Are the curb ramps at street crossing adequate?
- Street lighting – Is the street well lit with pedestrian oriented and decorative lamps?
- Sidewalk conditions – Are the sidewalks smooth and easily walkable?
- Street crossings – Are crosswalks appropriately marked; what steps can be made to make the crossing safer or more convenient?
- Bus shelters – Do the important stops on the street have shelters?

Mid-term Implementation:

- Sidewalk width – Is the sidewalk width appropriate for the amount of pedestrians?
- Buffer – How wide is the buffer separating pedestrians from vehicles?
- Streetscape – Is there a tree canopy, and is the streetscape interesting for pedestrians?

Long-term Implementation:

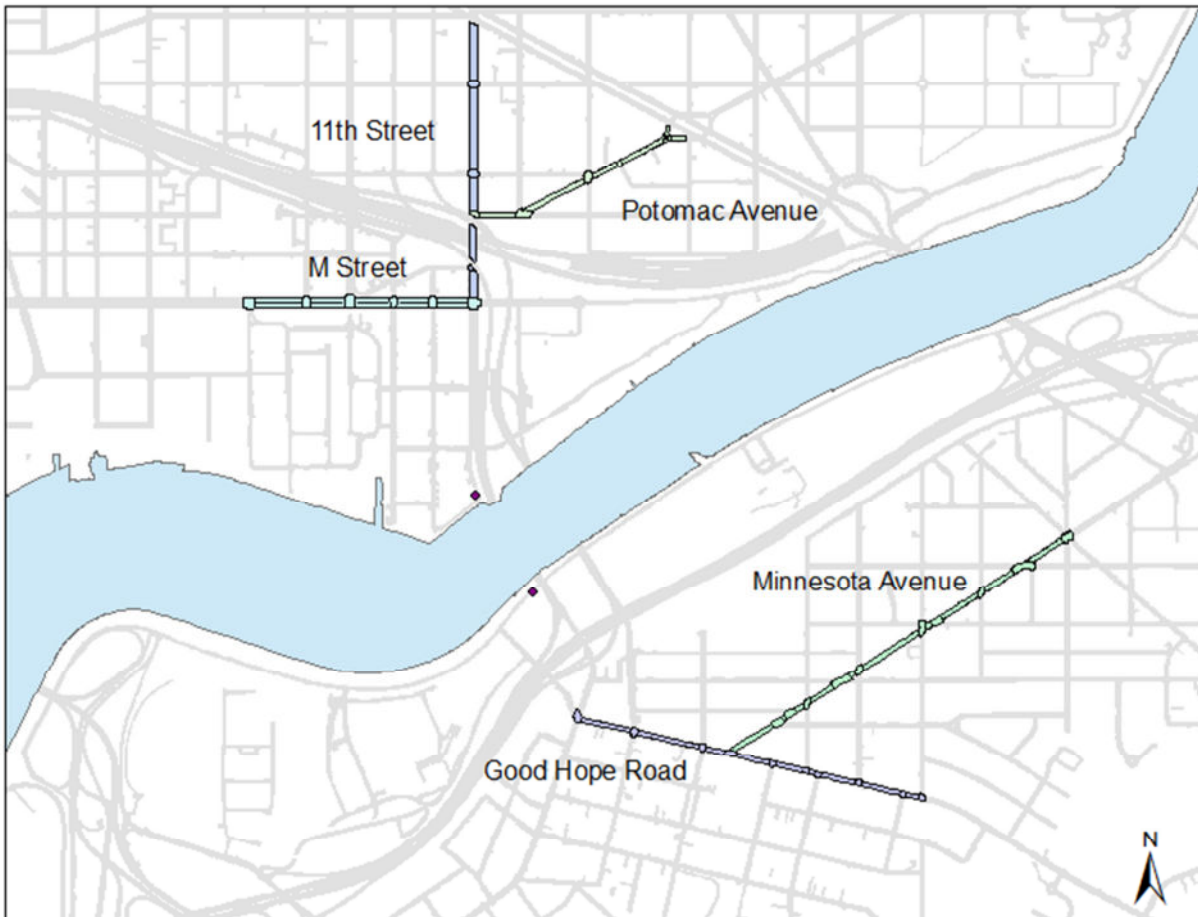
- Land-use – What is the impact of the adjacent land-uses on walkability? Are there other land-uses that can contribute to walkability, i.e. retail, mixed-use?
- Street network – Are the blocks short and grid-like? Can it be improved?
- Public policy – Are there any areas where DC pedestrian policy can improve?

The street corridors reviewed here were selected because of their importance in linking the Bridge Park to the immediate adjacent neighborhoods, to nearby business and retail areas and to the other modes of transportation.



**Figure 2.19** Walkability Study Area

Source: DC GIS Atlas



## Legend

- ◆ Bridge Park Entrances

0 0.175 0.35  
Miles

On the west side of the river, 8<sup>th</sup> St. from the Pennsylvania Ave. and the Eastern Market Metro stop to the intersection of 8<sup>th</sup> St. and M St. was not included in the study since a preliminary assessment found that the pedestrian infrastructure already provided a relatively high quality walking experience. However, 8<sup>th</sup> St. serves as an important connection for the Bridge Park to the Eastern Market Metro stop and to the Eastern Market business and retail area.

On the east side of the river, MLK Ave. from Good Hope Rd. to Howard Ave. and the Anacostia Metro stop was also not included in this study since the *Great Streets Initiative* has already conducted a framework plan for pedestrian improvements.

The following assessment will include a qualitative overview of several study corridors, a discussion of the most critical challenges and issues and a detailed map that identifies the specific improvements that should be made based on the study's methodology.

### WEST OF THE ANACOSTIA RIVER

#### M STREET – FROM WEST NAVY YARD ENTRANCE TO 11TH STREET

M Street on the west side of the Bridge Park connects the Park to transit and the nearby Eastern Market retail area. The street is a major thoroughfare, with six lanes of traffic and high speeds. The road is also currently under construction, and a chunk of sidewalk is missing, as indicated in Figure 2.20.

On the south side of the street the wall of the Navy Yard provides an aesthetically bland visual experience and the situation is exacerbated by the narrow sidewalks that run along it. While the sidewalks on the opposite of the street are also narrow in points, it is the wall of the Navy Yard that is the biggest challenge for improving the pedestrian infrastructure on M St.

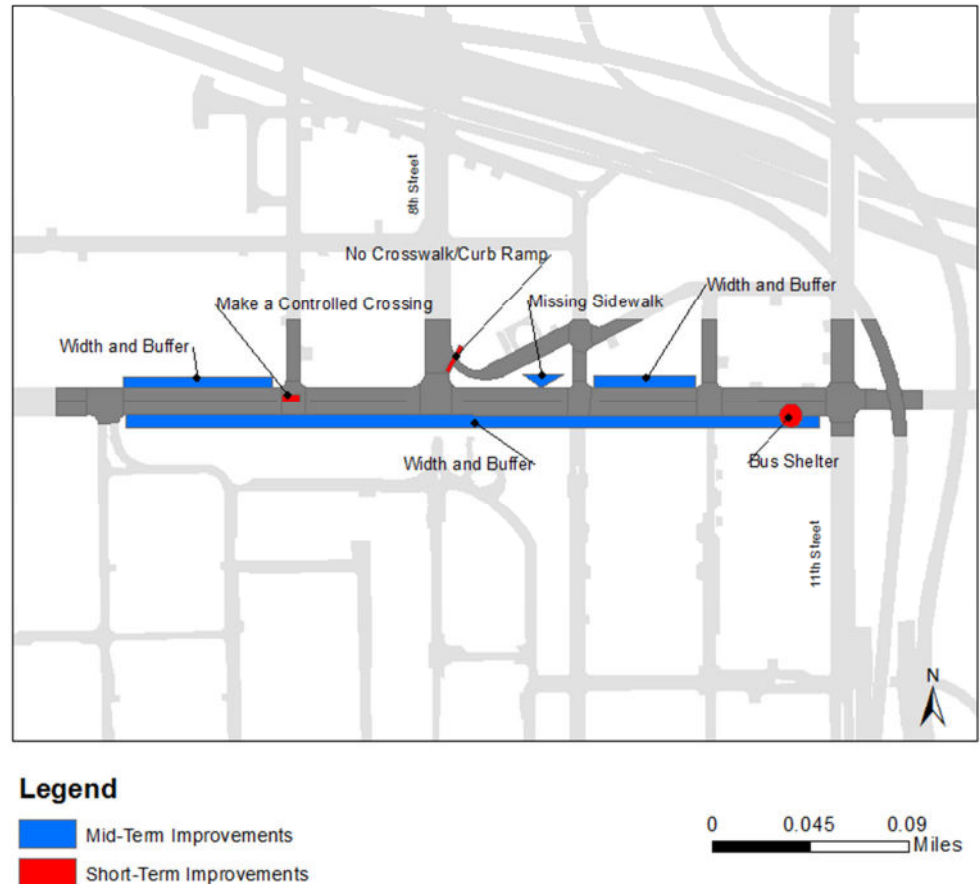


Although there is a very small grass buffer with sparse tree cover next to the narrow sidewalk, Bridge Park planners should take steps to ensure that the sidewalk and buffer are widened. As the report mentioned in the Planning Context section, the DC Pedestrian Master Plan designated M St., adjacent to west end of the study area, as an improvement corridor. Bridge Park planners should coordinate with the city to expand their improvement plan to include this stretch of M St.

Finally, at the corner of M St. and 11th Street there is a vacant lot. This report urges the Bridge Park planners to take a long-term approach to this parcel, and not take the short-term approach of turning this into parking for the Bridge Park. There are several parking options only three blocks away. This parcel would better serve the Bridge Park as an extension of the nearby retail business. A retail land use will attract residents and visitors alike, provide more foot traffic along M St., thus making it safer for pedestrians as a whole. A retail establishment could also provide an attractive and visually appealing land use to a stretch of road that otherwise is aesthetically underwhelming.

**Figure 2.20** *M Street Improvements*

Source: DC GIS Atlas



#### 11TH STREET – FROM M STREET TO PENNSYLVANIA AVENUE

The 11th St. corridor connects the entrance gateway of the Bridge Park to the Eastern Market neighborhood. Local residents will use this route to access the park. On the north end of the corridor at Pennsylvania Avenue, 11th St. is a quiet neighborhood road. The sidewalks are uneven and narrow, but there is a small buffer lined with trees separating pedestrians from vehicles. Additionally 11<sup>th</sup> St. connects with the Cesar Chavez Charter School and John Tyler Elementary School, both of which are one block off on each side of the intersection at 11<sup>th</sup> and G streets.

The biggest issue facing this stretch of sidewalk is the bridge and underpass that connects the north part of the road to the entrance gateway of the Bridge Park at 11<sup>th</sup> and M St. Currently, the road is under some construction due to residual improvements relating to the 11th Street Bridge. The sidewalk on the east side is narrow, with no buffer between the sidewalk and the road, and there is a lot of fast moving vehicular traffic.

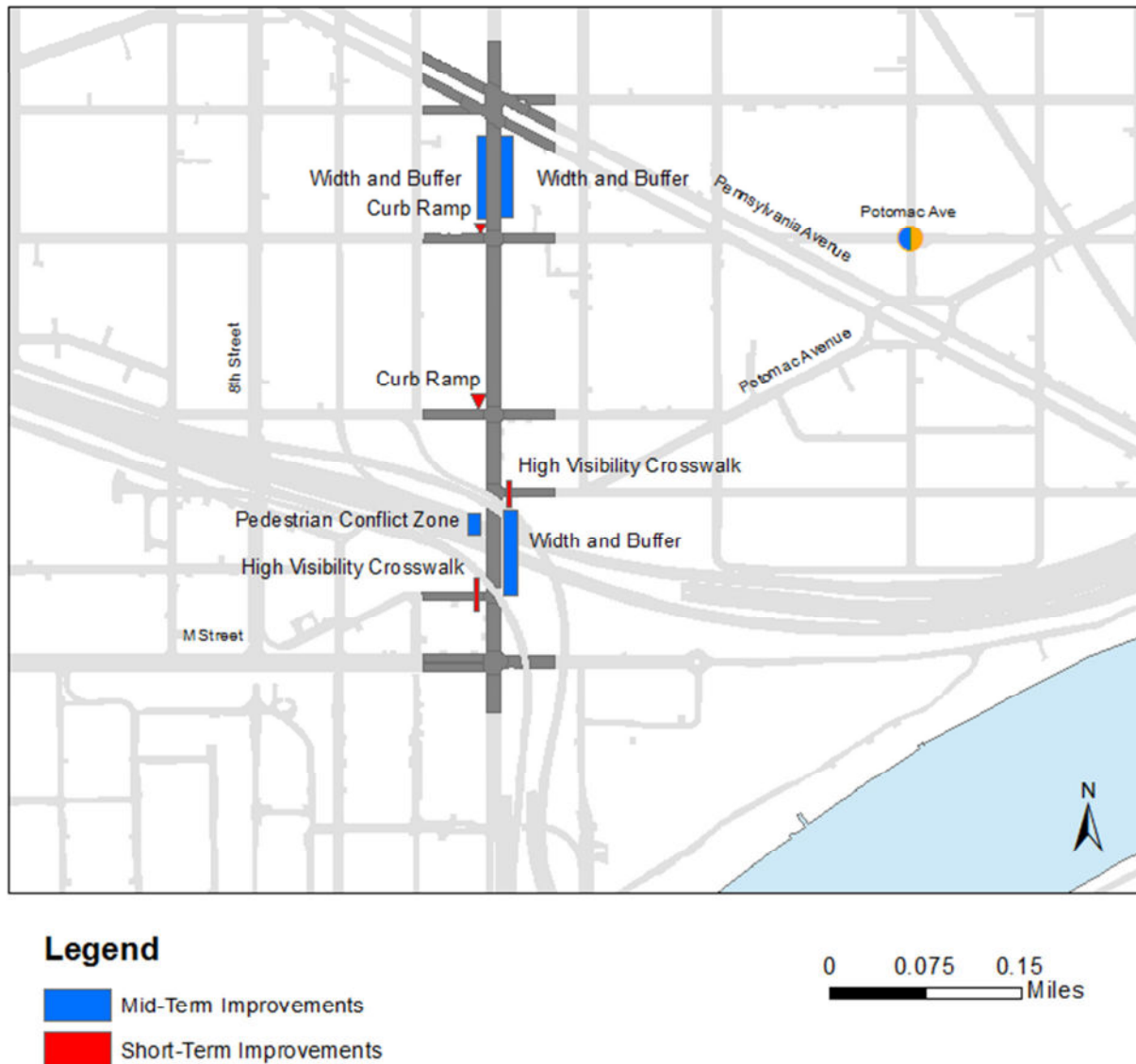
On the west side of this stretch of the street, there is currently a disrupted path for pedestrians while construction carries on. Importantly, there is an on ramp to the expressway that currently, possibly due to the sidewalk interruption, is an uncontrolled crossing with a high potential for pedestrian and vehicle conflict.



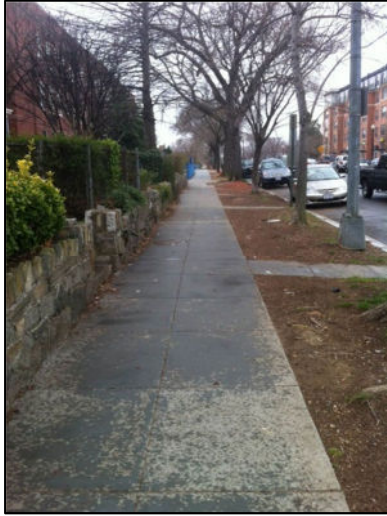
Bridge Park planners and designers should take steps to ameliorate the issue relating to the bridge and underpass area and ensure that the sidewalks are of adequate width and that there is a buffer between the pedestrians and the fast moving vehicles.

**Figure 2.21** 11th St. Improvements

Source: DC GIS Atlas



## POTOMAC AVENUE – FROM PENNSYLVANIA AVENUE TO K STREET TO 11TH STREET



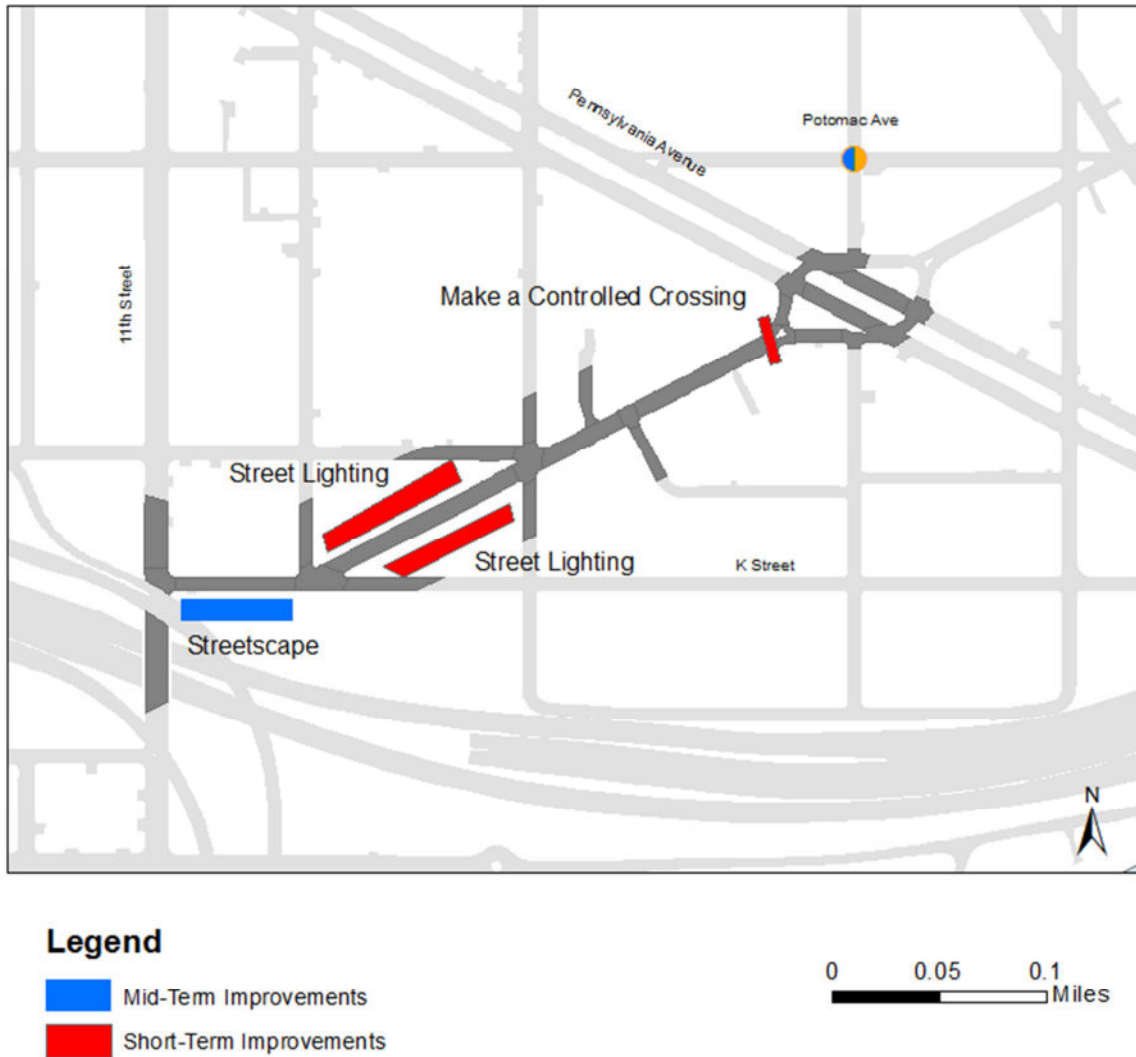
On the northeast part of Potomac Avenue is the closest Metro Station to the Bridge Park, Potomac Avenue Metro. Also located there is a new mixed-use building that has a Harris Teeter, and across the street is Chamberlain Elementary School. These factors make Potomac Avenue an important connection for both local residents and other visitors to the Bridge Park.

Potomac Avenue runs from the Metro station and eventually flows into K St., which one block further connects to 11<sup>th</sup> St. The sidewalks are of adequate width and there is also a small buffer that separates pedestrians from vehicles. Additionally, Potomac Ave. contains several traffic-calming measures that reduce vehicle speeds and maintain the road as a neighborhood street.

The most significant issue for improvement is the uncontrolled pedestrian crossing where Potomac Ave. splits to cross Pennsylvania Ave. In accordance with DC policy, there is a highly visible striped crosswalk and a stop for pedestrians sign; however, the entire Pennsylvania and Potomac Ave. intersection is confusing for pedestrians and carries a high volume of vehicles. Steps to further reduce the conflict between pedestrians and vehicles would aid in improving the walkability of this intersection.

**Figure 2.22** *Potomac Avenue Improvements*

Source: DC GIS Atlas



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### GOOD HOPE ROAD – FROM 18<sup>TH</sup> STREET TO MARTIN LUTHER KING JR. AVENUE

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Good Hope Road is a main arterial road that connects Historic Anacostia and the Bridge Park to the neighborhoods further east. The road is a main access point to the Bridge Park for local residents and other visitors coming from the south.

On the west end of the road, beginning at the intersection of MLK Ave., Good Hope Rd. contains businesses and retail establishments. As the road moves away from MLK and into the neighborhood, the business and retail uses transition to residential buildings all the way to the Anacostia Library. The east side of the road contains a mix of business and residential uses throughout the entire corridor.

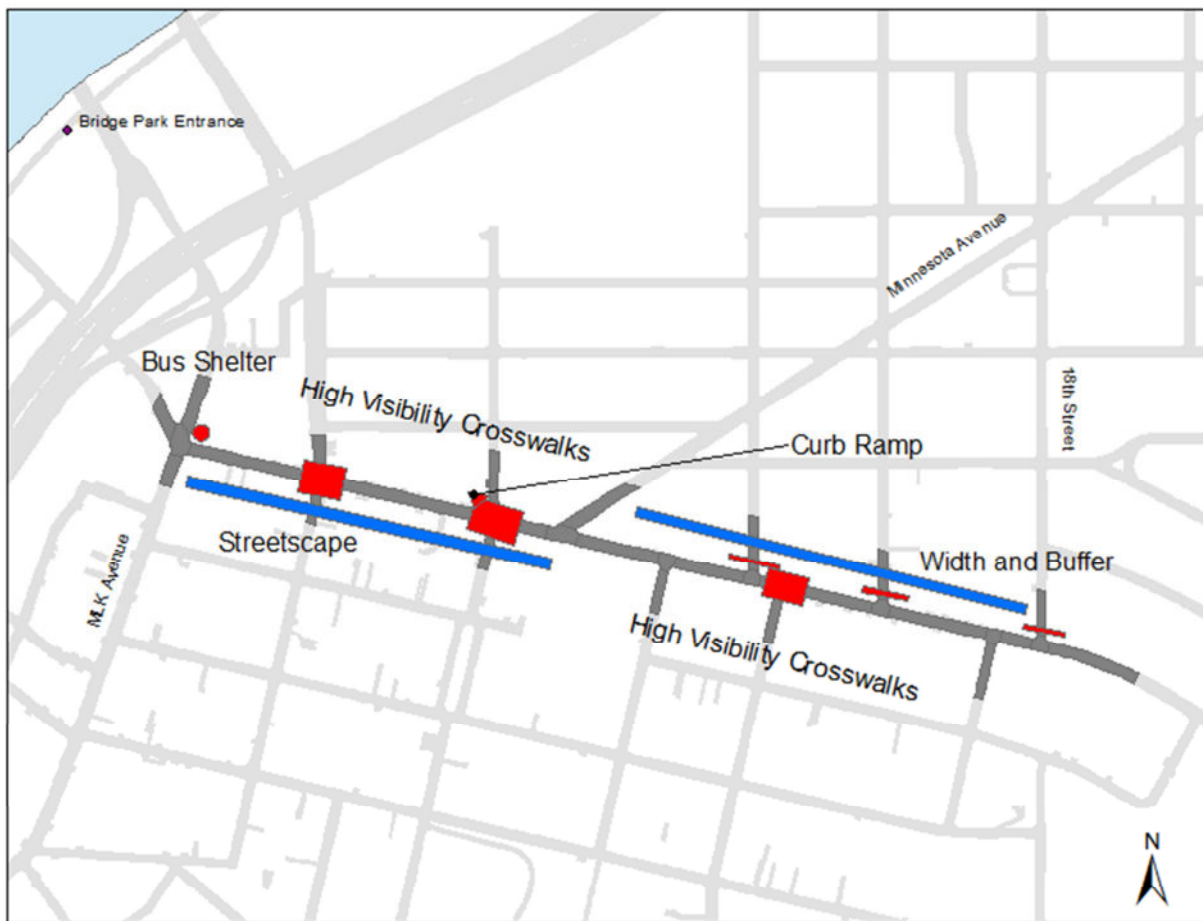
The overall pedestrian infrastructure here is poor. The east sidewalk of Good Hope Rd. is extremely narrow throughout and contains virtually no buffer between pedestrians and vehicles. The west sidewalk is wide between MLK Ave. and the Minnesota Ave. intersection, but it too narrows and contains little to no buffer. Additionally, the street network along Good Hope Rd. is disjointed; as a result there are many uncontrolled crossings that a pedestrian must cross on a high volume road. These uncontrolled crossings make walking along Good Hope Rd. more unsafe than is necessary.

There are many short-term improvements that can, and should, be made to Good Hope Rd., but the focus should be on the medium-term and long-term problems. In particular, the sidewalk width and buffer are the issues most pressing issues.



**Figure 2.23** *Good Hope Road Improvements*

Source: DC GIS Atlas

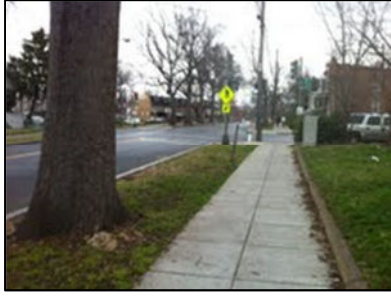


### Legend

- Mid-Term Improvements
- Short-Term Improvements

0 0.075 0.15  
Miles

## MINNESOTA AVENUE – FROM NAYLOR ROAD TO GOOD HOPE ROAD



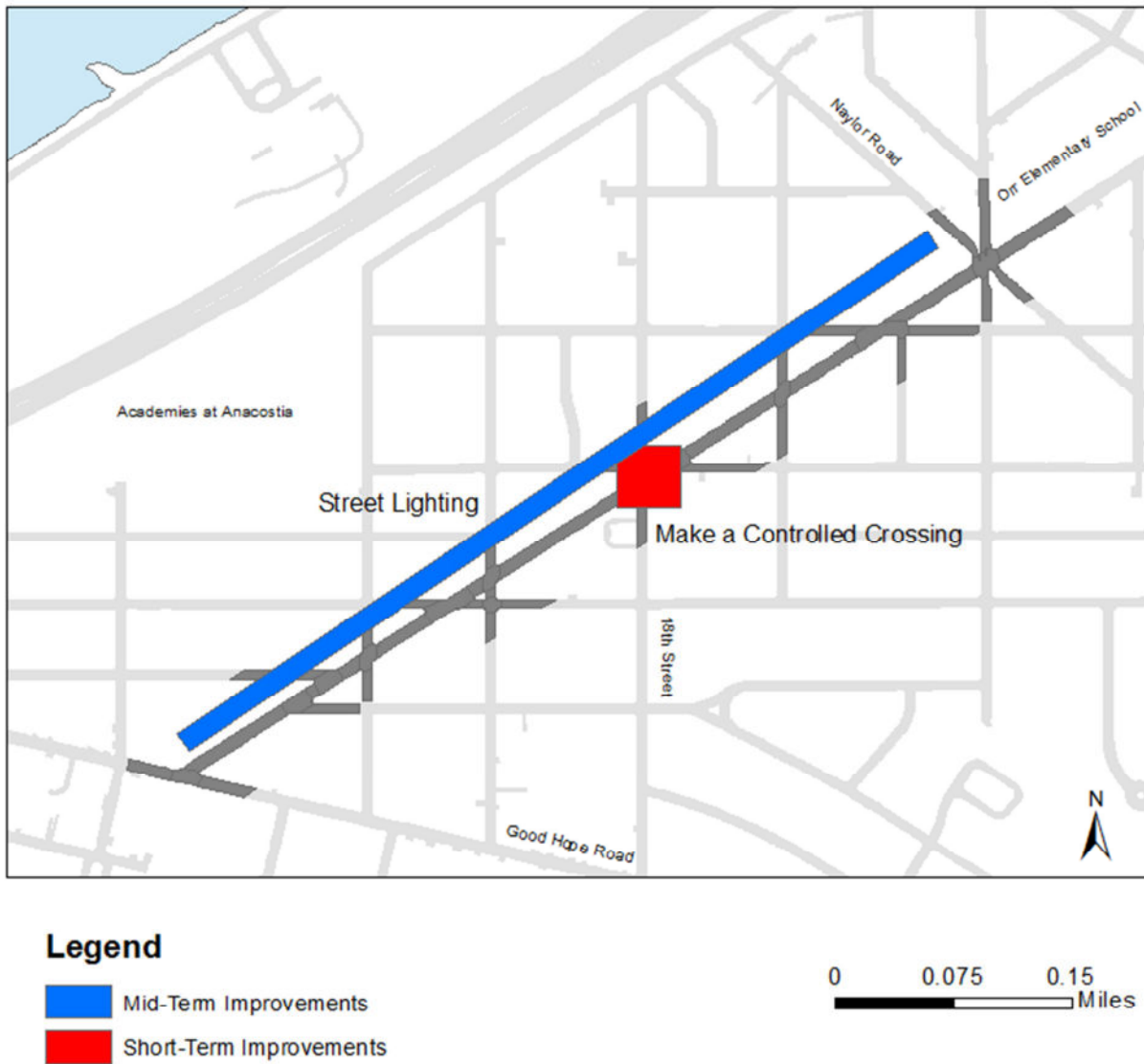
The pedestrian experience on Minnesota Ave. is important to the Bridge Park since it connects many local residents to Good Hope Rd. and ultimately to the Bridge Park itself. Additionally, Minnesota Ave. connects students from Anacostia High School and Orr Elementary School to the Bridge Park.

The land use on both sides of this corridor is almost exclusively single-family residential. As a residential arterial road, Minnesota Avenue contains sidewalks with adequate width and curb ramps at every street crossing. Additionally, there is a small buffer that separates pedestrians from the auto traffic and is lined with trees that provide a nice canopy. Improvements to the street lighting would increase the safety for pedestrians, as well as improve the image of the corridor.

The major issue with Minnesota Ave. is that there are several uncontrolled crossings. Like in the case of Good Hope Rd., the disjointed street network creates intersections in which three or more roads come together. The street network is a long-term improvement issue, but improving the uncontrolled crossings is something that should be done immediately. Every crossing, with the exception of a crossing at the intersection of 18<sup>th</sup> and Minnesota, should include a high visibility paint treatment. Additionally, the 18<sup>th</sup> St. intersection rests at the mid-point between Naylor Rd. and Good Hope Rd, which makes this intersection ideal for a controlled crossing, either stop signs or a street light.

**Figure 2.24** *Minnesota Avenue Improvements*

Source: DC GIS Atlas



## RECOMMENDATIONS

*1. Work with DDOT on the Great Streets Initiative along MLK Ave. and to extend the M St. priority corridor improvements outlined in the DC Pedestrian Master Plan to include the M St. section in this study.*

The M St. priority corridor improvement and the *Great Streets Initiative* are tremendous opportunities to improve the walkability of the surrounding streets. The DC Government has clearly indicated that these corridors need many pedestrian improvements that are congruent with many of the recommendations of this report. Bridge Park planners should work with the DC Government to extend the Ward 6 priority corridor to include M St. all the way to 11<sup>th</sup> St. and the gateway entrance. M St. connects the Bridge Park to the surrounding community and transit options on the west side of the river, and leveraging current planned improvements to include this segment in the study area could dramatically improve walking access to the Bridge Park.

On the east side of the river, MLK Ave. is an even more critical connection between the Bridge Park and local businesses and important transit linkages. Georgia Ave. was the last corridor that the city designated for the Great Streets Initiative Grants in 2010. Bridge Park planners should coordinate with local community groups and non-profit economic development organizations to advocate for a grant for MLK Ave. The funds and assistance by the DC Government could greatly improve this important street to the Bridge Park project and improve its walkability.

*2. The obstacles on the west side of the river –along 11<sup>th</sup> St. and M St. – pose significant walkability issues and must be considered a priority.*

The major issue with both of these street segments is the narrow sidewalks and small or non-existent buffer. These issues make both of these roads uncomfortable and relatively unsafe. Additionally, these streets connect directly to the Bridge Park gateway entrances. Every effort should be made on the part of Bridge Park planners to improve the walking conditions by enlarging the sidewalk and putting in a significant buffer of trees or streetscape elements to separate pedestrians from the vehicular traffic.

*3. The short-term improvements identified in the maps here represent low-hanging fruit and are basic requirements for improving pedestrian conditions along the major access routes to the Bridge Park.*

The “urban triage” approach to making recommendations is intended to highlight those aspects of the pedestrian infrastructure that are both necessary and relatively easy to fix when compared with the other walkability issues discussed. While this report does not include an exhaustive list of all important strategies that are worth implementing, taking the basic steps outlined in the Assessment section will create a great start for improving the pedestrian experience in accessing the Bridge Park.



#### *4. Additional assessments and pedestrian improvements should be considered.*

This report provides an overview of the various planning efforts associated with walkability and the Bridge Park, and provides an assessment of basic improvements that can be made to support pedestrians. Other pedestrian infrastructure treatments, such as bulb-outs, and additional streetscape elements like public art opportunities are beyond the scope of this report. Bridge Park planners and designers should use this report as a starting point to build from.

#### *5. The Bridge Park can be a catalyst for the DC Government to create more pedestrian-oriented policies.*

The 2009 Pedestrian Master Plan did a thorough job of outlining the current policies that address the physical components of walkability. However, the Plan did not discuss the connection between land use and walkability. The Bridge Park project serves as a great example of the impact land use has on the desired quality of the surrounding pedestrian infrastructure. The pedestrian connections to nearby transit and neighborhoods are extremely important for the Bridge Park, but these types of connections are also important for a whole host of land uses. The Bridge Park project should highlight the need for the city to more fully incorporate walkability into its land use decisions and vice versa.

Finally, the Bridge Park project highlights another weakness of current DC policy. Outside of the priority corridors the Plan outlines, the District does not have sufficient programs or policy in place to consistently update the pedestrian infrastructure. The District could require a walkability assessment for major developments, as an example. Resources and cost may prohibit a full citywide improvement plan, but after the city completes the priority corridor improvements, the District should develop a vision for how it will continue to improve the walkability for its residents.

## WAYFINDING

The word “wayfinding” was coined by Kevin Lynch in his seminal 1960 book, *The Image of The City*; here he refers to urban maps, street numbers and route signs as wayfinding devices useful for enhancing humankind’s ability to recognize dissimilar aspects of a city and organize them into coherent patterns (Kamal et al. 2010). Since that time, the word “wayfinding” has retained much of Lynch’s original meaning and generally refers to the process by which people orient themselves to their surroundings and navigate to various points of interest. Wayfinding systems are essential tools that help direct pedestrians, bicyclists, transit users, and motorists to their intended destinations.

Wayfinding objectives may be accomplished by implementing a planned and designed network of signs, maps, mobile media, technology and branded messaging. A wayfinding system may also serve as a form of advertising for a destination, such as the 11th Street Bridge Park, seeking to stand out among a wide range of competing and complementary alternative destinations. It should be noted that urban wayfinding, however, encompasses much more than building attractive signs. Wayfinding systems should be viewed as vessels for incorporating useful, relevant and timely content and analysis of the space or place that the system proposes to direct the user to or through (Badger 2012).

## PLANNING CONTEXT

Support for wayfinding strategies has been written into citywide and regional planning documents. The District of Columbia Bicycle Master Plan (DDOT 2009a) calls for enhancements to the bike route system, including new functional and distinctive signage. The District of Columbia Pedestrian Master Plan (DDOT 2009b) encourages programs that support pedestrians, including the integration of walking information into the city’s tourism website. The Comprehensive Plan of the National Capital (District of Columbia 2006) recommends the use of technologies such as global positional systems, variable message signs, and travel information systems to deliver real time information for highway and transit users. At the regional level, the Bicycle and Pedestrian Plan for the National Capital Region (Metropolitan Washington Council of Governments 2010) argues for unified inter-jurisdictional wayfinding that incorporate easily comprehensible directions and information into the signage.

## METHODOLOGY

The American Planning Association's (APA) publication *Planning and Urban Design Standards* (2006) was consulted to identify key considerations in the planning of an urban wayfinding system. In the manual, a checklist of one dozen tasks is presented as a framework for advancing wayfinding projects through the phases of development from conception to implementation. While each task represents a critical procedural step, the following two elements of the checklist were selected for emphasis in this report due to their importance in the early conceptualization and planning of a wayfinding system.

1. Creation of a mission statement for the wayfinding system.
2. Analysis of urban conditions.

### MISSION STATEMENT

A mission statement that defines the image of the 11th Street Bridge Park should be crafted prior to developing a wayfinding system (American Planning Association 2006). According to the APA, a mission statement should communicate: program goals; the vocabulary that will be used in the wayfinding system, stakeholders; and the process of overall wayfinding system management. It should also conform to the principles of wayfinding systems shown in Table 2.4.

**Table 2.4** *Wayfinding Goals*

Source: American Planning Association (2006)

Wayfinding systems must....
1. be attractive.
2. be oriented to residents and visitors.
3. contain a vocabulary of individual parts each serving a specific role in wayfinding.
4. direct users to smaller destinations.
5. provide directions over small distances at lower speeds.
6. provide directions for drivers, pedestrians, and transit users.
7. compete with street, regulatory, and storefront signs for the attention of motorists, cyclists, and pedestrians.

Business literature was also consulted to discover if the APA's wayfinding mission statement framework could be enhanced by incorporating for-profit business approaches to crafting mission statements.

### URBAN ANALYSIS

A hierarchy of wayfinding (American Planning Association 2006) and geographic information systems (GIS) were used to systematically analyze the urban surroundings of the proposed 11th Street Bridge Park. This analysis informed the wayfinding recommendations contained in this report. The GIS data that were analyzed include: street types, capacity, and rights of way; available and planned modes of public transportation; and bicycle and pedestrian infrastructure. Basic statistical methods were used to analyze traffic volume data and gain insight into possible vehicle wayfinding recommendations.

## ASSESSMENT OF EXISTING CONDITIONS

The District's wayfinding system has been recognized as a successful model, garnering a Merit Award from The Society for Environmental Graphic Design (SEGD) in 2002. According to SEG D (Design Awards 2002), DC's citywide wayfinding system is geared toward tourists who pour into the nation's capital; however, it has also been very popular with local residents and visitors. The website elaborates that:

The system consists of pedestrian-related directional, identification, and map signs, as well as vehicular signs that interface with local roads and highways. The program has been adapted for use on the National Mall and for the DC Heritage Trails walking tours program.

The design blends DC's traditionalist image with a modernist approach. The cast metal star bases brand these signs as "belonging" to DC and the North arrow provides orientation to DC's complex street plan. All sign types utilize the same modular, interchangeable hardware system. The signposts are extruded hollow fiberglass with a cementitious core that allows the posts to flex up to 15 degrees off vertical and then return to vertical.

**Figure 2.25** *Wayfinding Signage Design*

Sources (clockwise order): 1 - [www.sedg.org](http://www.sedg.org), 2 - [www.sedg.org](http://www.sedg.org), 3 - Brooks, Bulka, Rawls (2013), 4 - [www.sedg.org](http://www.sedg.org)





The National Organization of City Transportation Officials describes three different types of bicycle wayfinding signage, each of which is present in the District of Columbia: confirmation signs; directional signs; and decision signs (Bike Route Wayfinding Signage and Markings System 2013). Confirmation signs identify a street as part of the bicycle infrastructure of a city and tell the cyclist that they are on the proper route. Confirmation signs may also be enhanced with destination information. Directional signs are located at points where a cyclist's route may be interrupted. Lastly, decision signs present cyclists with a range of destination alternatives to choose from (NACTO 2013). Often found at the junction of two or more bicycle routes, decision signs may include additional information such as maps and interpretations of the historical significance of an area.

**Figure 2.26** *Wayfinding Signage Types*

Sources (left to right): 1 – MWCOG (2010) 2 - MWCOG (2010), 3 – (DDOTDC [www.thewashcycle.com](http://www.thewashcycle.com))



## GOALS

The primary goal of the wayfinding section is to provide the sponsors, advocates, and organizers of the 11th Street Bridge Park with some preliminary analysis of key considerations in wayfinding planning and development. A series of recommendations is also provided that may shape early discussions concerning the development of a wayfinding system for the 11th Street Bridge Park.

## RECOMMENDATIONS

**RECOMMENDATION 1: CONSIDER INCORPORATING A MISSION STATEMENT MAKING FRAMEWORK FROM THE FOR-PROFIT BUSINESS WORLD INTO THE MISSION STATEMENT MAKING PROCESS FOR THE 11TH STREET BRIDGE PARK.**

Wayfinding systems and signs are an integral part of branding and image building (American Planning Association 2006). It is also widely known that branding and image building are closely associated with business, particularly the areas of marketing and strategic management. For example, Thompson, Thompson and Strickland (1998) state that crafting a strategically revealing mission statement, capable of defining an image requires the careful definition of *what* needs are being satisfied, which user groups

or *who* is being satisfied, and *how* technologies are used to satisfy user needs and perform the functions of wayfinding.

The APA's mission statement making framework adequately prompts planners to consider what needs and whose needs will be satisfied. The importance of considering the question of how technologies will be used is a critical factor that requires articulation. The selection of wayfinding types to be included in a system, wayfinding routes, the preparation of capital budgets, and fundraising, are all impacted by early decisions about how technology, both old and new, will be used.

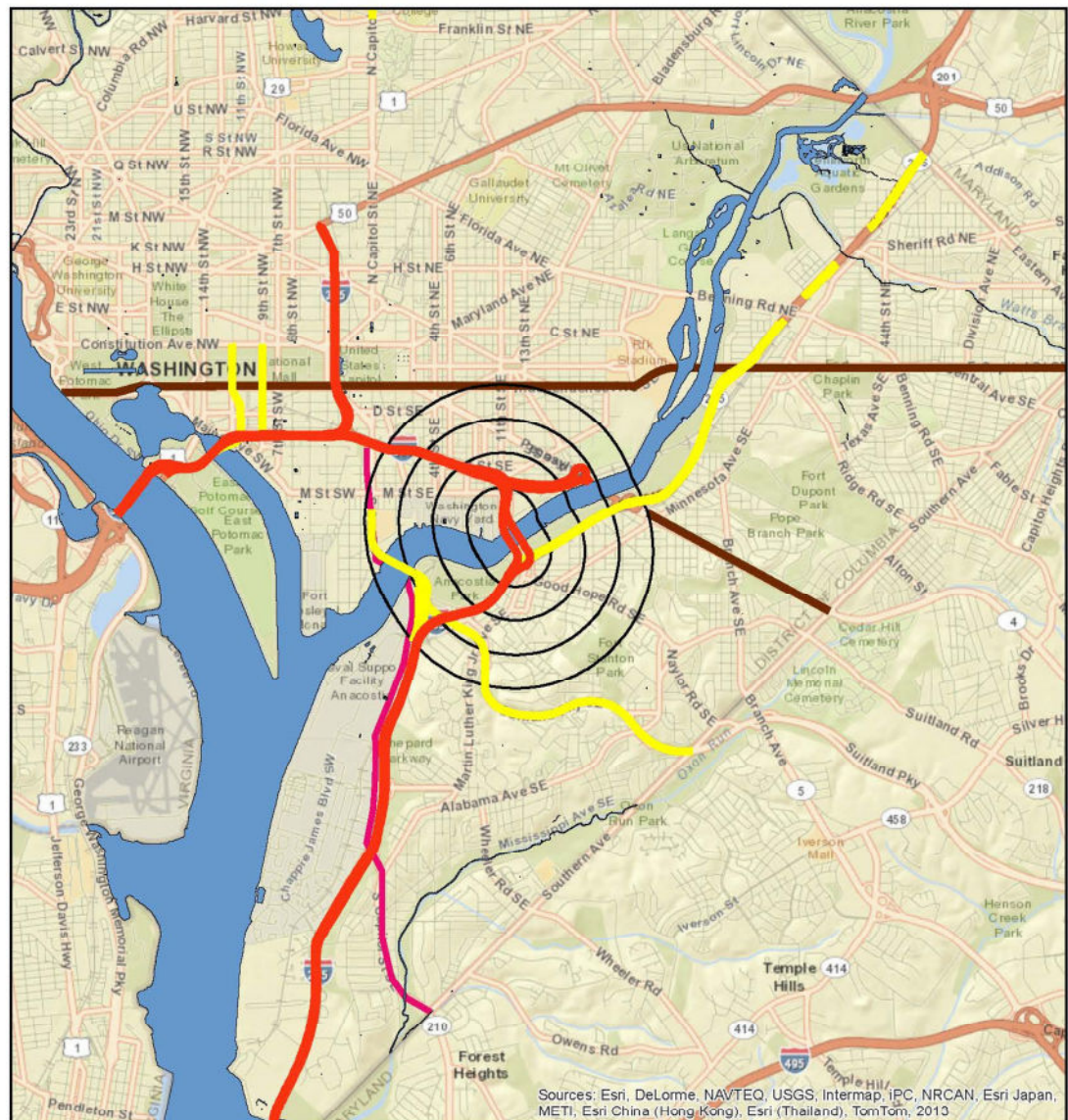
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**RECOMMENDATION 2: INCLUDE PEDESTRIAN, BICYCLE, AND VEHICLE WAYFINDING DEVICES IN THE 11TH STREET BRIDGE PARK WAYFINDING SYSTEM.**

Wayfinding plans should contain multiple layers, with each layer building upon the one before it. A good place to start is at the edge of the city (American Planning Association 2006). Edge of the city wayfinding elements typically direct residents and visitors from the city limits to large districts. We associated the edge of the city -level of wayfinding with vehicular and bicycle transportation modes due to the longer distances that must be traversed from the city edge to the one-mile radius of the bridge park. The one-mile radius of the site of the proposed 11th Street Bridge Park was judged to be a reasonable walking distance and, therefore, became the focus of pedestrian wayfinding analysis in addition to vehicular and bicycle wayfinding where appropriate. Roads that extend from the edge of the city (city limits) to the one-mile radius surrounding the site of the proposed bridge park were selected for further analysis as candidates for vehicle and bicycle wayfinding (see Figure 2.27).

**Figure 2.27** Wayfinding Hierarchy: Edge of City

Source: DC GIS Atlas



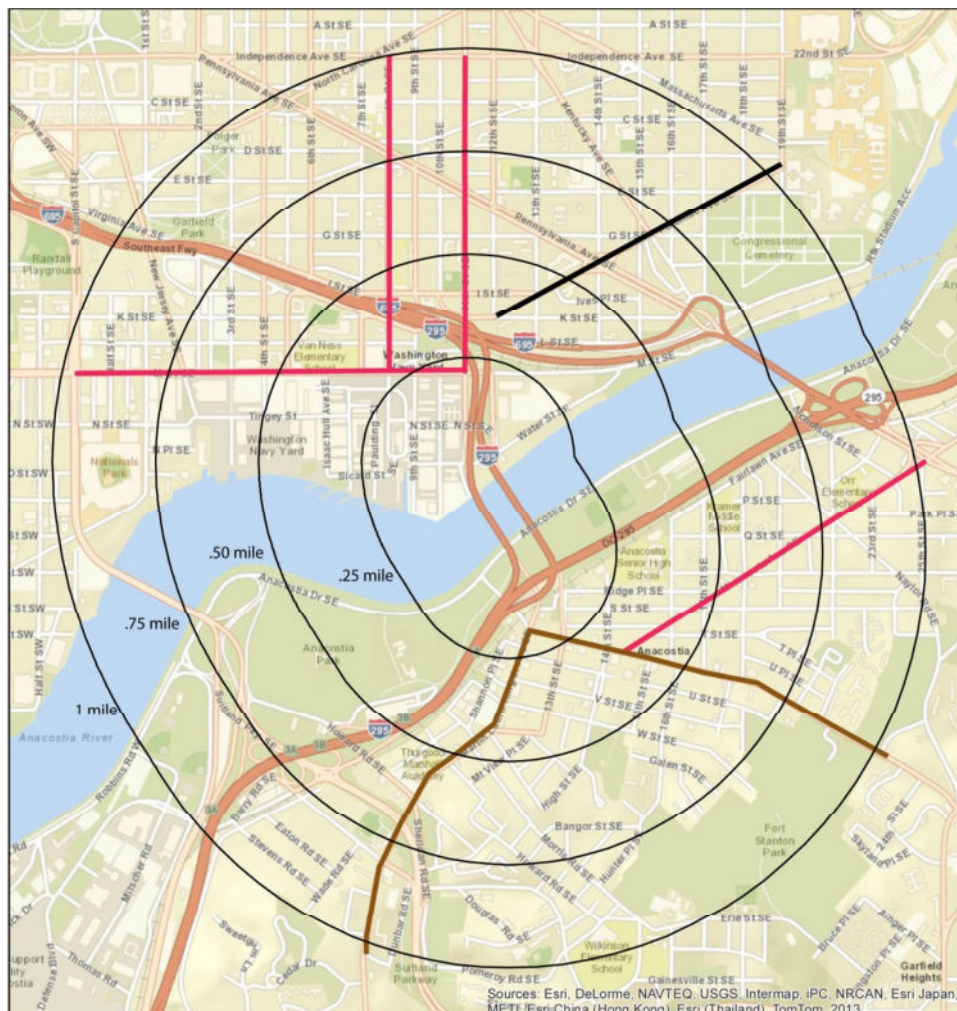
A second level of wayfinding hierarchy begins at the edge of large districts within the city (American Planning Association 2006). For our analysis, we designated the one-mile radius around the 11th Street Bridge Park as the edge of district point of demarcation. At the edge of this district, wayfinding devices direct residents and visitors onto the major boulevards by which they might safely and efficiently move toward the 11th Street Bridge Park. Principal and minor arterial roads and collector roads that extend from the one-mile radius and deliver vehicles, bicycles, or pedestrians to within one-half mile of the site






of the bridge park were selected for further analysis as candidates for vehicle, bicycle, or pedestrian wayfinding (See Figure 2.28).

**Figure 2.28** Wayfinding Hierarchy: Edge of District

Source: DC GIS Atlas



### Legend

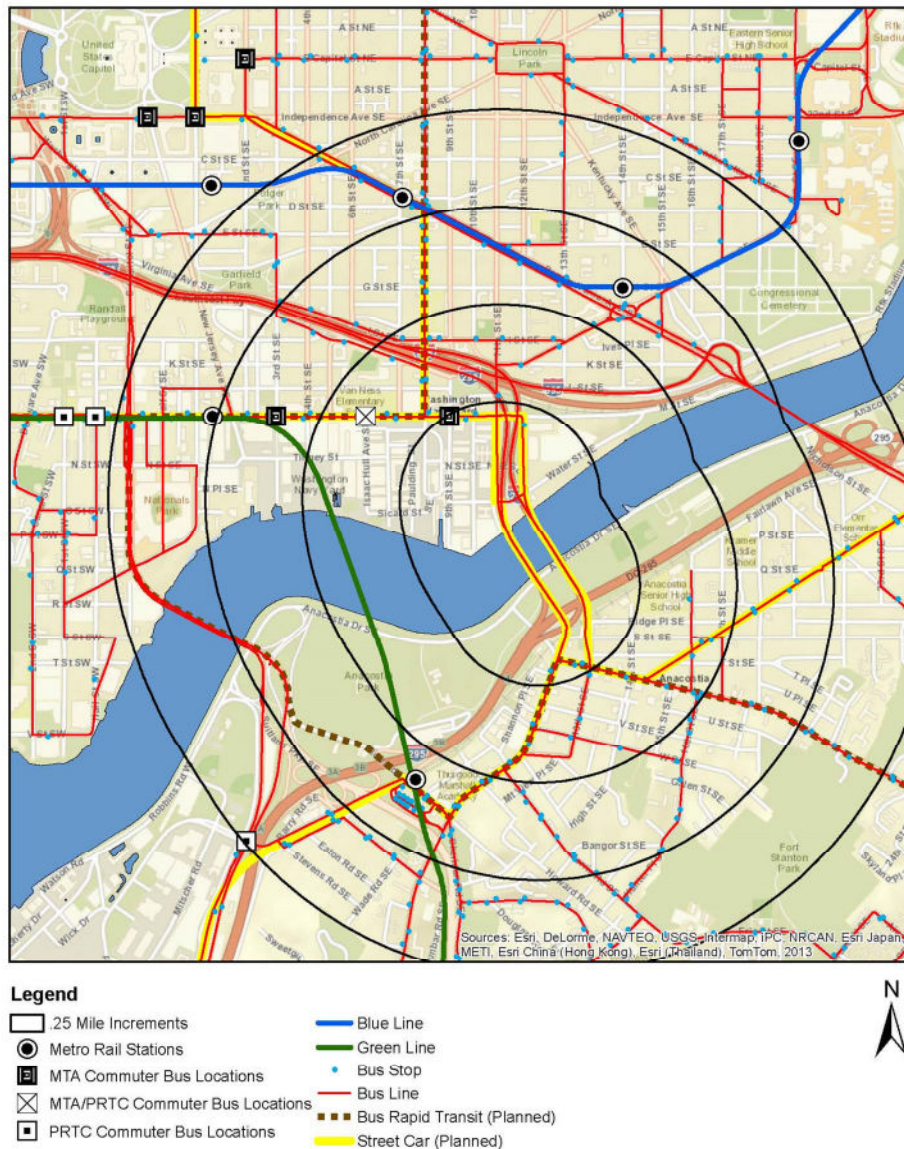
-  One Mile Radius
-  Principal Arterial Roads
-  Minor Arterial Road
-  Collector Roads

The third level of wayfinding hierarchy, referred to as the pedestrian level, consists of the wayfinding elements that would direct users to the 11th Street Bridge Park from the variety of points of interest and destinations, like public transit options (See Figure 2.29), parks, schools, cultural and community resources, or parking facilities and vice versa. Wayfinding devices at the pedestrian level would typically use any combination of safe and efficient road types to direct users along their way.



**Figure 2.29** Wayfinding Hierarchy: Pedestrian Level

Source: DC GIS Atlas



To illustrate how the wayfinding hierarchy works, consider a visitor from Maryland, traveling from the southern edge of DC to the 11th Street Bridge Park in a car. Our visitor would likely take I-295 North from the edge of the city, directed by wayfinding signage, into the one-mile radius of the bridge park. From the one-mile radius/edge of district, our visitor could easily be directed by wayfinding devices to the nearest arterial road. If our visitor chose to park at a private or public facility east of the river, pedestrian level wayfinding devices would be positioned to direct the user to their final destination, the 11th Street Bridge Park.

**RECOMMENDATION 3: PRIORITIZE INVESTMENT IN VEHICLE WAYFINDING TOWARD HIGH VOLUME INTERSTATE, FREEWAY, AND ARTERIAL ROADS THAT BRING VISITORS INTO THE 1-MILE RADIUS OF THE 11TH STREET BRIDGE PARK. (SEE FIGURE 2.28)**

The uniqueness of the proposed 11th Street Bridge Park may make it a popular regional destination, drawing visitors from throughout the District and from the surrounding suburbs; an analysis of traffic on key roadways leading to the park can therefore be helpful in planning for wayfinding. The District of Columbia Department of Transportation (DDOT) compiles traffic volume data, in both directions, at various locations around the city every three years, which it uses to create maps depicting annualized traffic. For this report, data from the five most recent years, 2006 through 2010, were drawn from the traffic volume maps for each roadway identified as a candidate for wayfinding at the edge of city, and edge of district layers. The mean and standard deviation were calculated for each roadway. The list was then ordered from high to low by mean (see Table 2.5 and Table 2.6). I-395 had the highest average traffic volume among roads that reach from the edge of the city to the one-mile radius. Pennsylvania Avenue SE has that highest average traffic volume among roads that reach from the edge of the one-mile radius to within one half mile of the site of the 11th Street Bridge Park.

**Table 2.5** *Annualized Traffic Volume for Edge of City Extent (in thousands)*

Source: DDOT

	<b><u>2006</u></b>	<b><u>2007</u></b>	<b><u>2008</u></b>	<b><u>2009</u></b>	<b><u>2010</u></b>	<b><u>Standard Dev.</u></b>	<b><u>Mean</u></b>
<b>I 395</b>	116.38	114.13	116.03	128.12	122.38	<b>5.16</b>	119.41
<b>I 295 north of 11th street bridge</b>	94.40	90.42	94.76	98.86	94.22	<b>2.68</b>	94.53
<b>I 695</b>	94.88	93.83	90.00	84.35	81.80	<b>5.14</b>	88.97
<b>I 295 south of 11th street bridge</b>	71.40	71.60	76.65	79.25	79.40	<b>3.54</b>	75.66
<b>Suitland Parkway</b>	35.90	44.40	44.20	44.50	52.20	<b>5.16</b>	44.24
<b>Pennsylvania Ave, SE</b>	34.78	34.00	33.83	32.58	29.68	<b>1.79</b>	32.97
<b>East Capital Street, SE</b>	32.47	32.17	31.58	33.63	33.38	<b>0.76</b>	32.65
<b>South Capital Street, SE</b>	31.12	31.86	31.58	33.00	31.91	<b>0.62</b>	31.89
<b>9th Street, NW</b>	25.10	20.90	20.70	20.80	19.10	<b>2.00</b>	21.32
<b>Independence Ave., SW</b>	17.36	17.99	17.89	18.21	16.66	<b>0.56</b>	17.62
<b>12th Street, NW</b>	17.20	16.90	16.90	17.00	17.00	<b>0.11</b>	17.00

**Table 2.6** *Annualized Traffic Volume for Edge of Sub-District Extent (in thousands)*

Source: DDOT

	<b><u>2006</u></b>	<b><u>2007</u></b>	<b><u>2008</u></b>	<b><u>2009</u></b>	<b><u>2010</u></b>	<b><u>Standard Dev.</u></b>	<b><u>Mean</u></b>
<b>Penn Avenue, SE</b>	43.77	43.13	42.93	26.93	16.80	<b>10.97</b>	34.71
<b>Martin Luther King Jr. Ave., SE</b>	13.33	14.43	14.35	14.45	15.40	<b>0.66</b>	14.39
<b>Good Hope Road, SE</b>	10.27	14.33	14.27	14.33	15.30	<b>1.76</b>	13.70
<b>8th Street, SE</b>	11.08	11.26	11.16	11.86	11.42	<b>0.28</b>	11.36
<b>17th St, SE</b>	11.20	11.30	11.20	10.40	10.00	<b>0.52</b>	10.82
<b>M street, SE</b>	8.75	8.80	8.75	12.35	11.95	<b>1.66</b>	10.12
<b>Minnesota Avenue, SE</b>	10.25	10.05	9.65	9.75	10.20	<b>0.24</b>	9.98
<b>Potomac Avenue, SE</b>	9.28	8.48	8.48	8.50	8.35	<b>0.34</b>	8.62
<b>11th Street, SE</b>	7.20	7.85	7.80	7.85	9.90	<b>0.92</b>	8.12

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**RECOMMENDATION 4: ENCOURAGE DRIVERS TO MAKE USE OF ON-STREET AND OFF-STREET PARKING RESOURCES CLOSER TO THE ONE-MILE EDGE OF THE SUB-DISTRICT AND MAKE USE OF ACTIVE MODES OF TRANSPORTATION TO GET TO THE 11TH STREET BRIDGE PARK.**

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The arterial and collector roads within the one-mile radius experience much less traffic volume than the edge of city interstates and freeways. A large increase in vehicular traffic on key corridors such as Martin Luther King Jr. Avenue, Good Hope Road, M Street, SE, and 11th St. SE, may cause the bicycle and pedestrian environment to deteriorate (see Figure 2.29). On-street and off-street parking resources should, therefore, be identified and cultivated as close to the one-mile buffer as possible in order to minimize congestion on key entrance corridors. Walking, cycling and bike share programs, and public transit alternatives could then be presented to visitors using wayfinding devices and incorporated into the overall active recreation experience of the 11th Street Bridge Park.

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**RECOMMENDATION 5: TIE THE 11TH STREET BRIDGE PARK INTO EXISTING WAYFINDING ON SIGNED BIKE ROUTES.**

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West of the river, four of the streets that were identified as candidates for bicycle wayfinding in earlier analyses have been designated by DDOT as signed bike lanes (see Figure 2.29). These streets include the following:

- 11<sup>th</sup> Street, SE
- Independence Avenue, SE/SW
- Potomac Avenue, SE
- South Capitol Street, SE

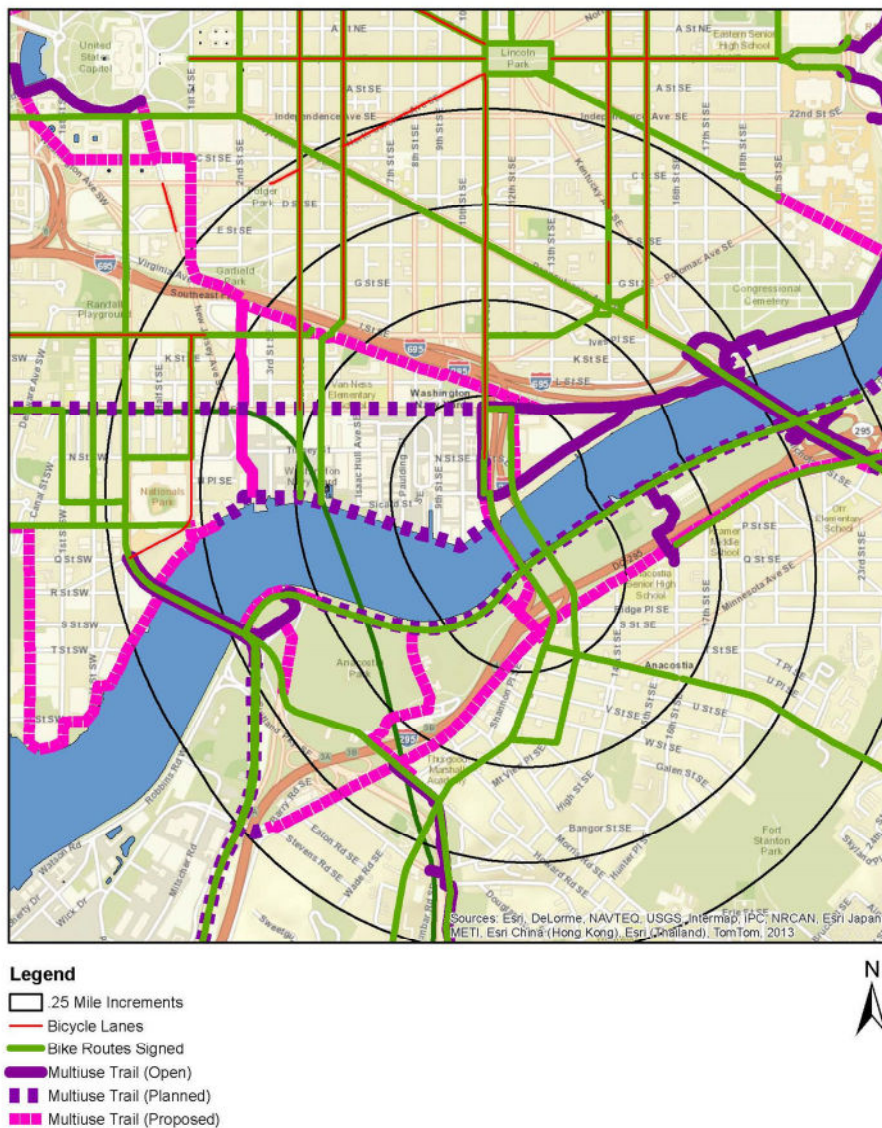
East of the river, five of the streets that were identified as candidates for bicycle wayfinding in earlier analyses and the Anacostia Riverwalk have been designated by DDOT as signed bike lanes. These streets include the following:

- South Capitol Street, SE
- Martin Luther King Jr. Avenue, SE
- Good Hope Road, SE
- Pennsylvania Avenue, SE
- Suitland Parkway, SE
- Anacostia Riverwalk, SE

We recommend that DDOT and the National Park Service be asked to include the 11<sup>th</sup> Street Bridge Park in confirmation, directional, and decision signage within at least a one-mile radius of the Bridge Park.

**Figure 2.30** Public Transit: Modes

Source: DC GIS Atlas



**RECOMMENDATION 6: IMPLEMENT 11<sup>TH</sup> STREET BRIDGE PARK-ORIENTED PEDESTRIAN AND BICYCLE WAYFINDING ON ALL EXISTING MULTI USE TRAILS, AND ADD NEW WAYFINDING DEVICES AS THE PLANNED AND PROPOSED MULTI-USE TRAILS ARE BUILT.**

The existing network of multi-use trails provides an opportunity to draw residents and visitors to the 11<sup>th</sup> Street Bridge Park through the placement of wayfinding devices. In addition to the existing multi-use trails, DDOT has identified additional planned and proposed expansions to the network (see Figure 2.30).



## CONCLUSION

Although there are many considerations affecting the design and implementation of an urban wayfinding system, the scope of the analysis and recommendations contained in this report were not meant to be exhaustive. It was our intent to provide the community and stakeholders behind the 11<sup>th</sup> Street Bridge Park project with some preliminary analysis of key issues.

Much work, however, remains to be done. At the pedestrian level in the hierarchy of wayfinding, and detailed analysis of points of interest, east and west of the river, should be conducted to identify likely places for the deployment of wayfinding devices that direct residents and visitors to primary entrance corridors. The process of regulatory approval for the placement of wayfinding devices should also be explored as early as possible in the wayfinding planning process (American Planning Association 2006). Finally, stakeholders in the wayfinding process such as business improvement districts, citizens, government agencies, and not-for-profit partners should be invited to provide their input.

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### **Data used for GIS maps:**

#### **Figure 2.2** *Bicycle Infrastructure Surrounding the 11th Street Bridge Park*

District of Columbia, Department of Transportation via DC GIS. 2007. Bicycle Lane (BicycleLn) [computer file]. <http://dcatlas.dcgis.dc.gov/metadata/BicycleLane.html>

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#### **Figure 2.3** *Metrobus Routes and Stops*

District of Columbia, Office of the Chief Technology Officer via DC GIS. 2007. Roads (RoadPly) [computer file]. <http://dcatlas.dcgis.dc.gov/metadata/RoadPly.html>

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#### **Figure 2.4** *Metrorail Lines and Stations*

District of Columbia, Office of the Chief Technology Officer via DC GIS. 2007. Roads (RoadPly) [computer file]. <http://dcatlas.dcgis.dc.gov/metadata/RoadPly.html>

National Capital Planning Commission, Department of Public Works, Office of the Chief Technology Officer via DC GIS. 2006. Waterbodies (WaterPly) [computer file]. <http://dcatlas.dcgis.dc.gov/metadata/WaterPly.html>

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Washington Metropolitan Area Transit Authority via DC GIS. 2012. Metro Lines – Complete System (MetroFullLn) [computer file]. <http://dcatlas.dcgis.dc.gov/metadata/MetroFullLn.html>

#### **Figure 2.5** *Metrorail Stations & Parking*

District of Columbia, Office of the Chief Technology Officer via DC GIS. 2007. Roads (RoadPly) [computer file]. <http://dcatlas.dcgis.dc.gov/metadata/RoadPly.html>

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#### **Figure 2.6** *Physical Access Site Context*

District of Columbia, Office of the Chief Technology Officer via DC GIS. 2008. Buildings 3D CyberCity and OCTO (BldgPly\_3D) [computer file]. [http://dcatlas.dcgis.dc.gov/metadata/BldgPly\\_3D.html](http://dcatlas.dcgis.dc.gov/metadata/BldgPly_3D.html)

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National Park Service via DC GIS. 2002. Park Polygon (ParkPly) [computer file].

<http://dcatlas.dcgis.dc.gov/metadata/ParkPly.html>

**Figure 2.9** *Challenges at Historic Anacostia*

District of Columbia, Department of Transportation via DC GIS. 2011. Capital Bikeshare Locations (CapitalBikeSharePt) [computer file]. <http://dcatlas.dcgis.dc.gov/metadata/CapitalBikeSharePt.html>

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**Figure 2.10** *Challenges at the Navy Yard*

District of Columbia, Department of Transportation via DC GIS. 2011. Capital Bikeshare Locations (CapitalBikeSharePt) [computer file]. <http://dcatlas.dcgis.dc.gov/metadata/CapitalBikeSharePt.html>

District of Columbia, Department of Transportation, Urban Forestry Administration via DC GIS. 2012.

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**Figure 2.11** *Opportunities at Anacostia* District of Columbia, Department of Transportation via DC GIS. 2011. Capital Bikeshare Locations (CapitalBikeSharePt) [computer file].

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**Figure 2.12** *Opportunities at Navy Yard* District of Columbia, Department of Transportation via DC GIS.

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