



District Department of Transportation

1st Place and Galloway St, NE

Transportation Access Study and
Improvement Plan
Final Report & Conceptual Design

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Transportation Access Study and Improvement Plan

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1.0 Introduction

This document summarizes the planning process and 10% conceptual design for 1st Place and Galloway Street, NE to improve multimodal functionality and area circulation. This project was initiated by the District Department of Transportation to improve access and circulation for the confluence of pedestrians, bicyclists, buses, and vehicles at the Fort Totten Metrorail station. The study area included roadways and paths within 1/4-mile of the Metrorail station. There are several significant changes coming to the area, including a planned reconfiguration of the Riggs Road/South Dakota intersection and several major real estate developments in various stages of planning and construction in the immediate vicinity that will significantly increase residential and commercial densities. These and other projects underscore the need to provide safe and efficient multimodal traffic circulation in the project study area. The primary goal of the project is to improve circulation so all modes can safely access and navigate the station area as the surrounding neighborhood evolves and increases the demand for the use of the Fort Totten Metrorail station.

The following design issues were addressed:

- Station access and circulation
- Streetscape and urban design
- Perceptions of safety for all users
- Access management
- Wayfinding
- Traffic calming
- Transit efficiency
- Bicycle parking
- Connections to the existing and planned regional trail network
- Congestion and safety at the reconfigured Riggs Road/South Dakota intersection

1.1. Existing Conditions

The project team conducted a thorough review of existing plans, studies, and designs to build upon and maximize the resources already invested in the project study area. Existing traffic, bus, bicycle, and pedestrian circulation conditions were evaluated and used as a baseline to develop three multimodal redesign alternatives for the corridor.

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Detailed documentation and analysis of existing conditions can be found as an appendix, and includes the following content:

- Existing roadway, pedestrian, and bicycle facilities overview
- Data collection and traffic model development: operations, level of service, mode splits
- A summary and review of the proposed future development projects in the area

1.2. Stakeholder & Public Improvement

Numerous coordination and design review meetings and field visits were conducted over the course of the project including DDOT Divisions, DC Office of Planning, National Park Service, and Washington Metropolitan Area Transit Authority. The primary issues that were addressed with the various agencies included: coordination with ongoing private land developments, maintaining bus operations, reconfiguration of the Kiss-and-Ride lot, and protection of National Park Service lands from encroachment.

In addition, a series of three public meetings were held over the course of this study. Full public meeting agendas, meeting materials, and notes can be found as an appendix. The three meetings included:

- November 17, 2009: project kick off meeting
- March 22, 2010: presentation of preliminary analysis and recommendations
- March 22, 2011: presentation of preferred design alternative

The key theme heard from the public across the meetings was to improve pedestrian connectivity through the station area and to the surrounding neighborhoods, particularly by formalizing the worn pedestrian paths across National Park Service property between Galloway and Gallatin Streets. The other key issue raised was to improve the perception of safety through regular maintenance and improvements such as lighting under the railroad bridges.

1.3. Design Criteria

The majority of the corridor is owned by the District of Columbia, with the section through the Fort Totten Metrorail Station being owned by WMATA. It was understood throughout the project that the proposed roadway improvements would be designed to District of Columbia standards with the bus-specific facilities designed to WMATA standards.

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Functional Classification: It is understood that the project corridor is classified as a Collector.

Design Speed: The posted speed is 25 mph, therefore a design speed would be between 25 and 30 mph. For geometric purposes a design speed of 30 mph was used, however there were locations where existing geometry was held to avoid significant construction impacts.

Minimum lane widths: A 12 foot minimum lane width was used for this project. The AASHTO minimum is 10 feet for this type of roadway; however, WMATA requested larger lane widths to better accommodate the relatively high number of busses in the corridor.

Percent of Heavy Vehicles: Based on existing traffic counts and using a conservative approach, the percentage of heavy vehicles was assumed to be 2%.

Design Vehicles: AASHTO bus was assumed as a design vehicle along the corridor. Within the reconfigured Kiss-and-Ride lot, a modified single unit truck (SU) was used to replicate a WMATA maintenance vehicle. The WMATA Station Site and Access Planning Manual was consulted for circulation in the Kiss-and-Ride lot. An AutoTurn analysis was also conducted at intersections along the corridor and within the Kiss-and-Ride lot. The AutoTurn analysis for critical turn movements are included as an Appendix.

General Guidance: The proposed design was also developed in accordance with other general guidance including the FHWA Manual on Uniform Traffic Control Devices (MUTCD), American Association of State Highway and Transportation Officials (AASHTO), Americans with Disabilities Act (ADA), and other guidelines, standards and specifications as appropriate.

1.4. Proposed Improvements and Cost Estimates

The proposed improvements seek to provide a more complete network of facilities and a friendlier environment for bicyclists and pedestrians along the corridor, while also maintaining the safe movements of vehicular traffic. Specific improvements are discussed in the 10% Conceptual Design Development section. The 1st Place and Galloway Street improvements include the following general components:

- geometric modifications and fully accessible (ADA) pedestrian crossings oriented to the primary desire lines to improve pedestrian access and safety

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- continuous and widened multi-use trail facilities along the corridor including new sections along the south side of Galloway Street, NE and the west side of 1st Place, NE
- shared lane markings and signage for bicycles on 1st Place, NE and Galloway Street, NE
- reconfiguration of the Fort Totten Metro station Kiss-and-Ride lot to improve access and circulation for both pedestrians and motorists
- streetscaping and landscaping including aesthetic design features, improved corridor lighting, seating areas, and a rain garden
- bus stop upgrades

A preliminary construction cost estimate was developed for the preferred conceptual design. Pay items were identified and rough quantity take-offs were developed. Unit costs were assigned based on historical cost data from the District of Columbia, DDOT and other sources. It is assumed that each of the three segments will be a separate construction contract based on property ownership and coordination requirements : 1st Place, WMATA Property, and Galloway Street. The segments are described in greater detail in the 10% Conceptual Design Development section below as well as in the design drawings Appendix.

Costs are based on 2010 dollars with a 20% contingency applied to total cost for each segment. The estimate does not include further costs for engineering design or acquisition of any right-of-way or easements. Following is a construction cost summary. A more detailed breakdown of the cost estimate for each segment is attached as an Appendix.

Physical Improvements 10% Concept Design Cost Estimates Summary	
Section	Total
1st Place NE: Riggs Road to WMATA Property	\$760,000
WMATA Property	\$1,720,000
Galloway Street NE: WMATA Property to South Dakota Avenue	\$440,000
Wayfinding Signs	\$10,000
	\$2,930,000
Note:	
-This cost estimate is a planning level estimate only.	
-The WMATA Property Section could include additional \$600k in optional plaza amenities (see 'WMATA Property' estimate for more details)	

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2.0 10% Conceptual Design Development

2.1. Alternatives Analysis

Multiple improvement alternatives were developed, analyzed and presented to the public. The alternatives were quite similar with inclusion of the general components mentioned above. Details of the design alternatives as well as public comments on the alternatives are attached as appendices to this report. Following describes the primary differences in the alternatives:

- Alternative 1 – On-street parking was not included on 1st Place NE along the Park-and-Ride lot. On-street parking was not included along the north side of Galloway Street NE west of South Dakota Avenue. The sidewalk along the south side of Galloway Street NE did not include a buffer.
- Alternative 2 - On-street parking was not included along the north side of Galloway Street west of South Dakota Avenue. The sidewalk along the south side of Galloway Street, NE included a buffer.
- Alternative 3 - On-street parking was included on 1st Place NE along the Park-and-Ride lot. On-street parking was included along the north side of Galloway Street NE west of South Dakota Avenue. The sidewalk along the south side of Galloway Street NE did not include a buffer.

Based on the alternative evaluation process, public comment and coordination with stakeholders, the preferred alternative ultimately developed most closely matched Alternative 3. All alternatives included reconfiguring the existing Kiss-and-Ride parking lot, however the parking lot layout, entry and exit points were significantly different in the ultimate preferred alternative based on detailed coordination with WMATA.

The following sections provide a detailed description of the 10% design elements associated with the preferred alternative.

2.2. Horizontal, Vertical and Edge Geometry

The existing horizontal alignment of 1st Place, NE and Galloway Street, NE through the project corridor curves from a north-south alignment to an east-west alignment, with straight segments intermingled with several curves. A Horizontal Design Report is attached as an appendix. Modifications to the existing horizontal alignments are only proposed at the following locations:

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- **1st Place NE at Riggs Road NE**– In order to accommodate vehicular movements at the 1st Place, NE and Riggs Road NE intersection, the existing roadway width will be maintained on 1st Place NE until **PC Station 203+00.00**, but will be shifted slightly east to accommodate the proposed multi-use path on the west side of the roadway. The improvements will narrow the roadway south of **PC Station 203+00.00**, further increasing the curvature of the horizontal alignment.
- **Bus Driveway Entrance at Fort Totten Metro Station Plaza**– In order to slow vehicular traffic and provide additional space for the proposed multi-use trail, the southwest corner of the bus driveway entrance will be realigned to create a more traditional T-intersection between 1st Place NE and the bus driveway, opposed to the existing flatter angled turn.
- **Kiss & Ride Lot at Fort Totten Metro Station Plaza**– In order to create additional pedestrian space at the Fort Totten Metro Station entrance and reduce pedestrian-motorist conflicts, the entrance to the Kiss-and-Ride lot will be closed and all vehicular traffic will be re-routed to the existing lot exit. The improvement will also involve realigning the lot exit to accommodate two-way traffic.

The existing vertical alignment of 1st Place NE and Galloway Street NE is generally flat (0% to 4%), but sloping down from a high point at Riggs Road NE and to the low point at South Dakota Avenue NE. No modifications to the existing vertical alignments are proposed. Detailed vertical alignment design will be completed in a later design phase.

2.3. Typical Roadway Cross Sections

The existing roadway typical sections are described in Section I-Existing Conditions. With the conceptual design, typical section changes are proposed for 1st Place NE and Galloway Street NE. Due to the varying nature of the corridor, six basic typical sections are proposed as follows. The typical sections are also presented in the Conceptual Design Drawings in the Appendix:

- **1st Place NE at Riggs Road NE**– Proposed improvements for the first 400 feet of 1st Place NE south of Riggs Road NE include maintaining the existing 12' northbound and southbound through lanes, while widening the existing 10' turn lane to 12'. The existing through lanes will also be striped and signed to include shared lane markings. The proposed curb line is shifted from the existing location on both sides of the street to allow for the addition of 6' buffer to separate the sidewalk from the roadway on each side and widening the sidewalks. A 6' sidewalk will replace the existing 5' sidewalk on the east side of 1st Place NE, and the existing 6' sidewalk on the west side will be widened to a 14'.

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- **1st Place NE West of the WMATA Parking Lot Entrance** – Proposed improvements in the next section of 1st Place NE involve both narrowing and realigning the roadway to provide additional pedestrian and buffer space. The existing 17' northbound and southbound lanes will be reduced to 12' and realigned eastward. The existing through lanes will also be striped and signed to include shared lane markings. The existing non-buffered 5' sidewalks will be relocated to each include a 6' buffer, and will be widened to 14' on the west side and 6' on the east side.
- **1st Place NE West of the Fort Totten Metro Station Entrance and Plaza** – Proposed improvements in this section of 1st Place NE requires narrowing the roadway by moving the west side curb line eastward, which also tightens the right-turn radius for southbound buses entering the station bus loop. The existing two 11' northbound and southbound through lanes will be reduced to a single 12' through lane in each direction with a 8' parallel parking lane on the east side of the road. The maintained through lanes will also be striped and signed to include shared lane markings. The 10' buffer on the east side of 1st Place will be reduced to 6' and the existing railing will be removed to widen the existing 5' sidewalk to 9', while maintain the curb line in the adjacent WMATA parking lot.
- **Galloway Street NE at the Fort Totten Metro Station Entrance Plaza** – Proposed improvements include maintaining the curb line on the north side of Galloway Street NE and creating curb extensions on the south side that will channelize and shorten pedestrian crossings. The 12' through lanes in each direction will be maintained and the taxi queue lane on the south side will be maintained as a loading zone for private shuttles. Curbed median will replace the continuous turn lane, with pockets for left turn movements at designated locations. The through lanes will also be striped and signed with shared lane markings. The existing sidewalk on the south side will be widened where curb extensions are installed.
- **Galloway Street NE East of the Fort Totten Metro Station Entrance and Plaza** – Proposed improvements will maintain the existing curb line on both sides of Galloway Street NE, with the exception of relocating the Kiss-and-Ride lot entrance to the east end of the lot, and placing a drop-off lane in place of the current entrance. The single 12' through lane in each direction will be maintained. The existing through lanes will also be striped and signed to be shared lanes. The existing sidewalks on each side of the road will also be maintained in dimension, and will be improved with streetscape elements and crossing improvements.
- **Galloway Street NE to South Dakota Avenue NE**– Proposed improvements will maintain the existing curb line on both sides of Galloway Street NE. The existing 7' parallel parking lane, 10' westbound through lane, and the 17' eastbound through lane will be reconfigured to create an

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8' parking lane and 13' through lanes in both directions. The through lanes will also be striped and signed with shared lane markings. The buffer and sidewalk will be maintained on the north side of the road. A 10' sidewalk will be installed on the south side of the road, with the inclusion of a retaining wall required to connect with the existing slope south of the road and stay within DDOT right-of-way.

2.4. Bicycle and Pedestrian Considerations

2.4.1. Pedestrian Desire Lines and Crossing Distances

Several pedestrian desire lines were identified through the station area that are not directly served by marked crossings or sidewalk connections. After crossing the bus only lane, pedestrians going to or from the station entrance have a strong tendency to bear northwest and northeast from the station entrance directly towards their destinations on either side of the tracks, rather than follow the marked crosswalk under the tracks before proceeding west or east. The proposed improvements provide marked crossings on each side of the tracks following these observed pedestrian desire lines. Moving the crossings out from under the tracks also improves visibility.

There is also strong evidence of pedestrians desiring to cross Galloway Street NE at the east end of the station, connecting to neighborhoods to the north. In addition, numerous worn paths are observed connecting the south side of Galloway Street NE to the neighborhood south of the project corridor. The proposed improvements include the addition of a new marked crossing across Galloway Street NE at the east end of the Fort Totten Metro Station area. The National Park Service has indicated that it does not intend to improve the connections south of Galloway Street at this time.

2.4.2. Buffers and Traffic Calming

The improvements for 1st Place NE include the creation of a buffer space between the pedestrian/bicycle zone (currently a sidewalk; a multi-use trail is proposed) and the roadway. A buffer creates a physical separation between users and improves the experiential quality of the corridor for pedestrians and bicyclists. Traffic calming measures such as curb extensions at intersections slow traffic and improve the experience of all users. The consolidation of several wide or continuous driveways along the corridor improves the access management and reduces the conflict points with pedestrians.

2.4.3. Shared Lane Markings and Future Trail Connections

Shared lane markings are included through the entire corridor to facilitate on-street bicycle movement.

The Metropolitan Branch Trail is a multi-use trail connecting Union Station in DC to Silver Spring, Maryland. The planned route generally parallels the tracks through the west side of the Fort Totten Metro station area. Correspondingly, the new section of widened pathway on the west side of 1st Place, NE is included to accommodate the future Metropolitan Branch Trail route subject to the draft Environmental Assessment (EA).

The East Coast Greenway is envisioned as a national trail connecting Florida to Maine. The planned route passes through the station area along Galloway Street, connecting to the Metropolitan Branch Trail immediately west of the station. Correspondingly, the new section of wide pathway on the south side of Galloway Street is included as a segment of the future East Coast Greenway route. The design of this new pathway segment includes a retaining wall required to connect with the existing slope south of the road and stay within DDOT right-of-way.

2.4.4. Bicycle Parking

While some bike parking currently exists directly at the Fort Totten Metro Station entrance, the potential demand for bike parking is higher than the available spaces. Currently, approximately 10 U-racks (with a capacity of 20 bikes total) and 3 rentable bike lockers (with a capacity of 6 bikes total) provide a total of 26 spaces and the only bike parking in the area. Several bicycles were observed locked to railings and gates in higher visibility locations adjacent to the station entrance.

WMATA is currently studying projected bicycle parking needs through 2030 and evaluating higher security bicycle parking options to fulfill that added capacity. Based on the growth projections, an estimated 35 additional bike parking spaces will be needed at the Fort Totten Metrorail station by 2020. By 2030, an estimated total of 100 bicycle parking spaces will be needed at the station.

According to the recommendations of the Metrorail Bicycle & Pedestrian Access Study (October 2010), this additional bicycle parking should be located closer to the station entrances and could consist of covered inverted-U racks, on-demand rental lockers, additional annual rental lockers, and additional inverted-U racks located in a secure room or cage. Several areas remain open immediately adjacent to the station entrance to place the additional bicycle parking, including: between the bridge piers (which would also funnel pedestrians to the marked crosswalk), inside the station gates, immediately east and west of the station entrance (at the south edge of the sidewalk), and on the island west of the station.

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2.5. Streetscape and Landscape Design

The series of public meetings held between November 2009 and March 2011 informed the development of a streetscape design for the project corridor. Key project goals were identified at the meetings and include creating a comfortable and inviting pedestrian environment, particularly in the pedestrian plaza at the Fort Totten Metro Station entrance. Through the public input process and subsequent design efforts, several streetscape elements are included in the proposed design to accomplish the above goals, and include:

- Sufficient space for comfortable pedestrian use along their primary desire lines.
- Buffer space between the street and sidewalk on 1st Place NE.
- A wide sidewalk (approximately 10' wide) was preferred along the south side of Galloway Street, NE, rather than reducing the sidewalk width to provide a sidewalk and buffer in the limited right-of-way. (Additional width was also desired as a future segment of the East Coast Greenway)
- Street trees both along the roadway and throughout the pedestrian plaza.
- Use of the decorative poured-in-place concrete walks in combination with decorative unit pavers in the plaza area.
- Decorative pedestrian scale lighting (Washington Globe).
- Median construction under the WMATA train tracks bridge to improve pedestrian crossings and channelize vehicular traffic.
- Seating areas with benches and landscaping in the pedestrian plaza; focused adjacent to the kiss & ride parking lot and bus bay areas.
- Improved landscaping at various locations along the corridor, including street trees, a rain garden and tree canopy areas in the pedestrian plaza.

2.6. Public Art

At the second public meeting, on March 22nd, 2010 it was indicated that an art piece is needed for the traffic circle at 3rd Street NE and Hamilton Street NE, located immediately north of the Fort Totten Metro Station Kiss-and-Ride lot. While this intersection is outside of the project limits, recommendations for the plaza at the station entrance include the use of several paving patterns, and reservation of space for art pieces such as sculptures.

2.7. Wayfinding

The improvements include a wayfinding sign schedule, which focuses on directional guidance oriented to key destinations including the Fort Totten Metro Station and amenities in the surrounding neighborhoods, such as: Lamond-Riggs Library, University of the District of Columbia, Food & Friends, and Keene Community Center. The signs are of the typical DDOT blue wayfinding design and will be oriented to all users. A detailed wayfinding signage plan including sign locations and suggested destinations can be found in the Conceptual Design Plans in the Appendix.

2.8. Lighting

Based on comments from the aforementioned public meetings, input indicated that pedestrian lighting is inadequate in the project area; particularly under the railroad bridge in the plaza area. The proposed lighting design shown on the design plans attached as an appendix was developed to improve the streetscape environment and improve visibility for pedestrians. Preliminary lighting spacing was evaluated for roadway areas, walkway areas and crosswalks within the project. Washington Globe pedestrian lights, a DDOT standard fixture, are recommended through the project area to supplement existing roadway lighting fixtures. Some existing roadway lighting fixtures will have to be relocated to accommodate proposed geometric improvements. Detailed lighting design will be completed in a later design phase.

2.9. Drainage and Erosion & Sediment Control

Proposed improvements will generally not alter existing drainage patterns. Drainage modifications are limited to either adjusting, or removing and replacing curb inlets. The impervious surface area will slightly increase, particularly in the pedestrian plaza area, however the proposed rain garden will infiltrate some of the additional runoff and the additional buffer space throughout the project area can be used to improve overall drainage infiltration. Erosion and sediment control will primarily consist of curb inlet protection, silt fence and possible sediment traps in the disturbed areas.

2.10. Utility Impacts

The project survey included some limited subsurface utility information. Other utility information was gathered from existing construction plans; however the coverage of these plans was limited. Additional utilities may exist within the project area that are not shown on the project survey.

The conceptual designs assume that some utilities will be impacted with each phase of construction. Utility impacts based on existing surface utility features have been quantified and costs provided, however, this cost could vary significantly depending on actual utility conflicts and subsurface conditions. As future design progresses, a comprehensive subsurface utility survey should be conducted. Utility stakeholders for future phases include PEPCO, Washington Gas, DC Water and Sewer Authority, Verizon, Comcast and possibly others.

2.11. Right-of-Way and Property Impacts

The project included a property survey as well as a complete metes and bounds survey of the WMATA property. The metes and bounds survey was conducted assuming DDOT would construct improvements on WMATA property and that property would ultimately be transferred to DDOT. Based on the current survey and property information, all of the proposed conceptual design work will take place either on WMATA property, within DDOT Right-of-Way, or minimally on National Park Service (NPS) land.

Three locations should be noted for future design phases with design considerations relative to right-of-way and property impacts:

- The design of the new pathway segment on the south side of Galloway Street includes a retaining wall required to connect with the existing slope south of the road and stay within DDOT right-of-way.
- A small wedge of proposed widened sidewalk located adjacent to the bus loop entrance may require National Park Service property.
- The realignment and consolidation of driveways and the removal of informal parking on DDOT right-of-way along 1st Place, NE south of Riggs Road will require coordination with the adjacent property owners.

2.12. Traffic Analysis and Traffic Control

A comprehensive traffic analysis was performed as a part of the project and is included as an appendix. The traffic analysis of the proposed geometry and projected traffic volumes indicated the following findings:

- All intersections are projected to perform at a level of service D or better
- No operational problems were observed at any of the WMATA parking lot intersections

- Considering the potential for diverted traffic, and that limited right-of-way precludes the addition of a short eastbound right turn lane at the intersection of Galloway Street and South Dakota Avenue, it is recommended to implement a dedicated right turn overlap phase at the Riggs Road/South Dakota Avenue intersection.

2.13. Construction Phasing and Maintenance of Traffic

Improvements are grouped into four phases, determined by property boundaries and the recommended improvements. 1st Place NE refers to the area from the project limit at Riggs Road NE to the entrance for the WMATA parking lot. The Metro Plaza area is from the entrance to the parking lot to just west of the Galloway Street/4th Street NE intersection. The Galloway Street NE section consists of the area from 4th Street NE to the project limit at South Dakota Avenue NE. The fourth phase is the installation of a wayfinding sign system. The phases correspond to the cost estimates for each phase included in the Appendices. The following describes the phases of the project and considers maintenance of traffic schemes during each phase.

- **Phase I (1st Place NE)** - The work associated with this intersection requires modifications to the road geometrics, striping, as well as the sidewalk and buffer zone. It appears that construction would require closure of one lane at a time on 1st Place NE to facilitate curb modifications. Bicycle and pedestrian traffic would be detoured to either side of 1st Place NE during construction, dependent upon curb reconstruction.
- **Phase II (Metro Plaza)** – The work associated with this intersection requires modifications to road and sidewalk/trail geometrics, striping, pedestrian plaza at the Fort Totten Metro entrance, and WMATA Kiss & Ride lot. It appears that construction would require closure of one lane at a time on 1st Place NE.. Trail/sidewalk construction could be staged so that narrow portions of trails or sidewalks are usable at all times.
- **Phase III (Galloway Street NE)** - The work associated with this intersection requires modifications to sidewalk geometrics and improvements in the buffer zone. It appears that construction will have a limited impact on vehicular movement, but will require the closure of one lane during installation of concrete pads in the roadway at existing bus stops. Bicycle and pedestrian traffic would be able to access the sidewalk on the north side of Galloway Street NE during most of the construction, with possible closure during the installation of concrete bus pads on the north side of Galloway Street NE.

- **Phase IV (Wayfinding Signs)** - The work associated with this phase involves the installation of wayfinding signs for pedestrians and bicyclists. It appears that construction will have limited impact of vehicular, pedestrian, and bicycle movement.

Phases I, II and III, may require brief nighttime full roadway closures or one-way flagging operations to accomplish construction activities in particularly constrained locations. It is also recommended that all construction activity be preceded by an intensive public outreach effort to alert citizens to the upcoming work and potential inconvenience.

2.14. Environmental Compliance

Future design phases should include coordination with the National Park Service and FHWA to ensure compliance with NEPA and 4(f) environmental review requirements, including coordination with the Metropolitan Branch Trail Final Environmental Assessment.