



NEW YORK AVENUE STREETSCAPE AND TRAIL PROJECT





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District Department of Transportation
55 M Street, SE
Washington, D.C. 20003

by



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EXECUTIVE SUMMARY

SECTION 1

EXECUTIVE SUMMARY

New York Avenue NE is a six-lane principal arterial roadway that functions as a primary gateway from Maryland to downtown Washington D.C. The existing condition of the corridor is vehicle-centric, with insufficient pedestrian and bicycle accommodations to meet current demand and future growth. In October 2016, the District Department of Transportation (DDOT) initiated the year-long New York Avenue NE Streetscape and Trail Project (Project) to facilitate multimodal opportunities and unify the corridor with streetscape improvements. Goals of this Project include improving pedestrian facilities, bicycle accommodations, and safety along New York Avenue NE. The Project limits extend along New York Avenue NE between Florida Avenue NE and Bladensburg Road NE and extend south of New York Avenue NE from NoMa-Gallaudet U Metro Station to the U.S. National Arboretum (the Arboretum). Details about the Project area are shown in **Figure 1**.

EXTENSIVE PUBLIC AND STAKEHOLDER ENGAGEMENT

The Project Team developed design concepts that address the pedestrian and bicyclist needs of this important corridor. These concepts were refined based on extensive public engagement including:

- Four (4) community meetings held in locations throughout the corridor.
- Two (2) on-site public engagement events.
- Four (4) interagency meetings.

Considering input from stakeholders and the community, each concept was evaluated for its ability to achieve the Project goals. Public outreach was communicated through direct mailings, online, and in-person to reach the widest constituency as possible. The public outreach is further defined in **Section 3** of this report.

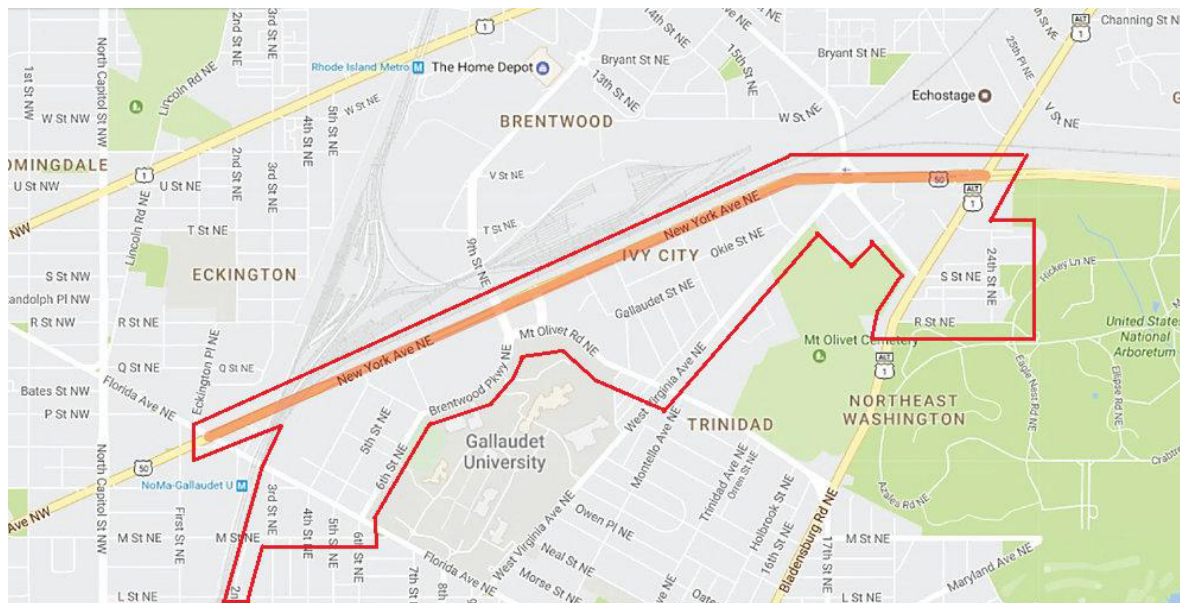


Figure 1: Project Area

DESIGN CONCEPT SUMMARY

The selected design concept includes streetscape improvements throughout the Project Limits with substantially new facilities for pedestrians and bicyclists located on the north side of New York Avenue NE from the 4th Street NE intersection to 16th Street NE intersection. The streetscape improvements improve safety and visibility for all, while preserving the vehicle capacity of the roadway. The preferred design concept is further discussed in **Section 5**. This concept includes:

- Bicycle Improvements: Raised two-way cycle track on the north side of New York Avenue NE, a continuous bicycle route between the

Metropolitan Branch Trail (MBT) and the Arboretum, and improved pavement markings, road crossings, and signage.

- Pedestrian Improvements: New sidewalks that fill in the gaps between missing segments, updated intersection designs, and new wayfinding signage and street furniture.
- Green Infrastructure: Opportunities to implement Low Impact Development (LID) strategies, permeable pavements and bioretention facilities that will reduce the amount of impervious surfaces and stormwater runoff.
- Landscaping: Enhance the overall character and sense of community with plantings of over three hundred (300) street trees, shrubs, and groundcover.
- Lighting: New LED Standard DDOT fixtures for the roadway, pedestrian, and bicycle facilities that will enhance the natural surveillance by all users.



Figure 3: Conceptual rendering of north side New York Avenue NE streetscape from Fairview Avenue NE to 16th Street NE.

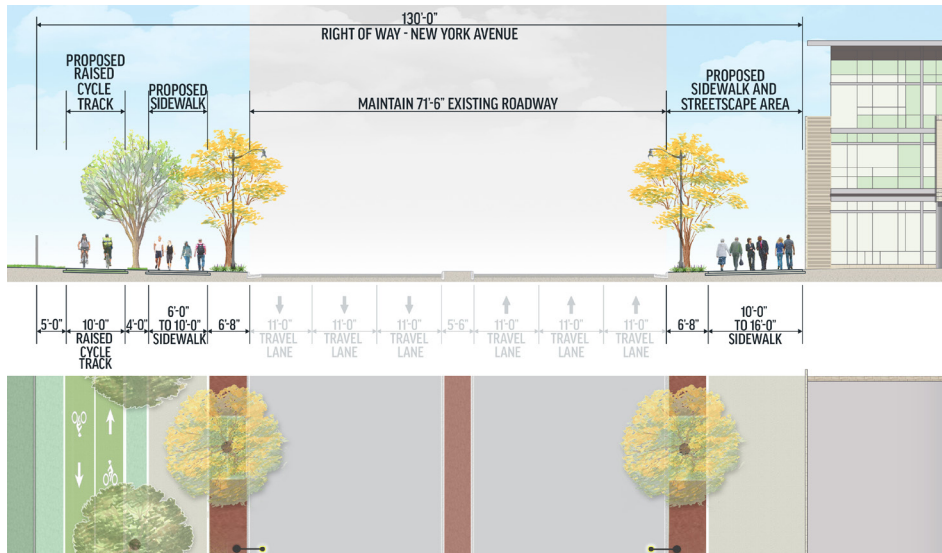


Figure 2: Typical streetscape section of the preferred concept of New York Avenue NE between 4th Street NE and 16th Street NE, excluding the intersection at 9th Street NE Bridge.

New York Avenue NE	Existing	Proposed
New Sidewalk Connections	NA	3,800 LF
ADA Compliant Sidewalk	4,400 LF	18,600 LF
ADA Compliant Sidewalk Ramps	8	86
ADA Compliant Driveway Crossings	10	41
Separated Bicycle Facilities	0 LF	5,265 LF
Street Trees	102	332
Bio-Retention Facilities	0	29
Consistent Light Fixture Design	No	Yes

Figure 4: Improvements along New York Avenue NE.

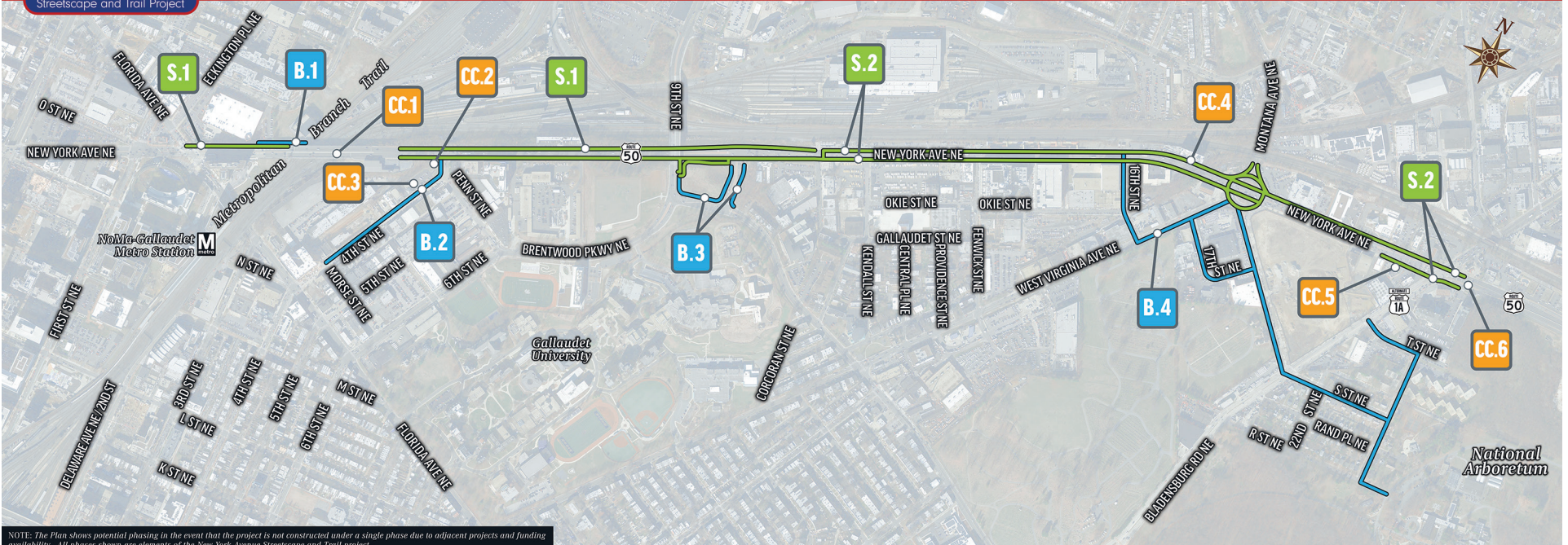
NEXT STEPS

The following next steps should be taken to ensure that the improvements to New York Avenue are achieved:

- **Right of Way (ROW):** Generally, the proposed streetscape improvements fit within the existing DDOT roadway right of way. Several permitted and non-permitted private encroachments onto the roadway right of way must be removed in order to accommodate the proposed improvements. The proposed off New York Avenue NE bicycle accommodations along the roadway network are within the existing roadway right of way. Several of the proposed connections to the MBT will require property acquisition. See **Section 4** and **Section 5** for additional detail.
- **Construction Cost Estimation:** The construction cost estimate for the selected design concept is approximately \$27 million. This cost is in 2017 dollars and does not include final engineering, right of way, and construction inspection costs. See **Section 5** for additional details.
- **Phasing Plan:** The Project Team developed a strategy outlining how construction could be phased into six (6) construction projects in the event that the Project is not constructed under a single phase. The phasing plan would be implemented in the case that circumstances arise, such as conflicting adjacent project schedules and issues due to funding availability (**Figure 6**). See **Section 6** for additional details.
- **Future Studies and Projects:** Through the public process and technical review of the Project Area, the Project Team identified and recommended seven (7) additional projects in the surrounding community. The recommendations can be found in **Section 6**.



Figure 5: Project Timeline



NOTE: The Plan shows potential phasing in the event that the project is not constructed under a single phase due to adjacent projects and funding availability. All phases shown are elements of the New York Avenue Streetscape and Trail project.

STREETSCAPE FOCUSED PHASE		BICYCLE FACILITY FOCUSED PHASE			
PHASE - S.1 New York Avenue NE Streetscape between Florida Avenue NE and Fairview Avenue NE	PHASE - S.2 New York Avenue NE Streetscape and Cycle Track Improvements between the Fairview Avenue NE and Bladensburg Road NE	PHASE - B.1 Metropolitan Branch Trail Connections to New York Avenue	PHASE - B.2 4th Street NE Bicycle Improvements	PHASE - B.3 Improved and widened sidewalks at 9th Street NE / Mount Olivet Road to New York Avenue NE	PHASE - B.4 Off-New York Avenue Bicycle Connections (16th Street NE to National Arboretum)
CONCEPT CONSIDERATIONS					
CONCEPT CONSIDERATION - CC.1 New York Avenue Bridge Bicycle Infrastructure	CONCEPT CONSIDERATION - CC.2 Multimodal Tunnel Under New York Avenue	CONCEPT CONSIDERATION - CC.3 Multimodal Connection at 1348 4th Street NE	CONCEPT CONSIDERATION - CC.4 New York Avenue Raised Cycle Track Extension to Montana Avenue	CONCEPT CONSIDERATION - CC.5 New City Bicycle Facilities Extension to Bladensburg Road	CONCEPT CONSIDERATION - CC.6 Bladensburg Road to South Dakota Multimodal Connection

Figure 6: Construction Phasing Plan

BACKGROUND AND EXISTING CONDITIONS

SECTION 2



Photo 1: New York Avenue NE, North side in the vicinity of 4th Street NE



Photo 2: New York Avenue NE, South side in the vicinity of 4th Street NE



Photo 3: New York Avenue NE, South side in the vicinity of Kendall Street NE



Photo 4: New York Avenue NE, North side in the vicinity of Kendall Street NE



Photo 5: New York Avenue NE, North side in the vicinity of 16th Street NE



Photo 6: New York Avenue NE, South side in the vicinity of 16th Street NE

BACKGROUND AND EXISTING CONDITIONS

PROJECT OVERVIEW

New York Avenue NE is a major transportation route that connects neighborhoods, industrial, and commercial areas in Northeast Washington, D.C. The existing condition of the corridor is motor vehicle focused and has inconsistent and insufficient pedestrian and bicycle facilities. Portions of the highway are divided by raised medians or pavement markings. The corridor is bounded on the north by heavy and light rail lines and the Union Station railroad yard, which are owned by Amtrak and the Washington Metropolitan Area Transit Authority (WMATA). The rail yard acts as a barrier to the neighborhoods and businesses to the north. Connections at Florida Avenue NE, 9th Street NE, Montana Avenue NE, and Bladensburg Road NE link New York Avenue NE to northern neighborhoods. New York Avenue NE crosses over the railroad tracks between Florida Avenue NE and 4th Street NE on two (2) separate, parallel steel structures with precast, post-tensioned concrete decks that were constructed by DDOT in 2011.

The existing topography and right of way is a challenge in the Project area. The grading of the landscape is considerably steep along the north edge of the New York Avenue NE right of way. There are existing structural retaining walls with tie backs to the north of the roadway from 4th Street NE to the Howard Johnson property and from the Howard Johnson property to the 9th Street NE Bridge. While the existing right of way is wide (approximately 130'), a significant portion of that space is used for vehicle travel or is made up of steep topography. Roadway widths are significantly wider at intersections, such as Bladensburg Road NE and 9th Street NE/Mount Olivet Road NE, due to the addition of dedicated turn lanes. At the 9th Street NE/Mount Olivet Road NE intersection the right of way width is 88' wide. Existing private encroachments (permitted and unpermitted signage, retaining walls, fencing, etc.) are present throughout the Project corridor. There is one (1) tunnel structure underneath and one (1) bridge structure over New York Avenue NE, which are both privately owned by railroad companies. In addition, the 9th Street NE bridge over New York Avenue NE is DDOT owned, as is the New York Avenue NE

Bridge over the Union Station railroad yard. More details regarding these structures is written in the Bridges & Structures section.

LAND USE AND DEVELOPMENT

The existing land use south and north of New York Avenue NE is low and medium density and consists of commercial, industrial, transportation, and mixed-use development (**Figure 7**). The Union Station railroad yard dominates the north side of the Project limits and residential and commercial development lies beyond the railroad track limits. The Union Station railroad yard also creates a barrier between the land uses to the north and those that are immediately adjacent to the south of the Project limits. As a result, the majority of this analysis will describe the land uses that are immediately south of the Project limits.

East of the 16th Street NE intersection, a majority of the land use is commercial and industrial; New City is a proposed mixed-use redevelopment project that is currently under demolition and proposes to rebuild 2,800 feet of streetscape within the Project limits. West of the 16th Street NE intersection, land uses vary and can be described as mixed-use, residential, commercial, transportation (rail yard and bus storage), and federal lands (National Park Service "NPS").

Beyond the Project limits to the south, the land use are residential, commercial, industrial, and green space (Mount Olivet Cemetery and U.S National Arboretum). See **Figure 7** Existing Land Use for further details.

All recent and future planned redevelopment, primarily on the south side, in the area has been mixed-use. The new land uses have established or propose a streetscape design and wider sidewalk on the south side of the Project limits that meet current DDOT standards. The New City development, in particular, proposes a cycle track along the street frontages of both New York Avenue NE and Montana Avenue NE. All other new developments listed have established a wider sidewalk, ADA

compliant ramps, new street trees, lighting and various street furniture elements within the Project limits.

PEDESTRIAN, BICYCLE AND VEHICULAR CIRCULATION

As part of the Project initiation, the Project team developed a map of the existing circulation conditions within the Project study area (**Figure 8**).

New York Avenue NE is a major roadway carrying an Average Annual Daily Traffic (AADT) of over 48,600 vehicles. The Project area contains nine (9) signalized intersections of New York Avenue NE. Of these nine (9) signalized intersections, eight (8) intersections have at least one (1) striped crosswalk across New York Avenue NE. At Bladensburg Road NE, the heaviest pedestrian movements were on the north and west legs of the intersection, with the northwest corner getting the most foot traffic. The southwest, northwest, and northeast corners are where most people queue as they wait to cross New York Avenue NE at Montana Avenue NE

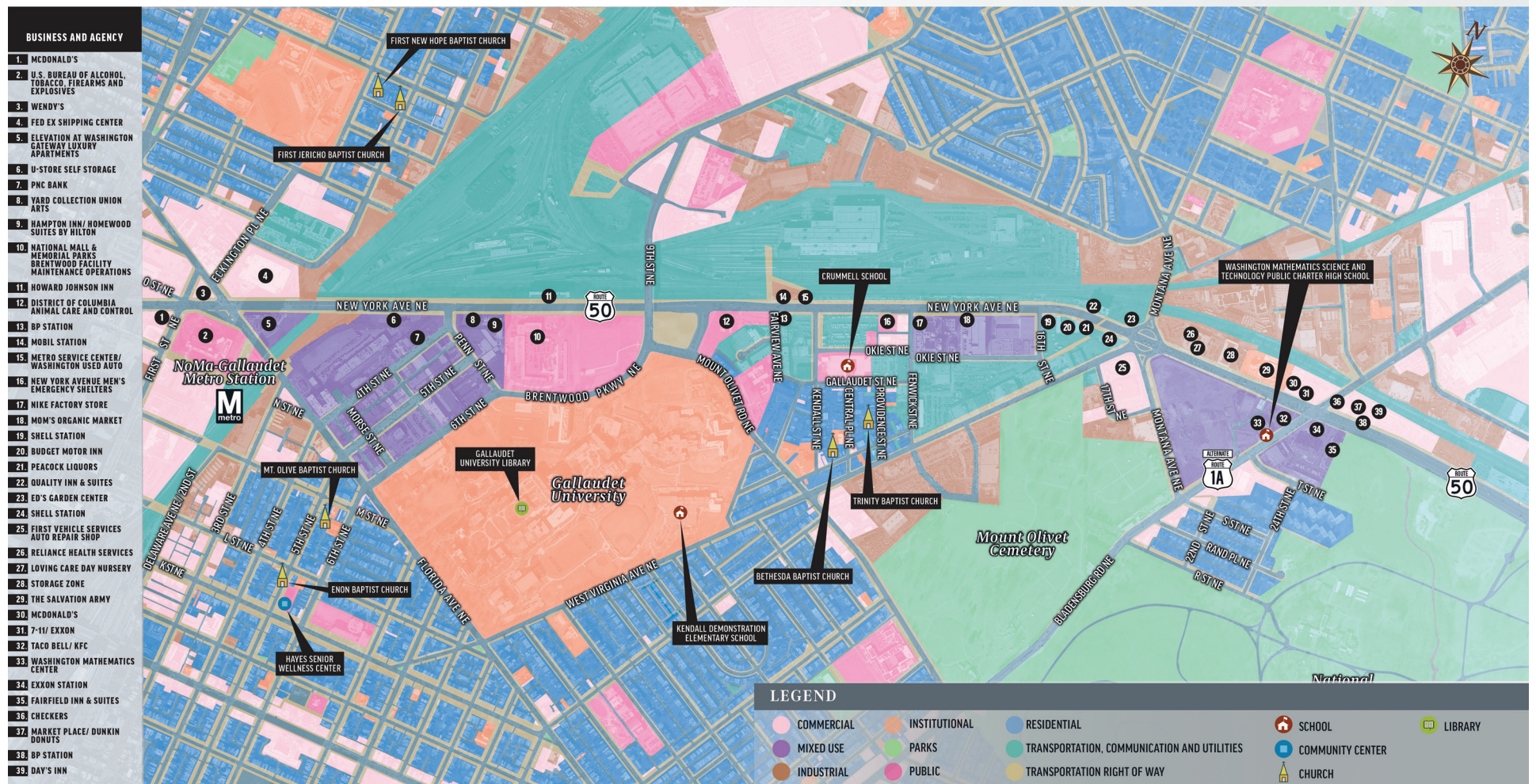
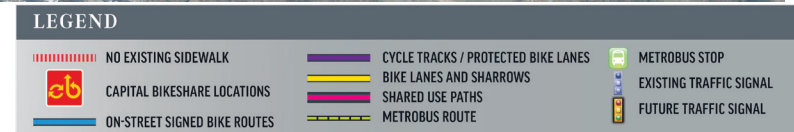


Figure 7: Existing Land Use



Figure 8: Existing Pedestrian, Bicycle and Vehicle Circulation Map



with the heaviest pedestrian movements on the north and south legs. Those who chose to cross New York Avenue NE intersection at 4th Street NE, the only intersection that does not include a crosswalk, demonstrated a clear preference for the east leg over the west leg. There are no existing designated bicycle facilities along New York Avenue NE within the Project area. See **Figures 17, 18, 19, and 20 (pages 23-24)** for existing bicycle facilities within the Project limits.

During the scoping process it was determined that additional efforts were needed to improve the pedestrian and bicyclist movements at the New York Avenue NE-Montana Avenue NE-West Virginia Avenue NE circle and Bladensburg Road NE intersections. It should be noted that prior to the initiation of this Project, the intersection of Bladensburg Road NE and New York Avenue NE was identified by DDOT as a high crash intersection as part of Vision Zero activities. The design created by the Vision Zero team was incorporated into this Project.

STREETSCAPE ANALYSIS

A streetscape existing conditions analysis and inventory was conducted as part of the Project initiation phase. Data about the Project area was gathered from site visits and desktop research which included identifying existing vegetation, streetscape amenities, ADA compliance, pedestrian and bicycle circulation, and land use. Streetscape improvement opportunities and constraints were derived from the existing conditions data and were considered when developing the concept design for the Project area. **Figure 9 (page 17)** gives a snapshot of the existing streetscape conditions along New York Avenue NE, which contains very few trees, inconsistent sidewalk connections and sidewalk conditions, and a variety of lighting fixtures. During the analysis, it was determined that sidewalks, curb ramps, vegetation and lighting have the greatest potential to improve user circulation, safety and unify the New York Avenue NE corridor.



Photo 7: New York Avenue NE includes long stretches of areas with no sidewalk. Pedestrian worn, dirt paths have formed at these locations.



Photo 8: On north side of New York Avenue NE, there are areas with paved asphalt paths along the guideway.

Existing Sidewalk Conditions

New York Avenue NE from Florida Avenue NE to Bladensburg Road NE currently lacks a continuous sidewalk on both north and south sides to meet DDOT and ADA requirements. An ADA compliance evaluation was completed in May 2017 to evaluate the existing pedestrian conditions along New York Avenue NE (see **Appendix A**). **Figures 9, 10, and 11** outline the details regarding existing sidewalk conditions and missing sidewalk connections along New York Avenue NE.

There is approximately 8,350' of existing sidewalk that is not ADA compliant. There are also currently three (3) separate stretches along the north side of New York Avenue NE where no sidewalks currently exist for a total length of approximately 3,800'. The demand for formal pedestrian linkages is evident by the pedestrian worn, dirt paths where sidewalks do not exist.



Figure 9: Existing Streetscape Conditions

LEGEND

	NO EXISTING SIDEWALK		CYCLE TRACKS / PROTECTED BIKE LANES		METROBUS STOP
	CAPITAL BIKESHARE LOCATIONS		BIKE LANES AND SHARROWS		EXISTING TRAFFIC SIGNAL
	ON-STREET SIGNED BIKE ROUTES		SHARED USE PATHS		FUTURE TRAFFIC SIGNAL
			METROBUS ROUTE		



Photo 9: New York Avenue NE and Bladensburg Road NE intersection.



Photo 10: Streetscape along New York Avenue NE between Fenwick Street NE and Hecht Avenue NE.

	Florida Avenue NE to 4th Street NE	East of 4th Street NE to 16th Street NE	East of 16th Street NE to Montana Circle	East of Montana Circle to Bladensburg Road NE
North	<p>Majority of existing sidewalk is ADA Compliant.</p> <p>The sidewalk on New York Avenue NE Bridge is ADA Compliant.</p> <p>Non-ADA Compliant Sidewalk: ~130' immediately west of the New York Avenue NE Bridge.</p> <p>No Existing Sidewalk: New York Avenue NE Bridge to 4th Street NE.</p>	<p>Majority of existing sidewalk is Non-ADA Compliant.</p> <p>ADA Compliant Sidewalk: ~400' from the east of the 9th Street NE Bridge to about 80' west of the 9th Street NE crosswalk.</p> <p>No Existing Sidewalk: In front of Howard Johnson Hotel (~500') East of Fairview Avenue NE (~2400')</p>	<p>All existing sidewalk is Non-ADA Compliant.</p> <p>No Existing Sidewalk: ~300' immediately east of 16th Street NE.</p>	<p>All existing sidewalk is Non-ADA Compliant.</p>
South	<p>Majority of existing sidewalk is ADA Compliant.</p> <p>Non-ADA Compliant Sidewalk: ~480' immediately east of the New York Avenue NE Bridge.</p>	<p>Majority of existing sidewalk is Non-ADA Compliant.</p> <p>ADA Compliant Sidewalk: ~500' immediately east of 4th Street NE. ~190' immediately west of Kendall Street NE. ~700' immediately east of Fenwick Street NE.</p>	<p>Majority of existing sidewalk is Non-ADA Compliant.</p> <p>ADA Compliant Sidewalk: ~150' immediately east of 16th Street NE</p>	<p>All existing sidewalk is Non-ADA Compliant.</p>

Figure 10: Existing Sidewalk Conditions along New York Avenue NE

Missing Sidewalk	
Location	Length (ft.)
North side New York Avenue Bridge to 4 th Street NE	Approximately 640'
North side 4 th Street NE to 9 th Street NE (in front of the Howard Johnson hotel)	Approximately 510'
North side between Fairview Avenue NE to 16 th Street NE	Approximately 2,650'

Figure 11: Missing Sidewalk Locations and Lengths

Existing Curb Ramps and Driveways

All curb ramps, potential curb ramp locations, and driveway crossings were analyzed during the ADA evaluation of New York Avenue NE. A total of sixty-seven (67) curb ramps and sixty-one (61) driveway crossings were assessed. **Figure 12** summarizes details on ADA Compliant and non-existent curb ramp locations. Non-existent curb ramp locations were identified as locations where crosswalks were provided, but no curb ramp existed. **Figure 13** has details on ADA Compliant driveway crossing locations. All other existing curb ramps and driveway crossings are non-ADA Compliant, as shown in **Appendix A**. Also see **Appendix A** for ADA Evaluation Maps and Tables.



Photo 11: Existing crosswalk, curb ramps and refuge island at Montana Circle.

ADA-Compliant Curb Ramps	
Quantity	Location*
4	Florida Avenue NE
1	Mount Olivet Road NE
1	Fenwick Street NE
1	Hecht Avenue NE
1	16 th Street NE
Non-Existent Curb Ramp Locations	
Quantity	Location*
3	Fairview Avenue NE
4	Kendall Street NE
2	Fenwick Street NE
3	16 th Street NE

*See Appendix A for exact locations

Figure 12: Curb Ramps and Missing Curb Ramp Locations

ADA-Compliant Driveway Crossings	
Quantity	Location*
1	The Elevation at Washington Gateway
1	PNC Bank
1	Yard Collection at Union Arts
1	Hampton Inn/Homewood Suites by Hilton
2	National Mall & Memorial Parks Brentwood Facility Maintenance Operations
1	District of Columbia Animal Care and Control
2	BP Station
2 (Unused Driveways)	Bus Depot Station
1 (Unused Driveway)	Driveway 250' west of 16 th St NE
2	Shell Station at 16 th St NE

*See Appendix A for exact locations

Figure 13: ADA Compliant Driveway Crossing Locations

BRIDGES AND TUNNEL STRUCTURES

There are three bridges and a tunnel in the Project limits: the New York Avenue NE bridge over the Union Station railroad yard (the “New York Avenue NE Bridge”), the 9th Street NE Bridge over New York Avenue NE at Mount Olivet Road (the “9th Street NE Bridge”), the railroad tunnel underneath New York Avenue NE (the “New York Avenue NE Tunnel”), and the unused railroad bridge over New York Avenue NE, which is located immediately west of the New York Avenue NE-West Virginia Avenue-Montana Avenue circle (the “inactive railroad bridge”). These three (3) bridges cause challenges to the existing bicycle and pedestrian connection design and are described below.

New York Avenue NE Bridge

The New York Avenue NE Bridge was constructed 2011 with steel non-supportive structural art on the north and south sides of the abutments, a raised median, three (3) east and westbound vehicle travel lanes and a five-foot sidewalk on the north and south sides of the vehicle travel lanes. The sidewalk is separated from the vehicle travel lanes with a 1'-0" wide concrete traffic barrier. Refer to **Appendix I** for the typical section of the existing structure.

9th Street Bridge

The 9th Street NE Bridge crosses over New York Avenue NE and carries traffic north and southbound over the Union Station railroad yard and tracks. The bridge is a four (4) span continuous steel superstructure with concrete deck that was constructed in 2011. Underneath the bridge the sidewalks along New York Avenue NE vary from 5'-0" to 8'-0" feet in width.

Inactive Railroad Bridge

There is an existing inactive steel through-girder railroad bridge over New York Avenue NE that used to serve the Union Market railroad as a spur

into the Ivy City and Union Station area. This study did not take into account the last use of the railroad bridge, but the property rights to the bridge are owned by Amtrak and at the time of this report, the inactive railroad bridge was being pursued by an unknown third-party buyer. The sidewalk space underneath the bridge is 8'-6" to 9'-0" feet in width and does not create a constraint to the streetscape design envisioned.



Photo 12: Inactive railroad bridge over New York Avenue NE west of Montana Avenue NE.

New York Avenue NE Tunnel

There is an inactive rail tunnel underneath New York Avenue NE. The easement rights are currently occupied by the Philadelphia, Baltimore, and Washington Railroad Company and are being pursued for easement rights by the Virginia Railway Express ("VRE") for use as part of their Midday Storage Project. The tunnel is a concrete box structure that connects the Union Station railroad yard to tracks east of the tunnel.



Photo 13: Inactive railroad tunnel under New York Avenue NE at 4th Street NE.



Figure 14: Existing Conditions Along Potential Bicycle Routes

DDOT Right of Way

The DDOT right of way width varies along New York Avenue NE within the Project limits. The width of the right of way is 123' from Florida Avenue NE to New York Avenue NE Bridge. From the New York Avenue NE Bridge to Bladensburg Road NE, the width of DDOT right of way for majority of the corridor is 130'. The exception is between 16th Street NE and Montana Circle where it narrows to approximately 112' in front of the Ivy City Inn.

STREET LIGHTING

Street lighting fixtures vary throughout the corridor. Currently there are three different types of street lighting fixtures that exist within Project limits: Cobrahead, Washington Twin-20, and Washington Teardrop. The Cobrahead is the fixture used most commonly throughout the existing corridor. The Washington fixtures occur as the locations where recent construction or redevelopment has been built. See **Figure 15** for existing fixture type locations.



Photo 14: Washington Twin-20



Photo 15: Washington Teardrop



Photo 16: Cobrahead

Fixture Type	Locations
Washington Twin-20	Hampton Inn/Homewood Suites by Hilton 9th Street NE/Mt. Olivet Road NE Intersection Between Fenwick Street NE and 16th Street NE (south side)
Washington Teardrop	Florida Avenue NE Intersection New York Avenue Bridge Fenwick Street NE Intersection Hecht Avenue NE Intersection
Cobrahead	All other locations

Figure 15: Existing Light Fixture Locations

STREET TREES AND LANDSCAPING

There are approximately 115 street trees and inconsistent landscaping along New York Avenue NE. In many cases, tree pits exist but the tree has died and not been replaced. Areas that lack of street trees on the south side are from the 9th Street NE Bridge to Kendall Street NE and from Montana Avenue NE to Bladensburg Road NE. On the north side, there are no street trees from Florida Avenue NE to Kendall Street NE and there is a lack of street trees from Montana Avenue NE to Bladensburg Road NE. Recent redevelopment including 1401 New York Avenue NE and 501 New York Avenue NE, Washington, D.C. have street trees that meet current DDOT standards. Photos to the right give a snapshot of the existing conditions of the landscaping along New York Avenue NE. Taking into consideration the condition of the existing trees and the impact of construction, the trees that will remain have been identified in the tree inventory.

ArcGIS Street Trees in Washington, DC



Figure 16: DDOT UFA Street Trees website was used to identify existing street trees and their condition along New York Avenue NE.



Photo 17: Empty tree pits exist on the north side of New York Avenue NE between Montana Cricle and Bladensburg Road NE.



Photo 18: No tree pits exist at the 9th Street NE Bridge and New York Avenue NE Intersection.



Photo 19: Standard DDOT Streetscape with street trees and existing elms in front of 501 New York Avenue NE, Washington, D.C.

REGIONAL PEDESTRIAN, BICYCLIST, AND TRANSIT CONNECTIONS

Multi-use Trails

The MBT, once complete, will be an eight (8) mile shared use path connecting Silver Spring, Maryland to downtown Washington, D.C. The trail runs along the western edge of the Project area. It is an important part of north-south multimodal connection in the existing trail network. Although there are multiple trail entrance locations that connect into other types of bicycle and pedestrian facilities along the MBT, there is no direct connection for neighborhoods along the Project limits to the trail.

The MBT is grade separated over Florida Avenue NE and M Street NE, and includes at-grade crossings across L Street NE and K Street NE. The trail can be accessed at multiple locations including R Street NE, Florida Avenue NE, and M Street NE. The only existing access from New York Avenue NE is utilizing an existing stairway from the south sidewalk near the intersection at Florida Avenue NE (through the Washington Gateway site).

Cycle Tracks/Protected Bike Lanes

Cycle tracks are an exclusive space on the roadway for bicyclists that are physically separated from the roadway. There are two (2) existing cycle tracks within the Project area. The First Street Cycle Track runs along the east side of First Street NE between Massachusetts Avenue NE and M Street NE, and then continues along the south side of M Street NE from First Street NE to the MBT connection located near the NoMa-Gallaudet U Metro Station. The 6th Street Cycle Track runs along the east side 6th Street NE from M Street NE. See **Figure 17** for limits of existing cycle tracks within the Project area.

Street	Limits
First Street NE	Massachusetts Avenue NE - M Street NE
M Street NE	First Street NE - MBT Delaware Avenue NE - 4th Street NE
4th Street NE	M Street NE - Florida Avenue NE
6th Street NE	Florida Avenue NE - Penn Street NE

Figure 17: Existing Cycle Track/Protected Bike Lanes

Street	Limits
Eckington Place NE	Florida Avenue NE - R Street NE
Harry Thomas Way NE	Eckington Place NE - R Street NE
R Street NE	Eckington Place NE - 3rd Street NE
2nd Street NE	R Street NE - Rhode Island Avenue NE
3rd Street NE	R Street NE - Rhode Island Avenue NE
4th Street NE	Florida Avenue NE - M Street SE
6th Street NE	Florida Avenue NE - Virginia Avenue SE
G Street NE	2nd Street NE - Maryland Avenue NE
M Street NE	Florida Avenue NE - 4th Street NE
18th Street NE	Montana Avenue NE - Irving Street NE

Figure 18: Existing Conventional Bike Lanes

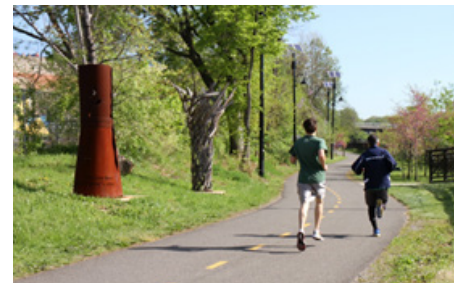


Photo 20: MBT



Photo 21: M Street NE Cycle Track

Conventional Bike Lanes

Bike lanes are an exclusive space on the roadway for bicyclists designated through the use of pavement markings and signage. There are numerous locations within the Project limits where conventional bike lanes are present, including: Eckington Place NE, Harry Thomas Way NE, R Street NE, 2nd Street NE, 3rd Street NE, 4th Street NE, 6th Street NE, G Street NE, M Street NE, and 18th Street NE. See **Figure 18** for the limits of the existing bike lane locations within the Project Area. The typical application is a 5' bike lane directly adjacent to a travel lane.

Shared Lanes

Shared lane markings (SLMs) are road markings used to designate an environment where a travel lane is shared between bicycles and automobiles. Within the Project study area, 2nd Street NE/ Delaware Avenue NE, G Street NE, I Street NE, and R Street NE utilize SLM. See **Figure 19** for the limits of the existing Shared Lanes within the Project Area.

Street	Limits
2nd Street NE/Delaware Avenue NE	L Street NE - F Street NE
G Street NE	2nd Street NE - Maryland Avenue NE
I Street NE	2nd Street NE - Maryland Avenue NE
M Street NE	Delaware Avenue NE- Florida Avenue NE
R Street NE	Florida Avenue NE-Eckington Place NE

Figure 19: Existing Shared Lanes

Street	Limits
West Virginia Avenue NE	Florida Avenue NE - New York Avenue NE
Montana Avenue NE	New York Avenue NE- W Street NE

Figure 20: Existing On-Street Signed Bike Route



Photo 22: Bike Lanes along 4th Street NE



Photo 23: Shared Lane Markings

On-Street Signed Bike Routes

DDOT designates certain streets as on-street bicycle routes with signage. Within the Project limits, West Virginia Avenue NE and certain stretches of Montana Avenue NE are designated as an On-Street Bicycle Route. See **Figure 20** for the limits of the existing On-Street Signed Bike Routes.

Design Challenges

Pinch Points were identified along the corridor. A street's pinch point is any location where the minimum continuous and unobstructed clear width of a pedestrian access route is not provided within the existing ROW, or is obstructed by a physical constraint. DDOT Design and Engineering Manual defines the minimum width of a sidewalk as 4' exclusive of the width of the curb. A total of 71 pinch point were identified and used to develop the inventory of non-compliant sidewalks as shown in **Appendix A**. Many of these pinch points were identified where the existing lighting fixture's locations reduce overall width of the sidewalk, particularly at the recently constructed intersection at New York Avenue NE and 9th Street NE Bridge. Additionally, the sidewalk width is limited on the existing New York Avenue NE Bridge layout and accommodates a 5' width for sidewalk. Pinch points cannot comfortably accommodate both bicycles and pedestrians without creating conflicts.

An additional hindrance to bicycle and pedestrian circulation are the numerous curb cuts along the corridor, some of which do not connect to an existing driveway. **Figure 16 (page 22)** shows existing conditions along potential bicycle routes.

Bus and Transit

Bus and WMATA Metrorail service exist within the Project area, but there is not continuous east-west bus and transit along New York Avenue NE from Florida Avenue NE to Bladensburg Road NE. Metrorail service to the NoMa-Gallaudet New York Avenue NE Station at the west end Project limits is the sole access point to the Metrorail.

The Project area has limited existing bus service and no bus stops directly on New York Avenue NE. Bus routes exist along New York Avenue NE from eastbound Fenwick Street NE to 16th Street NE. There are five (5) bus routes that cross New York Avenue NE with four (4) bus routes that have stops near these crossing locations. A Transit Assessment was conducted as part of the Project and can be found in **Appendix H**.

PUBLIC AND STAKEHOLDER ENGAGEMENT

SECTION 3



Photo 24: Public Meeting #3, June 29, 2017.

PUBLIC AND STAKEHOLDER ENGAGEMENT

A primary goal of the New York Avenue NE Streetscape and Trail Project was to develop a project that was based on input from the local community. DDOT, in conjunction with the Project team, developed a plan that included identifying stakeholders and proactively engaging with the community. To effectively manage stakeholder outreach and engagement, three (3) groups were identified to better focus discussions and activities around issues specific to their concerns: (a) District Government Agencies (Interagency), (b) Community Advisory Group (CAG) which includes elected community leaders such as ANC Commission Chairs and representatives of the Bicycle and Pedestrian Advisory Councils, and (c) residents and the general public. Throughout the length of the Project, outreach took the form of: four (4) public meetings, four (4) interagency meetings, two (2) public engagement events (pop-up events), and one (1) Community Advisory Group (CAG) meeting.

Public meetings were developed with the intent of engaging participants in identifying ideas and gathering suggestions to create a cohesive streetscape and trail design, with safety improvements along the corridor. The Project included an analysis of potential trail connections. The format of these events provided the community with an opportunity to learn about the Project, speak directly to DDOT and the Project team, ask questions, and offer input. The interagency meetings, scheduled and facilitated by DDOT, informed District agencies about the Project, and provided the

<p>Community Advisory Group:</p> <ul style="list-style-type: none"> • ANC 5C Chairperson – Jacqueline Manning • ANC 5E Chairperson – Bradley Thomas • ANC 5D Chairperson – Clarence Lee • Tom Bridge, Ward 5 Member, D.C. Bicycle Advisory Council • Moira McCauley, Ward 5 Member, D.C. Pedestrian Advisory Council 	<p>Agencies:</p> <ul style="list-style-type: none"> • Amtrak • Department of Energy and Environment • D.C. Water • DDOT • Virginia Railway Express • WMATA
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Figure 21: Members of the Community Advisory Group and Participating Agencies

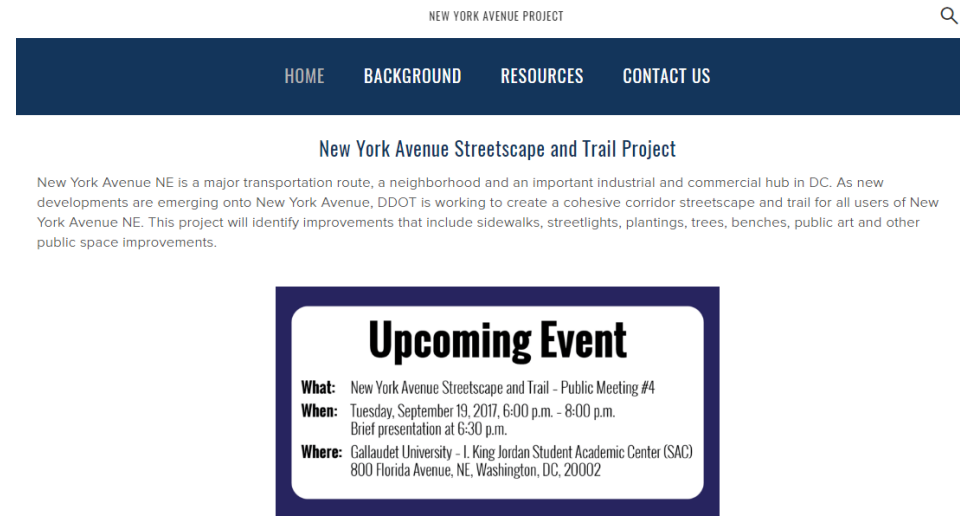


Photo 25: Screen shot of the Project website: www.newyorkavenueproject.com

opportunity to receive their feedback and comments as related to planned projects or improvements located within and/or adjacent to the DDOT Project limits. The CAG meeting was a stakeholder meeting that provided an opportunity for discussions and coordination related to Project design impacts and initial impressions from community leaders on the design. The pop-up events provided an additional opportunity to inform and receive additional feedback from the community.

A web site was created for the Project: www.newyorkavenueproject.com. The website includes an overview of the Project including Project study area map, a schedule for the Project, and public meeting summary documents. Residents, stakeholders, and interested parties were provided an opportunity to give feedback via online surveys, an interactive map, and through a Project notification list that provided Project updates.

In total, the Project had four (4) public meetings that were held throughout the Project corridor. Each Interagency Meeting was held prior to the public meeting. The Interagency Meeting hosted members of internal

and external staff and included: DDOT transit, signals, traffic operations, safety, urban forestry, green infrastructure, and active transportation staff. Officials from the Office of Planning, Department of Energy and Environment, Transportation Operations Administration, D.C. Water, Amtrak, VRE, and WMATA were also included at the Interagency Meeting. The Interagency Meeting was the opportunity for the Project Team to examine the Project design with technical internal and external staff prior to the public meeting to obtain feedback and initial impressions regarding the Project's design prior to presenting the design to the public.

PUBLIC MEETING #1

Public Meeting #1 was held on Thursday, February 23, 2017 from 6:00 pm – 8:00 pm at the I. King Jordan Student Academic Center (SAC) at Gallaudet University located at 800 Florida Avenue NE, Washington, D.C. The purpose of the meeting was to introduce the Project to the community and stakeholders as well as explain the engagement process.

The meeting was set-up in an open-house style format to inform and engage the community and encourage comments and suggestions that would help to develop conceptual design recommendations as the Project moved forward. The public meeting displays consisted of corridor exhibits and interactive activities. DDOT gave a brief presentation about the Project goals and Project schedule, and a description of each Project station. The Project Team engaged attendees and answered questions at meeting board stations and Project area roll maps. Results from public input at the meeting is shown in the charts to the right on this page.

All Public Meeting #1 Display Materials can be seen at www.newyorkavenueproject.com and the Public Meeting #1 Summary Report can be seen in **Appendix B**.

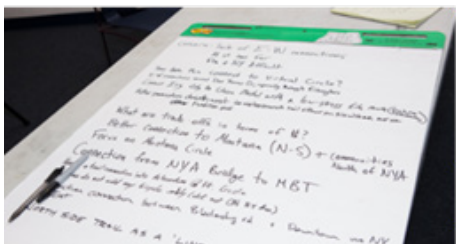


Photo 26: Public comment board from Public Meeting #1.



Photo 27: Interactive boards were used to allow stakeholders to provide input.



Photo 28: Engaging the public about draft concepts for New York Avenue NE.



Photo 29: Residents review draft concepts at the Holiday Inn Express.

PUBLIC MEETING #2

Public Meeting #2 was held on Thursday, April 27, 2017 from 6:00 pm – 8:00 pm at the Holiday Inn Express located at 1917 Bladensburg Road NE, Washington, D.C. The purpose of this meeting was to share the initial streetscape and trail design concept alternatives and provide an opportunity for community stakeholders to provide feedback.

The meeting was set-up in an open house style format to inform and engage the community and encourage comments and suggestions that would help to select a preferred concept design. The meeting display materials consisted corridor exhibits and attendees were given a survey highlighting the concepts shared during the meeting to gain additional insight on community preferences. The Project Team engaged attendees and answered questions at Project boards.

All Public Meeting #2 Display Materials can be viewed at www.newyorkavenueproject.com and the Public Meeting #2 Summary Report can be seen in **Appendix C**.

PUBLIC ENGAGEMENT EVENT #1

The first public engagement event was held on-site on New York Avenue NE on May 20, 2017 from 9:00 am – 12:00 pm. The Project team set up a tent at the following locations:

- Bladensburg Road/New York Avenue NE;
- Montana Avenue/New York Avenue NE; and
- Mount Olivet/9th Street/New York Avenue NE.

Project Team representatives facilitated dialogues with corridor residents and stakeholders to discuss existing challenges and potential solutions to the initial streetscape and trail improvement concepts shared during Public Meeting #2. Comment and survey forms were provided to stakeholders to capture their concerns and feedback.

The Public Meeting #2 Summary Report contains details on both Public Meeting #2 and Public Engagement Event #1 and can be seen in **Appendix C**.



Photo 30: Project Team members engaging the public on-site at the New York Avenue NE and Bladensburg Road NE intersection.



Photo 31: Public Meeting #3 display boards at REI.

PUBLIC MEETING #3

Public Meeting #3 was held on Thursday, June 29, 2017 from 6:00 pm – 8:00 pm at the REI located at 201 M Street NE, Washington, D.C. The purpose of the meeting was to share the selected preferred streetscape and trail concept developed by the Project Team and to provide an opportunity for community stakeholders to provide feedback.

The meeting was set-up in an open-house style format to inform and engage the community and encourage comments and suggestions that would help to modify the preferred conceptual design as the Project continued to move forward. The meeting display materials consisted of Project boards that displayed the preferred concept over an aerial background.

The Project Team engaged attendees and answered questions at Project boards. DDOT representatives gave a presentation to the public about the history of the Project and the steps that were taken to get to the preferred concept. All Public Meeting #3 Display Materials can be seen at www.newyorkavenueproject.com and the Public Meeting #3 Summary Report can be seen in **Appendix D**.

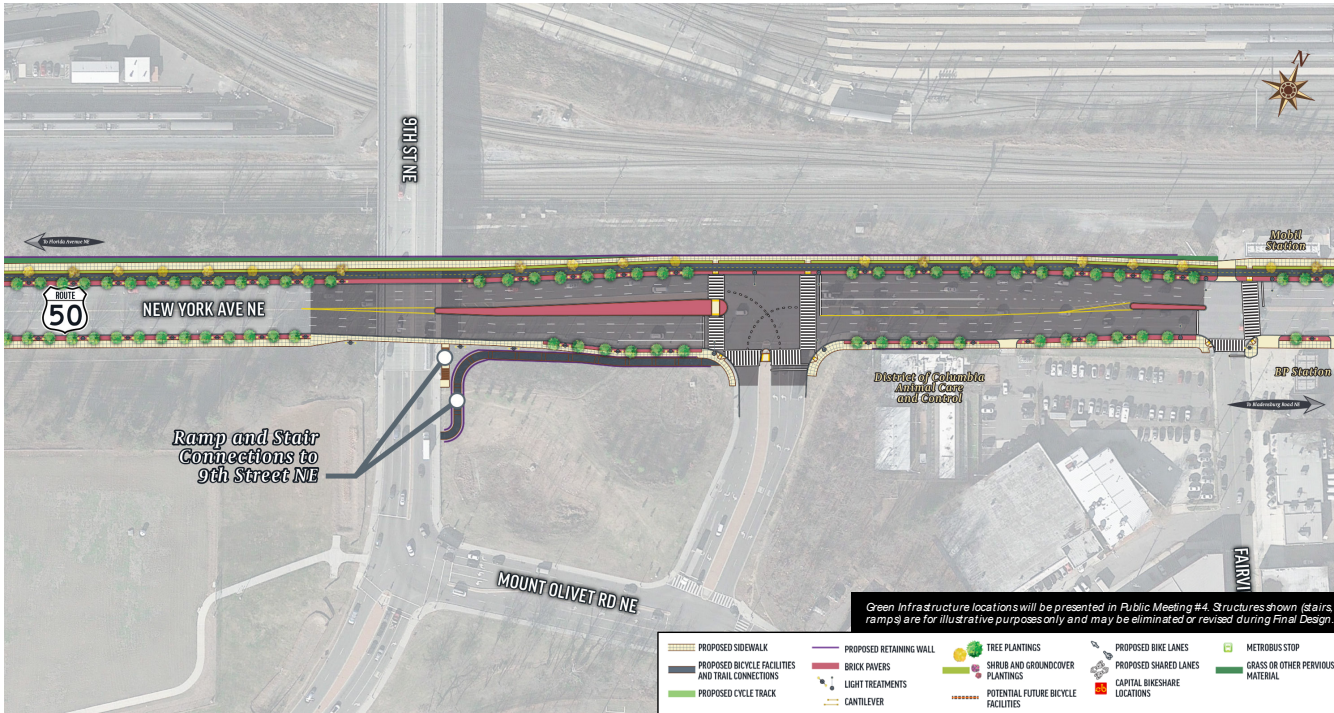


Figure 22: Presentation board graphics for the New York Avenue NE Street Bridge to Fairview Avenue NE.

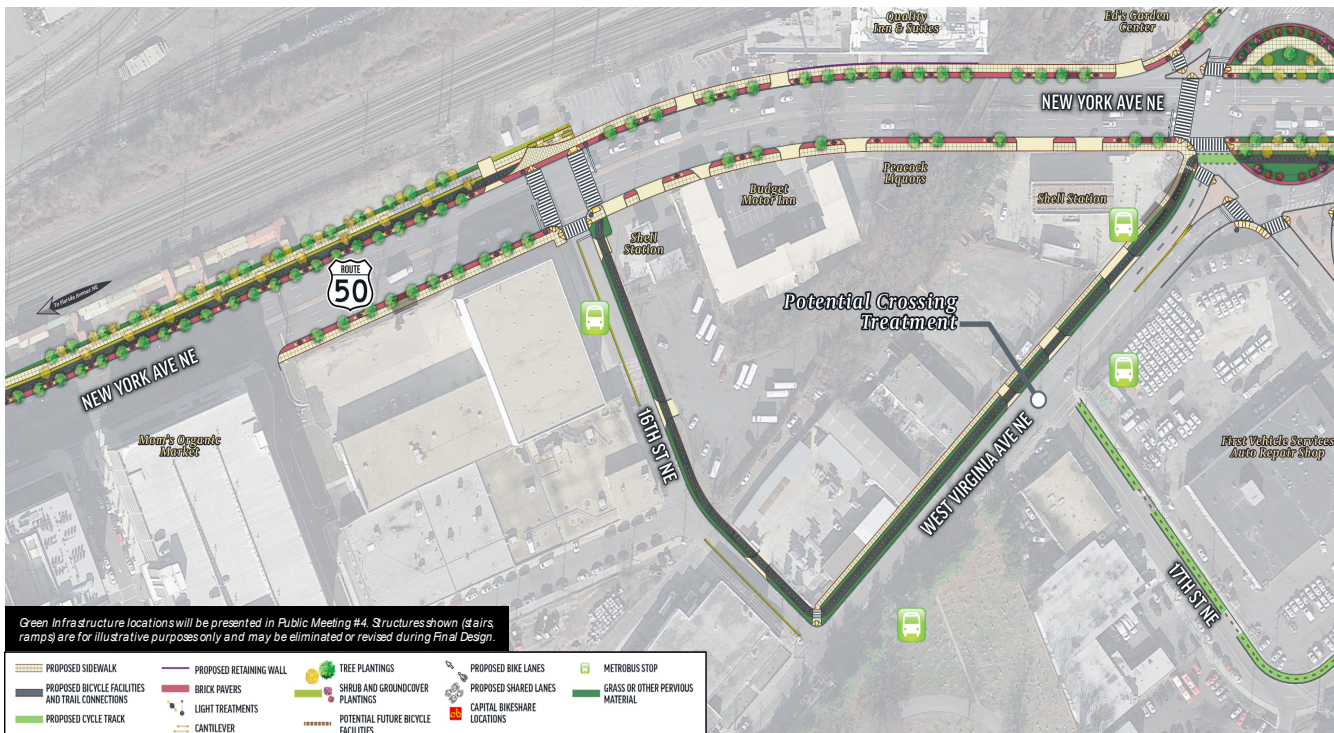


Figure 23 Presentation board graphics for the New York Avenue NE from Hecht Warehouse Area to Montana Avenue NE.

PUBLIC ENGAGEMENT EVENT #2

The second public engagement event was held August 19, 2017 from 10:00 am – 1:00 pm at Union Market located near the western-end of the Project corridor. This event focused on creating awareness of the Project and allowing for stakeholders to provide additional comment and feedback.

Project Team representatives facilitated dialogues with corridor residents and stakeholders to discuss the preferred streetscape and trail concept design shared during Public Meeting #3. Comment and survey forms were provided to stakeholders to capture their concerns and feedback.

The Public Meeting #3 Summary Report contains details on both Public Meeting #3 and Public Engagement Event #2 and can be seen in **Appendix D**.



Photo 32: Public Engagement Event #2 at Union Market.

PUBLIC MEETING #4

Public Meeting #4 was held on Tuesday, September 19, 2017 from 6:00 pm – 8:00 pm at Gallaudet University's I. King Jordan Student Academic Center (SAC) located near the middle of the corridor Project limits. The purpose of the meeting was to share the draft preliminary design streetscape and trail concept developed by the Project Team and to provide an opportunity for community stakeholders to provide feedback.

The meeting was set-up in an open-house style format to inform and engage the community and encourage comments and suggestions about the Project design. The meeting display materials included Project area boards that displayed the draft preliminary design over an aerial background.

The Project Team engaged with attendees and answered questions at Project boards. DDOT representatives gave a presentation to the public about the history of the Project and the steps that were taken to get to the preferred concept. All Public Meeting #4 Display Materials can be seen on the Project's web site. The Public Meeting #4 Summary Report can be seen in **Appendix E**.



Photo 33: Public Meeting #4 at Gallaudet University.

Concept 1 - North Side Raised Cycle Track and Separated Sidewalk

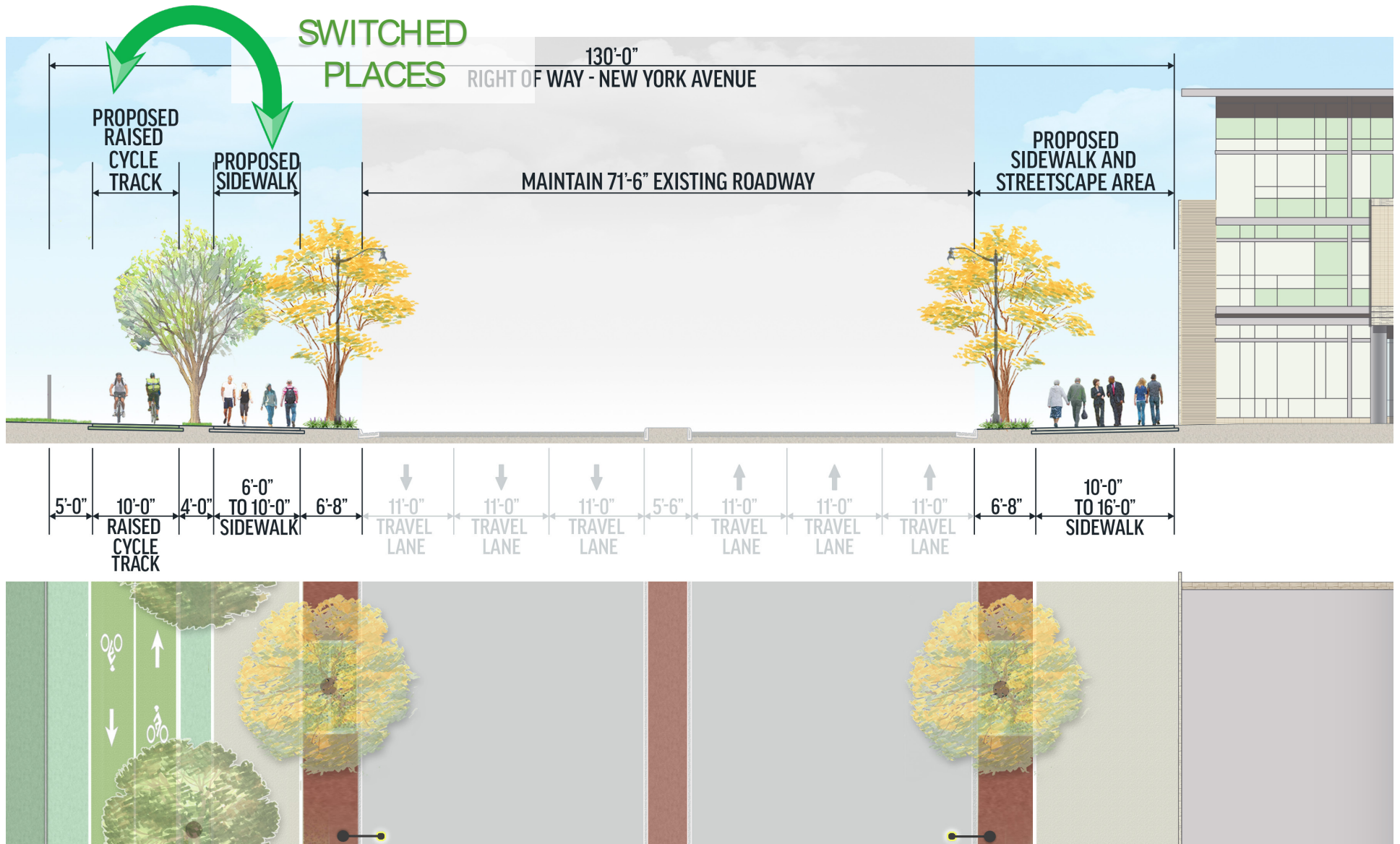


Figure 24: The major change in the preferred concept design from Public Meeting #3 to Public Meeting #4 was switching the locations of the north side cycle track and sidewalk.

DEVELOPMENT OF CONCEPTS

SECTION 4

DESIGN PROCESS

A year-long, four (4) stage design process began in October 2016 to:

1. Gather information on existing conditions and needs;
2. Develop design concepts with the Project stakeholders;
3. Select and refine the preferred concept; and
4. Begin the preliminary design of selected concept.

The stages and associated details are described below.

Existing Conditions and Needs Assessment (October 2016 – February 2017)

This phase of the Project included assessment of the existing conditions along New York Avenue NE by the Project Team. The team performed site visits to become more familiar with the site conditions and constraints, identify Project features that may impact Project design, and identify any

other major issues. To document the existing conditions, the Project Team collected field data to develop a topographic survey, property boundary survey, and mapping of the existing utility information. The Project Team also developed display materials to define the existing land use; existing pedestrian, bicycle, and vehicular circulation; and existing materials and site amenities.

The Project Team performed a technical analysis of available material on background studies, long range planning recommendations, and information on development Projects within the corridor, including but not limited to:

- New York Avenue NE Rail-with-Trail: Linking Northeast Washington, D.C. (2015);
- Ward 5 Works (2014);
- moveD.C. (2014);
- New York Avenue NE Green Infrastructure Assessment (2011);

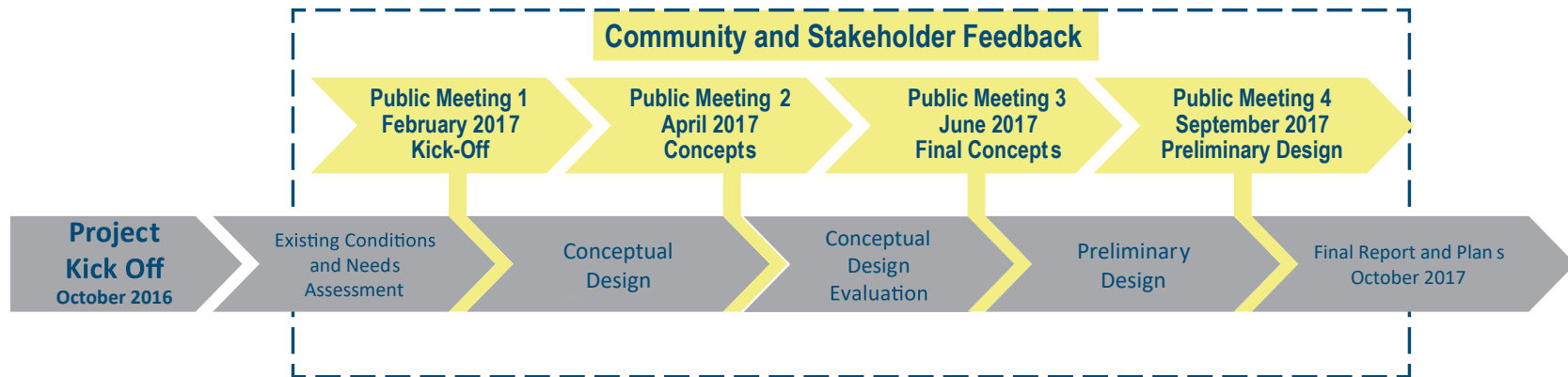


Figure 25: Project Timeline

- Florida Avenue Market Study (2009); and
- District of Columbia Bicycle Master Plan (2005).

Once the existing conditions were well-defined, the Project Team assessed the needs of the Project area by identifying destinations within the corridor, defining potential bicycle route options and evaluating the existing conditions along these routes as well as reviewing all applicable design guidelines (see **Appendix F** for Design Criteria).

A Communications Plan was established to set guidelines and outreach criteria for the identification of stakeholders, engagement of the community, development of the Project website, coordination with stakeholders and the community, and scheduling of public meetings and events. This included developing a Project-specific campaign and branding with a Project logo.

Development of Concepts (February 2017 – April 2017)

This phase of the Project included the development and evaluation of four (4) design concepts for the Project area. The features and themes of these concepts were established based on the feedback of what a successful streetscape and trail Project would be from the first Interagency Meeting and Public Meeting #1.

All concepts met DDOT standards, included streetscape improvements along New York Avenue NE, and included bicycle accommodations that created a trail route from the NoMa-Gallaudet U Metro Station to the U.S. National Arboretum. Each concept was evaluated for achieving the Project goals, the quality of user experience, construction and maintenance costs, and environmental, utility, and property impacts. Crime Prevention Through Environmental Design (CPTED) principles, as described in the Preferred Design Concept section of this report, were incorporated into the design concepts.

This phase of the Project also included design development for trail connections as described in the Trail Connections section of this report. These four (4) concept alternatives were presented at the second Interagency Meeting and Public Meeting in April 2017.

Selection and Refinement of Concepts (April 2017 – June 2017)

This phase of the Project included the selection and refinement of a preferred concept. Concept 1, raised cycle track and sidewalk improvements, was selected as the preferred concept. The design was based on analysis of opportunities and challenges by the Project Team and on feedback received at the second Interagency Meeting and Public Meeting #2.

Preliminary Design of Selected Concept (June 2017 – October 2017)

This phase of the Project included preparation of the preliminary design, preparation of engineering drawings, preparation of a cost estimate, and development of a construction phasing plan.

The Project Team prepared drafts of necessary for environmental and stormwater management documentation and revised the drafts per coordination and direction from the appropriate agencies. The report you are reading was developed during this phase to document the entire design process.

Design Concept Summary and Analysis

Concept 1 featured improved pedestrian facilities on the south side and separated pedestrian and bicycle facilities on the north side of New York Avenue NE (See **Figure 26**). Bicyclists would have a defined, uninterrupted pathway to travel alongside New York Avenue, while pedestrians would have a separate sidewalk facility on both the north and south side of New York Avenue. The north side sidewalk and bicycle facilities would be buffered from both the roadway and from each other. All sidewalks would meet DDOT standards and include a width of 6' to 10' on the north side and 6' to 16' on the south side.

Concept 1 placed the most emphasis on the safety of all transportation users, and enhanced aesthetics by providing the following opportunities:

- Separate facilities for bicyclists and pedestrians to eliminate potential conflicts between these users.
- Visual landscape buffer from New York Avenue NE for both.
- Lighting opportunities to increase awareness for all users.

Concept 2 featured pedestrian facilities on the south side and a combined pedestrian and bicycle facility on the north side of New York Avenue NE (See **Figure 27**). Pedestrians on the south side, where perhaps more foot traffic could be expected, would have a separate sidewalk facility, while bicyclists and pedestrians on the north side would share space. The north side shared use facility would be buffered from the roadway. The south side sidewalk would meet DDOT standards and include a width of 6' to 16'. Open space would be available for public use, north of the shared use path.

Concept 2 placed emphasis on safety and open space by providing the following opportunities:

- Greater opportunities for open/green space created on the north side of the New York Avenue NE right of way.
- Visual landscape buffer from New York Avenue NE for both pedestrians and cyclists to create separation from roadway traffic.
- Lighting opportunities to increase awareness for all users.

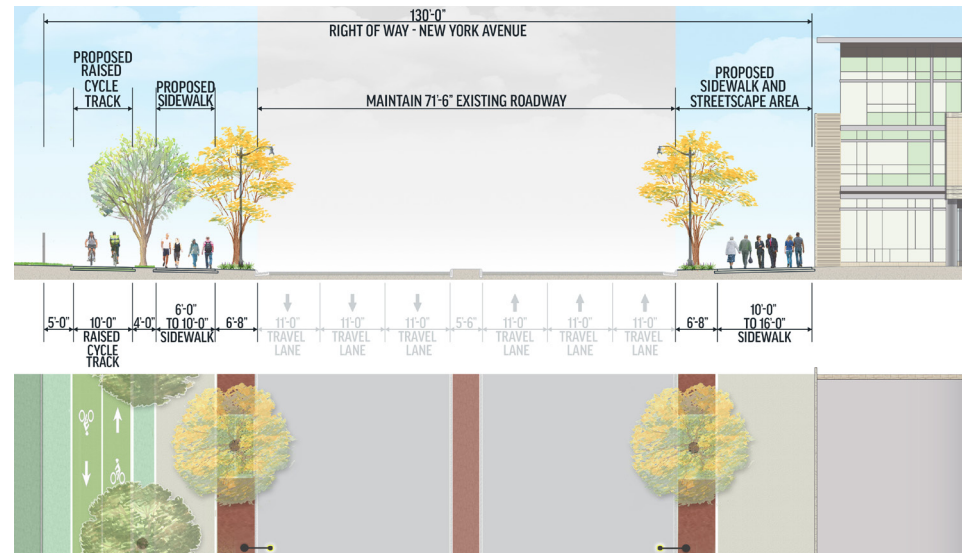


Figure 26: Concept 1 – Raised Cycle Track and Sidewalks

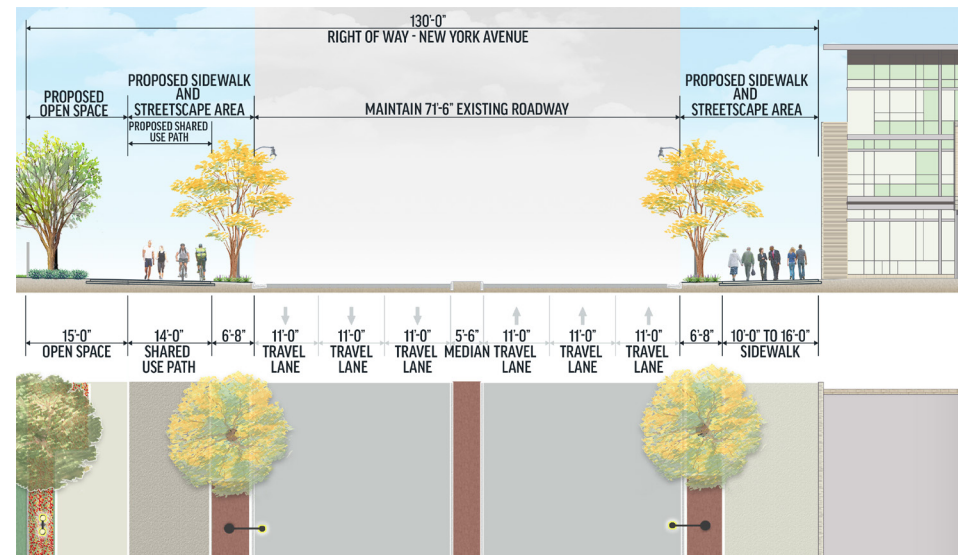


Figure 27: Concept 2 – Shared Use Path and Sidewalk

Concept 3 featured pedestrian facilities on the north side and separated pedestrian and bicycle facilities on the south side of New York Avenue NE (See **Figure 28**). This concept would require New York Avenue NE to be shifted to the north up to 11', to accommodate the cycle track along the south side curb line of the existing roadway. The roadway reconfiguration would require extensive roadway construction, signal pole relocations, lighting pole relocations, and extensive maintenance of traffic during construction. Pedestrians would have a separate sidewalk facility on both the north and south side of New York Avenue that would be buffered from the roadway. All sidewalks would meet DDOT standards and include a width of 6' to 10' on the north side and 6' to 16' on the south side. Open space would be available for planting to the north of the north side sidewalk.

Concept 3 placed emphasis on providing connections to businesses and neighborhoods along New York Avenue NE by providing the following opportunities:

- Creating a direct connection from bicycle facilities along New York Avenue NE to businesses and neighborhoods along the south side of the corridor without requiring a crossing of New York Avenue NE traffic.
- Increasing opportunities for open/ green space created on the north side of the New York Avenue NE right of way.

Concept 4 featured proposed sidewalks on both the north and south side but did not feature any bicycle facility design along New York Avenue (See **Figure 29**). Pedestrians would have a separate sidewalk facility on both the north and south side of New York Avenue that would be buffered from the roadway. All sidewalks would meet DDOT standards and include a width of 6' to 10' on the north side and 6' to 16' on the south side. Open space to the north of the proposed sidewalk could be available for public use. Concept 4 would include bicycle accommodations along roadways off New York Avenue that will create a trail route from the NoMa-Gallaudet U Metro Station to the U.S. National Arboretum.

Concept 4 placed emphasis on the streetscape of New York Avenue NE by the providing the following opportunities:

- Greatest opportunities for open/ green space created on the north side of the New York Avenue NE right of way.
- Visual landscape buffer from New York Avenue NE for pedestrians to create consistent aesthetic design.
- Placing bicycle facilities off New York Avenue NE.

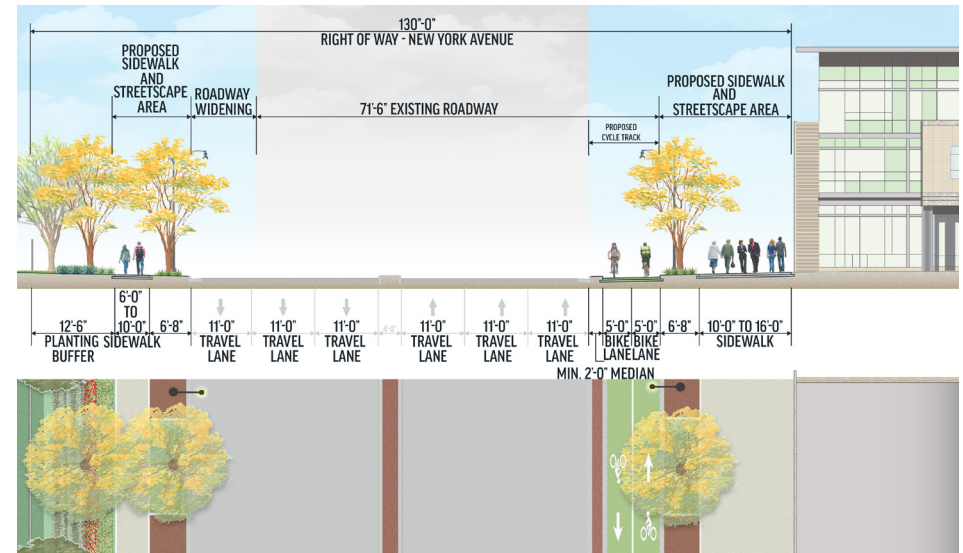


Figure 28: Concept 3 – Cycle Track and Sidewalks

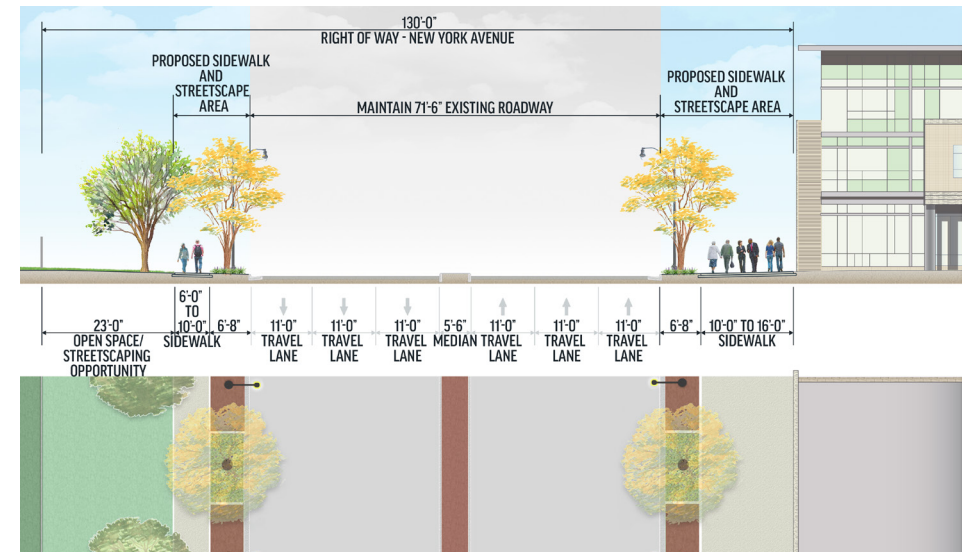


Figure 29: Concept 4 – Sidewalks and Streetscape Only

New York Avenue NE Trail

The scope of the Project included the development of a multi-use trail alignment from the NoMa-Gallaudet U Metro Station to the U.S. National Arboretum. Concepts 1 through 3 (**Figures 26, 27, and 28**) included bicycle facilities along New York Avenue NE for a large stretch of the corridor. Concept 1 and 3 propose the use of cycle tracks which are bicycle facilities that are physically separated from pedestrian and automobile traffic. Concept 2 proposes a multi-use trail that mixes pedestrians and bicyclists on the trail, while being separated from automobile traffic. Pinch Points created by existing infrastructure and the desire to avoid impacts to traffic operations along the congested New York Avenue NE corridor required that bicycle facilities be located along and in streets south of New York Avenue NE within the Project limits. Concept 4 (**Figure 29**) does not include any bicycle facilities along New York Avenue NE and the design relies on an off New York Avenue NE bicycle route to connect the east and west ends of the Project area.

Bicycle facilities are proposed along New York Avenue NE in Concepts 1 through 3 between 4th Street NE and 16th Street NE. On the east end of the Project limits, the existing DDOT right of way and existing development constraints do not permit a full build out of the proposed bicycle and streetscape design from 16th Street NE to Bladensburg Road NE. As a result, Concepts 1 through 3 propose a bicycle route off New York Avenue NE to connect the alignment of the New York Avenue NE Raised Cycle Track to the National Arboretum.

The existing New York Avenue NE Bridge over the railroads and the MBT constrains the ability to maintain or augment the existing 5' sidewalk design across the bridge. Physical separation between bicycles and motor vehicles is a goal in all concept designs, but augmenting the existing bridge to create an improved streetscape and trail design is challenging because of the design of the bridge structure.

Off New York Avenue NE Bicycle Route

To form a connected bicycle route between NoMa-Gallaudet U Metro Station and the U.S. National Arboretum, it is necessary to utilize roadways other than New York Avenue NE. To determine how bicycle connections would be possible, the Project Team examined existing and planned bicycle facilities within the Project limits, explored possible bicycle routing that utilized existing and proposed facilities and designed connection from the east to the west end of the Project.

The existing and planned bicycle facilities within the Project study area include:

Existing Bicycle Facilities

- 4th Street Cycle Track south of Florida Avenue NE.
- 6th Street Conventional Bike Lanes south of Florida Avenue NE.
- 6th Street Cycle Track from Florida Avenue NE to Penn Street NE.

Planned Bicycle Facilities

- Florida Avenue Cycle Track and Shared Use Path from 2nd Street NE to West Virginia Avenue NE.
- Continuation of First Street Cycle Track from M Street NE north to Eckington Place NE and Florida Avenue NE.
- West Virginia Avenue Conventional Bike Lanes from Florida Avenue NE to Corcoran Street NE.
- M Street Cycle Track from 2nd St NE to Florida Ave NE.
- Alley cycle track in Union Market.

Figures 31, 32, and 33 illustrates three (3) different types of bicycle facilities proposed in the neighborhoods of south of New York Avenue NE to complete the alignment of the trail within the Project limits: (1) cycle track/protected bike lane, (2) trail, and (3) shared lane. Descriptions of each of these facility types are provided in the Existing Pedestrian, Bicycle, and Vehicular Circulation in **Section 2** of this report.

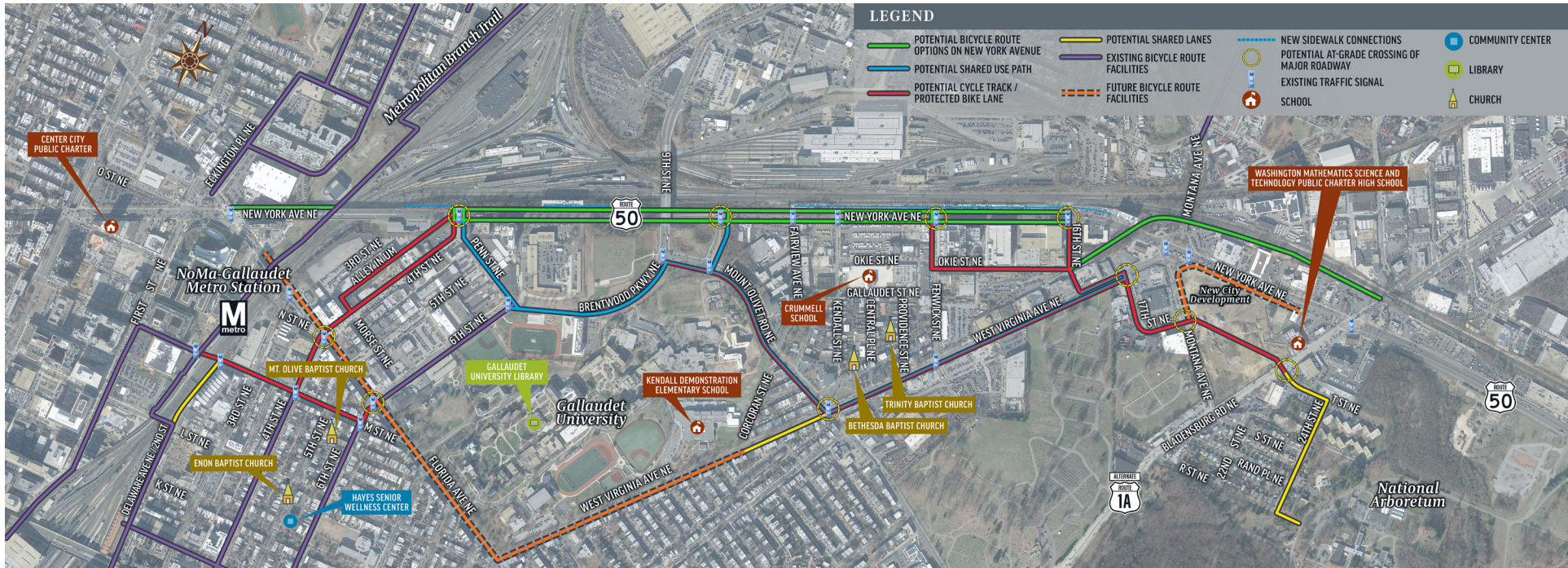


Figure 30: Potential Bicycle Accommodation Routes

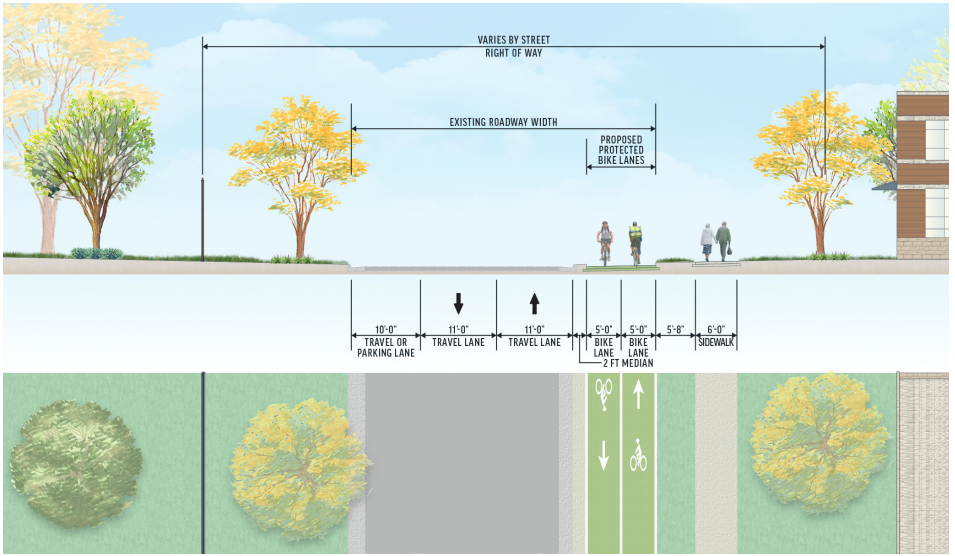


Figure 31: Cycle Track/Protected Bike Lane

Cycle Track/Protected Bike Lane

Cycle tracks were considered on M Street NE, 4th Street NE, Mount Olivet Road NE, West Virginia Avenue NE, Fenwick Street NE, Okie Street NE, 16th Street NE, and 17th Street NE. Roadways with a cycle track would require replacing an existing travel or parking lane with a two-way bicycle facility as shown in the **Figure 31**.

Where the bicycle facilities exist, the exact dimensions of the vehicle lanes would vary, depending on the width of the existing roadway. The advantage of a cycle track is that it separates bicyclists and pedestrians from each other and protects bicyclists from roadway traffic with a concrete median. The separation of the modal users minimizes potential conflicts. The physical barrier in the cycle track design is the potential impacts to existing travel or parking lanes.

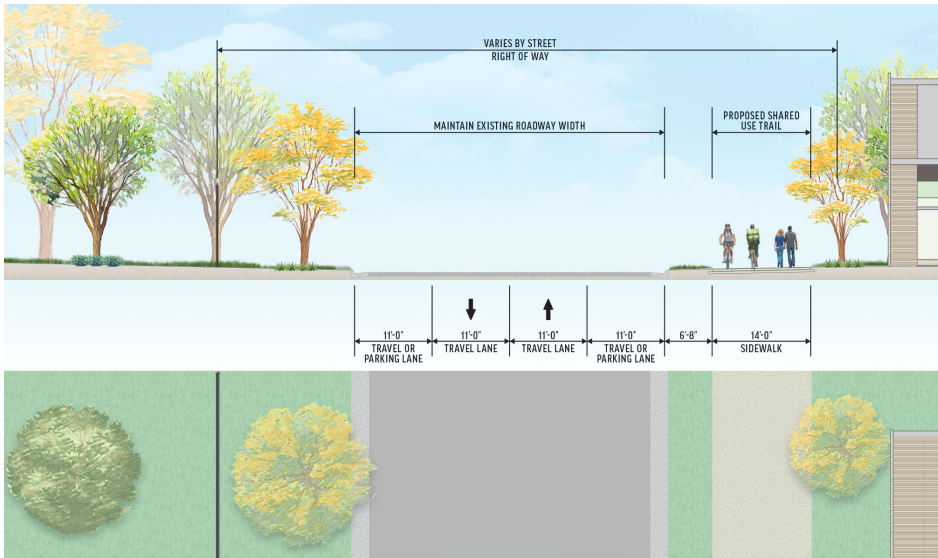


Figure 32: Shared Use Path or Trail

Shared Use Path

Shared Use Paths were considered along Penn Street NE, Brentwood Parkway NE, Mount Olivet Road NE, and West Virginia Avenue NE. Roadways with a trail are designed to maintain the existing roadway as it functions today (no impacts between the curbs), with a bicycle facility built behind the curb as shown in **Figure 32**.

The width of the trail would vary depending on the available space. The advantages to a trail create minimal impacts to the existing roadway operations and possibility of corridor greening to provide buffer from roadway. The disadvantages of a shared use path are the potential for conflicts between cyclists and pedestrians on the trail in high volume areas, and greater costs and construction impacts.

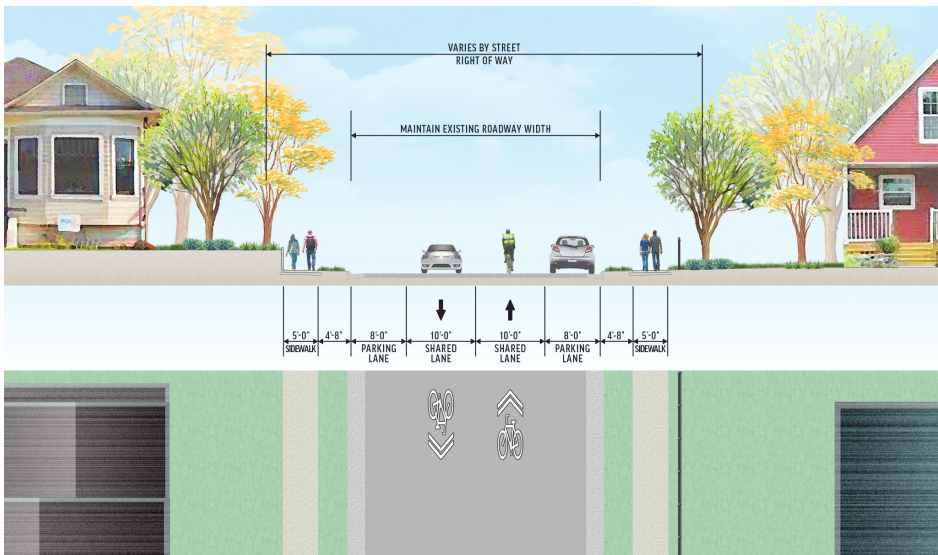


Figure 33: Shared Lane

Shared Lane

Shared Lanes were considered along 4th Street NE, T Street NE, 24th Street NE, R Street NE, and short sections of West Virginia Avenue NE. Roadways with shared lanes are designed to utilize pavement markings to convert existing travel lanes to shared lanes as shown in **Figure 33**. The advantages of shared lanes are no impacts to the existing travel or parking lanes and no conflicts between cyclists and pedestrians. The disadvantage to the shared lanes are potential conflicts between cyclists and motor vehicles. The goal was to minimize the use of shared lanes and only implement on low-volume, low-speed, residential streets to minimize the safety concern for cyclists traveling within the roadway.

Trail Connections

Creating access points to New York Avenue NE from existing trails and adjacent neighborhoods is a goal of the Project and was a theme identified as part of public feedback. Within the Project limits, there are no grade-separated crossings of New York Avenue NE and no clear bicycle connections to the MBT or to neighborhoods to the north. During the Design Concept phase of this Project, the Project Team examined solutions to solve these problems.

Connections to MBT

As stated, there is no clear connection to the MBT from the Project area. The Project Team investigated several opportunities to provide a connection from New York Avenue NE to the MBT with the main challenge being the difference in vertical elevation. At the point where they cross, the New York Avenue NE Bridge (elevation of 110') is approximately 42' higher than the MBT (elevation of 68'). There is future development scheduled along the south side of New York Avenue NE that limits the connection to a set of stairs, which does not meet ADA requirements. There may be more space available on the north side to provide a trail (ADA-compliant) connection, although it would require impacts to private property.

Connections that were studied include various ADA-compliant ramp alignments, both with and without landings, and utilized property owned by the Potomac Electric Power Company (PEPCO) and the Federal Express Corporation (Fed Ex). The preferred connection is a ramp constructed along the north side retaining wall that supports New York Avenue NE Bridge, and is on both the Fed Ex and PEPCO properties. By using the two parcels, it allows for a shorter and continuous ramp to be constructed between New York Avenue NE and MBT (See **Figure 34**). A ramp connection, solely constructed on the PEPCO property, would require a longer ramp alignment and a more complex design for the retaining wall structure. The alternative to these new proposed connections is an on-street route. This route would include using the proposed shared lanes along 4th Street NE from New York Avenue NE to Morse Street NE, where the 4th Street NE cycle track then continues to M Street NE. Heading west along M Street NE cycle track, the connection to the MBT can be made at the NoMa-Gallaudet Metro Station.

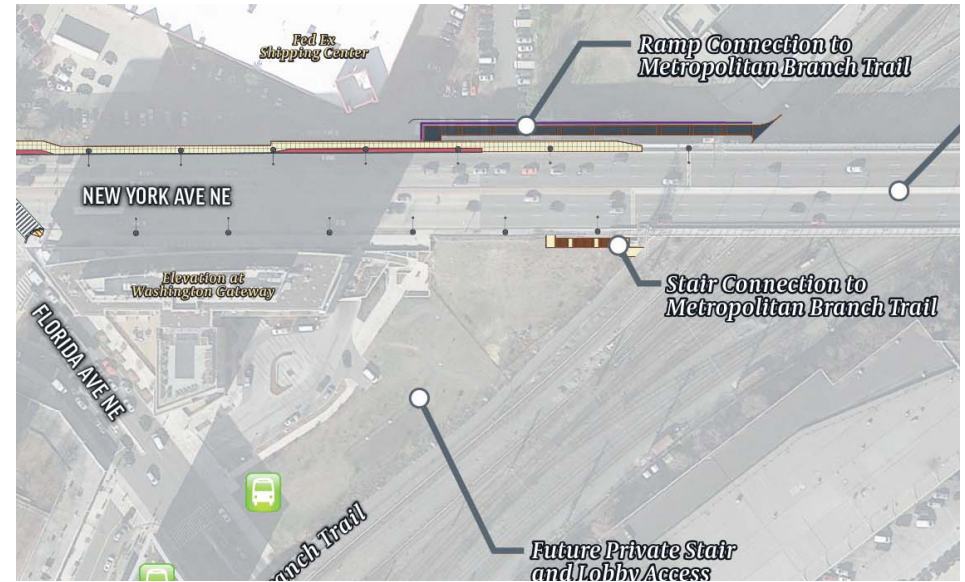


Figure 34: Proposed ramp and stair connection to MBT from New York Avenue NE.

Neighborhood Trail Connections

The Project Team also explored opportunities to provide trail connections to neighborhoods to the north of the Project area, including the Brentwood and Fort Lincoln neighborhoods. Because the rail lines to the north act as a barrier between the New York Avenue NE corridor and the neighborhoods to the north, the Project Team developed design options to increase the potential for access to these neighborhoods through ramps and stairs to promote connections between areas with topographical challenges. Ramps and stairs are proposed at the 9th Street NE Bridge. See **Figure 35**.

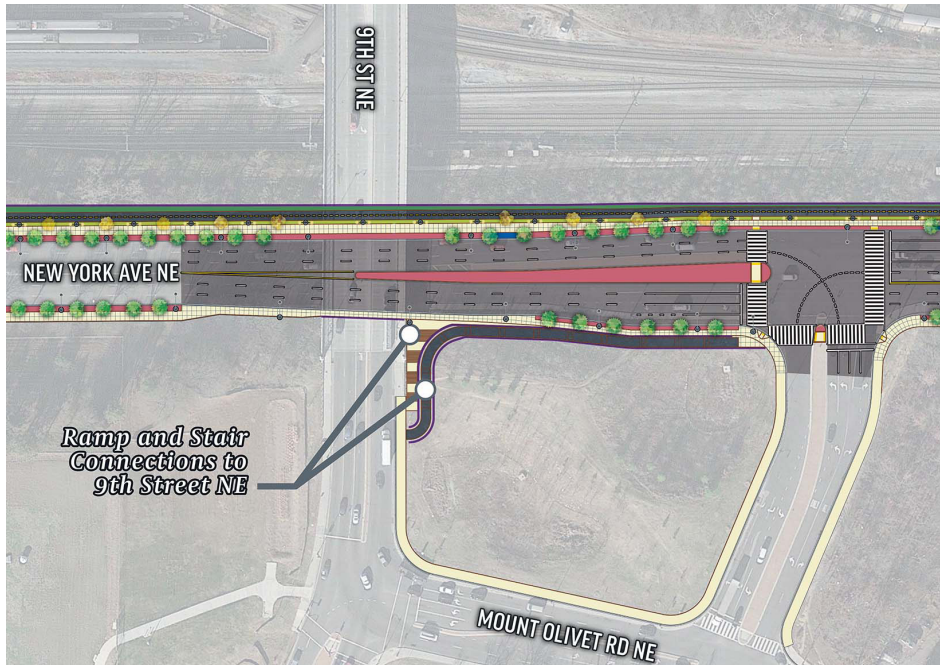


Figure 35: Proposed ramp and stair connection to 9th Street NE from New York Avenue NE.

Grade-Separated Crossings of New York Avenue NE

The Project Team explored opportunities for providing a grade-separated crossing of New York Avenue NE at both the east and west ends of the Project limits. At the west end, the Project Team considered the potential to utilize an existing railroad tunnel underneath New York Avenue NE in the vicinity of the 4th Street NE intersection but was found to not be feasible due to Amtrak property rights and plans for use as part of a future Virginia Railway Express (VRE) storage facility project.

The Project Team also investigated the possibility of constructing a new trail tunnel adjacent to the existing railroad tunnel. The south approach of the tunnel concept would connect to the existing Union Market Alley between 3rd Street NE and 4th Street NE where a proposed bicycle facility is planned as part of the future development. The north trail approach to the

tunnel would connect to the available DDOT right of way along the north side of New York Avenue NE where trail users would then ramp up to the existing elevation of New York Avenue NE. Due to grade restrictions for the trail to meet ADA compliance, a ramp from the north tunnel portal up to the elevation of New York Avenue NE would be as long as 600'. The major advantage of this trail crossing would be that it is grade-separated from New York Avenue NE traffic, removing potential conflicts between motor vehicles and trail users. Major challenges associated with a new tunnel concept include the very high construction cost due to the construction complexity of the structure in a dense, urban environment with limited right of way and the proximity to the existing railroad tunnel structure.

At the east end of the Project limits, the Project Team considered the potential to utilize an existing, inactive railroad bridge that is grade-separated over New York Avenue NE, just to the west of the Montana Circle for a trail connection. This railroad bridge is owned by Amtrak, who advised DDOT that they had a potential buyer for the structure. This bridge was not included in the project for further study.

Analysis of Design Concepts

A description of opportunities and challenges for each concept is listed in **Figure 36**. It illustrates that Concept 1 provides the most opportunity while comparatively facing a minimal amount of challenges. Additionally, Concept 1 shows that it would be an efficient use of funding based on what it could achieve when compared to construction costs.

Based on an analysis of the Project goals, a technical analysis, community input, and funding implications, the Project Team selected Concept 1 to move forward to the next phase of the design. The Project Team also determined that not all, but select portions of the Off New York Avenue NE bicycle connections would move forward due to constraints of available right of way and connections necessary to meet goals.

CONCEPT					CONCEPT				
OPPORTUNITIES	1	2	3	4	CHALLENGES	1	2	3	4
IMPROVE EXISTING SIDEWALKS AND CREATE SIDEWALKS WHERE NONE EXIST TODAY	✓	✓	✓	✓	NORTHSIDE BICYCLE FACILITY REQUIRES USERS TO CROSS NEW YORK AVENUE NE	✓	✓		
BICYCLE FACILITIES ALONG NEW YORK AVENUE NE	✓	✓	✓		REQUIRES NEW YORK AVENUE NE TO BE SHIFTED NORTH			✓	
SEPARATE FACILITIES FOR CYCLISTS AND PEDESTRIANS	✓		✓		LIMITED RIGHT OF WAY	✓	✓	✓	✓
MINIMIZES MOTOR VEHICLE CONFLICTS WITH CYCLE TRACK/PATH USERS	✓	✓			PINCH POINTS CREATED BY EXISTING INFRASTRUCTURE	✓	✓	✓	✓
VISUAL LANDSCAPE BUFFER FROM NEW YORK AVENUE NE FOR PEDESTRIAN/BICYCLE FACILITIES	✓	✓		✓	NEW RTAINING WALLS DUE TO TOPOGRAPHY	✓	✓	✓	✓
GREATER OPPORTUNITIES FOR OPEN/GREEN SPACE		✓		✓	CONSTRUCTION COST COMPARISON \$ - LOWER COST \$\$ - MODERATE COST \$\$\$ - HIGHER COST	\$\$	\$\$	\$\$\$	\$\$
DIRECT PEDESTRIAN AND BICYCLE CONNECTIONS TO DESTINATIONS SOUTH OF NEW YORK AVENUE NE			✓						
MORE DIRECT CONNECTION TO THE MBT (FUTURE)	✓	✓							
SEE AND BE SEE - OPPORTUNITIES FOR LIGHTING INCREASE AWARENESS OF ALL USERS	✓	✓	✓	✓					

Figure 36: Comparison of Opportunities and Challenges for Concept Alternatives

PREFERRED DESIGN CONCEPT

SECTION 5



Figure 37: Conceptual rendering of north side New York Avenue NE streetscape from Fairview Avenue NE to 16th Street NE.

PREFERRED DESIGN CONCEPT

Concept 1, Raised Cycle Track and Sidewalk, was selected as the most beneficial design based on analysis of opportunities and challenges by the Project Team and public input obtained from the second Interagency Meeting and Public Meeting. This concept design separates pedestrian and bicycle facilities, allowing users to have a designated space to travel on **Figures 38 - 41 on page 48**.

The design proposed as part of Concept 1 is shown on page 46 and includes:

- ADA compliant sidewalk and curb ramp improvements along New York Avenue NE from Florida Avenue NE to Bladensburg Road NE.
- Street trees, lighting and site amenity improvements along New York Avenue NE.
- Intersection improvements including but not limited to updated curb ramps, crosswalks, signaling and refuge islands along the proposed trail route.
- The inclusion of green infrastructure through stormwater management facilities where applicable along New York Avenue NE.
- Removal of curb cuts at unused driveways or at properties with an excessive number of access points that degrade the pedestrian environment.

Western Area: Connect to NoMa-Gallaudet Metro Station

- Two-way cycle track that connects the existing M Street cycle track and the MBT to the intersection of Morse Street NE and 4th Street NE via M Street NE and 4th Street NE. Beyond the intersection the facility becomes shared lane to the intersection of 4th Street NE and New York Avenue NE in the short term, with a future recommendation for a two-way cycle track as development occurs.

Area 1 (Florida Avenue NE to 9th Street NE Bridge)

- Raised two-way cycle track on the north side of New York Avenue NE from 4th Street to 16th Street.
- Ramp and stair connection to MBT via New York Avenue NE.

Area 2 (9th Street NE Bridge to Hecht Warehouse Area)

- Raised two-way cycle track on the north side of New York Avenue NE from 4th Street to 16th Street NE.
- Realignment of roadway to the south at 9th Street NE Bridge intersection to allow room for pedestrian and bicycle facilities on the north side.
- Ramp and stair connections to 9th Street NE from New York Avenue NE.
- Widen sidewalks along the 9th Street NE and Mount Olivet Road NE intersections to provide an improved route between the 9th Street NE/ Mount Olivet Road NE intersection and the 9th Street NE Bridge crossing.

Area 3 (Hecht Warehouse Area to Bladensburg Road NE)

- Raised two-way cycle track on the north side of New York Avenue NE from 4th Street NE to 16th Street NE.
- Montana Circle design to include sidewalk, crosswalk, curb ramp and landscape improvements. Potential location for public art or gateway signage.
- Cycle track along the east side of 16th Street NE that connects New York Avenue NE to West Virginia Avenue NE.

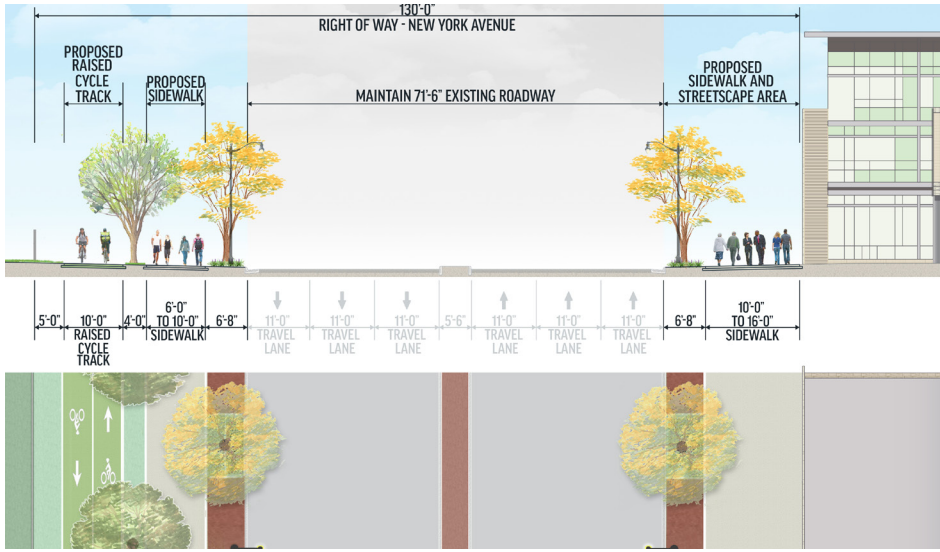


Figure 38: Typical streetscape section of New York Avenue NE between 4th Street NE and 16th Street NE excluding the intersection at 9th Street NE Bridge.



Figure 39: Conceptual rendering of south side New York Avenue NE streetscape between Fairview Avenue NE and Kendall Street NE.

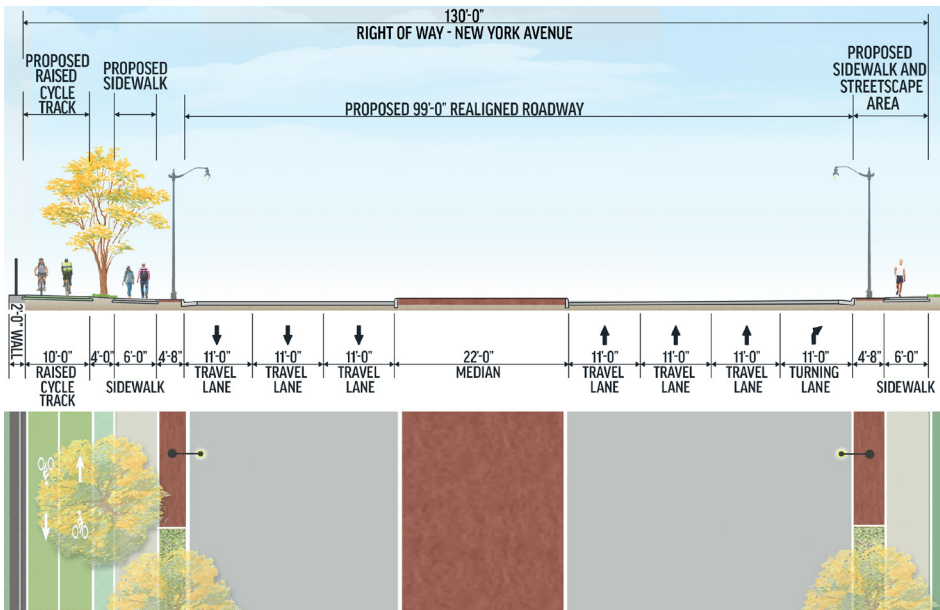


Figure 40: Typical streetscape section of New York Avenue NE at 9th Street NE intersection.



Figure 41: Conceptual rendering of north side New York Avenue NE streetscape from Fairview Avenue NE to 16th Street NE.



Figure 42: Conceptual rendering of north side New York Avenue NE streetscape between Montana Circle and Bladensburg Road NE.

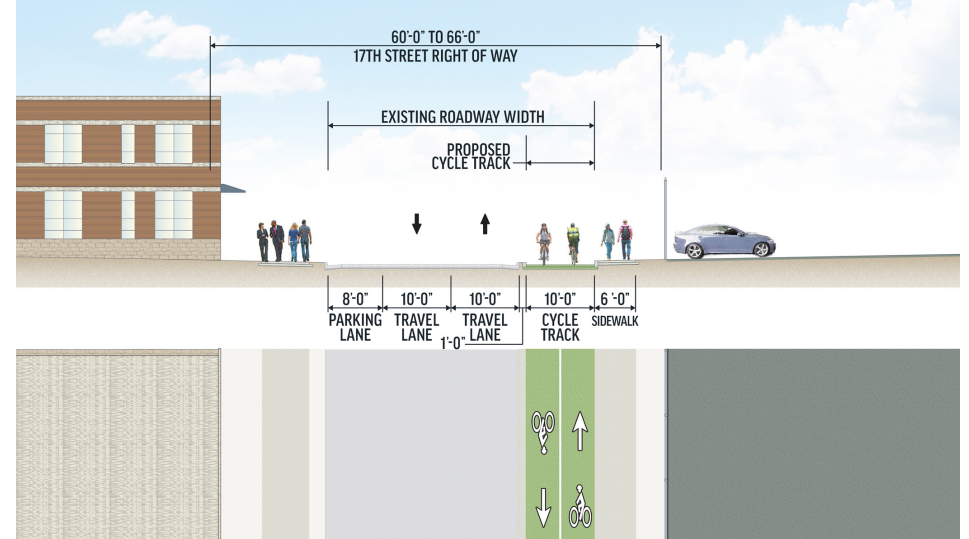


Figure 43: Typical streetscape section of two-way cycle track along the north side of 17th Street NE providing a connection between West Virginia Avenue NE and Montana Avenue NE.

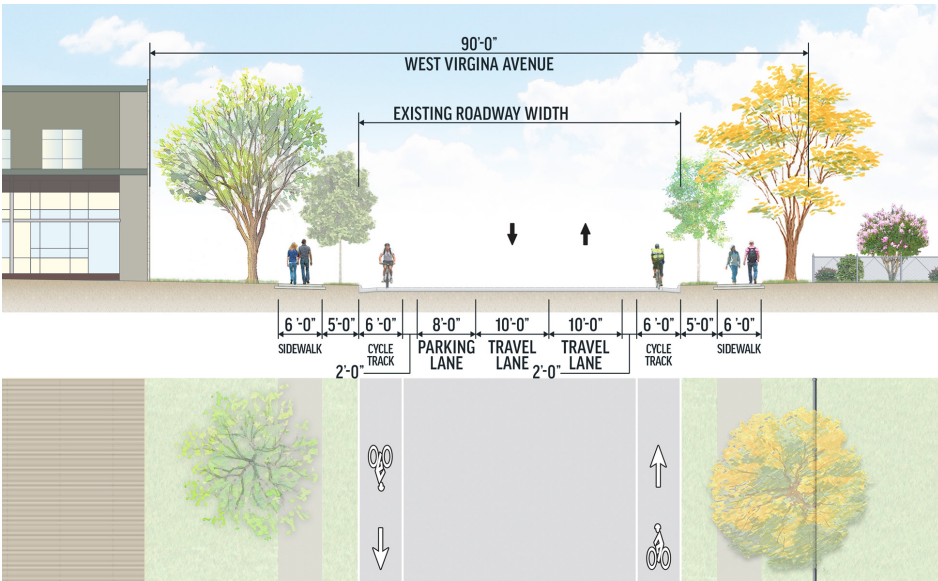


Figure 44: Typical streetscape section of one way cycle tracks along West Virginia Avenue NE that connect the 16th Street NE intersection to Montana Circle.

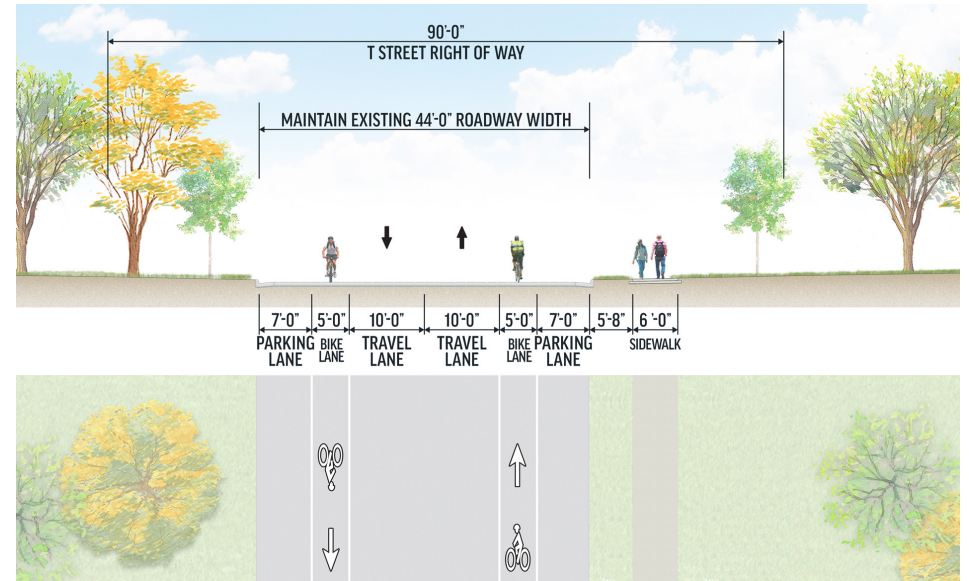


Figure 45: Typical streetscape section of conventional bike lanes along T Street NE that connect Bladensburg Road NE to 24th Street NE.

- One-way bicycle lanes along West Virginia Avenue NE that connect the 16th Street NE intersection to Montana Circle.
- Two-way bicycle lanes along the north side of 17th Street NE providing a connection between West Virginia Avenue NE and Montana Avenue NE.

Eastern Area: Connect to National Arboretum

- Conventional bike lanes along T Street NE that connect Bladensburg Road NE to 24th Street NE.
- Shared lanes along 24th Street NE that connect T Street NE to S Street NE.
- Improved sidewalks, curb ramps, and crosswalks along 24th Street NE between S Street NE and R Street NE.
- Shared lanes along R Street NE that connect 24th Street NE and the U.S. National Arboretum.

DESIGN ELEMENTS

All concepts were developed in accordance with the Project Design Criteria (see **Appendix F**).

The design criteria was also used during the development of preliminary design plans for the recommended streetscape and trail improvements along the corridor, preparing a cost estimate, and creating an implementation strategy for the design. To meet DDOT streetscape standards, all materials, vegetation and design details are to follow guidelines stated in the following documents: DDOT Design and Engineering Manual and DDOT Public Realm Design Handbook (2011). Streetscape lighting along the corridor should be uniform with lighting selections from the Washington Family of Streetlight Poles as stated in the District of Columbia Streetlight Policy and Design Guidelines (2013).

RAISED CYCLE TRACK DESIGN

The proposed raised cycle track facility on New York Avenue NE from 4th Street NE to 16th Street NE will be located adjacent to the existing DDOT right of way and will be elevated at sidewalk level. The bicycle facility will be separated from the proposed sidewalk with a landscaped buffer.

The proposed raised cycle track facility on New York Avenue NE from 4th Street NE to 16th Street NE will be located adjacent to the existing DDOT right of way and will be elevated at sidewalk level. The bicycle facility will be separated from the proposed sidewalk with a landscaped buffer.

The raised cycle track will have the following unique attributes:

- The raised cycle track on the north side of the streetscape adjacent to the right of way means pedestrians will not need to cross the bicycle facility to access crosswalks and destinations south of New York Avenue NE.
- The raised cycle track on the north side minimizes potential conflicts between bicyclists and vehicles due to a minimal number of roadways and driveways crossings.

At the intersection of New York Avenue NE and 16th Street NE, the raised cycle track continues south and ends at West Virginia Avenue NE. This raised cycle track is also protected from moving traffic and pedestrians.

LOW-IMPACT DEVELOPMENT OPPORTUNITIES

The preferred concept has identified opportunities to implement stormwater management tools. By selecting Low Impact Development (LID) strategies (e.g., permeable pavements and bioretention facilities), the Project provides opportunities to reduce the amount of impervious surfaces therefore reducing stormwater runoff created by the proposed facilities. Due to the urban context of the Project area and the limited space available within the existing right of way, proposed LID opportunities will be implemented to enhance to proposed streetscape improvements and the public realm along New York Avenue NE with stormwater treatments.

The proposed LID facilities that are recommended along New York Avenue NE are bioretention planters between the curb and sidewalk and porous asphalt pavement for the cycle track from Fairview Avenue NE intersection to the 16th Street NE intersection. In addition, porous asphalt is recommended for the cycle track along 16th Street NE and permeable brick pavers are also being considered throughout the Project length. Photos provided are representative of the types of potential LID facilities.

The proposed stormwater management approach has been discussed with DDOT and DOEE personnel during the development of the Concept SWM Report (**Appendix G**). Review and approval of the Concept by the DOEE will be required prior to the completion of semi-final design SWM Report and Plans, and will include Erosion and Sediment Control Plans. Final design plans and the accompanying Final SWM Report will require submission to DOEE for review and approval in conjunction with the Final Design milestone submission. Concurrent refinement of the stormwater management/drainage and erosion and sediment control design and plans are anticipated as a result of utility designation, locating, coordination and approval from affected utility agencies including D.C. Water.

STREETSCAPE ENHANCEMENT OPPORTUNITIES

Photos 34 - 37 illustrate the proposed programming of the streetscape within the furniture and sidewalk zones. The proposed streetscape improvements provide opportunities for public realm enhancements through DDOT standard furnishings that improve all users comfort and safety. In addition, these amenities enhance the corridor's overall character and sense of community. Locations for street furnishings will be determined as the Project progresses into final design.

A planting palette was developed for the New York Avenue NE in accordance to DDOT and UFA standards. Street trees of varying species were placed along the corridor to create seasonal interest and shade. Plantings include over 300 street trees, shrubs and groundD.C.overs. **Figure 47** lists the plants that are proposed as part of the Project.

In order to improve the quality of life for users of the New York Avenue NE corridor, the Project design was developed following Crime Prevention Through Environmental Design (CPTED) guidance. The general CPTED practices that will be implemented for the New York Avenue NE Streetscape and Trail Project includes:

- See and Be Seen – Design features that increase visibility and awareness of the users of the Streetscape and Trail Project.



Photo 34: Example of bioretention planters along a Washington D.C. streetscape.

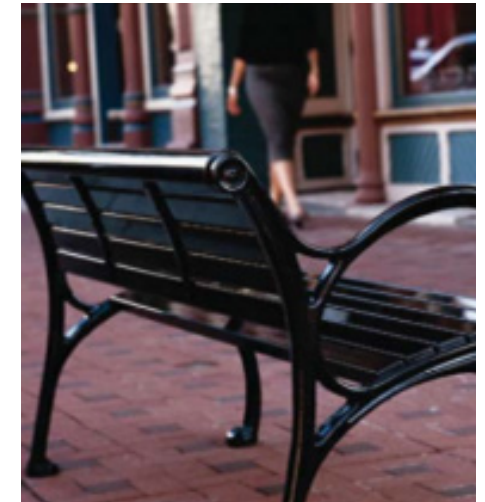


Photo 35: DDOT standard traditional streetscape bench.



Photo 36: DDOT standard traditional streetscape bike rack.



Photo 37: DDOT standard traditional streetscape trash receptacle.

- Lighting – Install lighting that enhances natural surveillance by the user of their surrounding environment.
- Eliminate Hiding Areas – Maintain visual sight lines between all users of the streetscape, trail and vehicular roadway so that all users are visible.

Figure 46 illustrates specific design features that will reduce opportunities for criminal activities include providing clear sighted sidewalks and bike facilities that are well paved, have sufficient widths for safe passage, and are accessible for all potential users. Additionally, wayfinding signage is proposed throughout the corridor which will clearly identify destinations allowing non-local users to safely navigate the corridor. Improving aesthetics of the corridor through the streetscape elements and implementation of a maintenance plan will also provide a sense of ownership to the community and activate the space in a positive manner.

Restricting unauthorized use of the various pedestrian and bicycle facilities by motor vehicles should be considered during final design. The design of facility entry and crossing points should make intentional access by unauthorized users difficult. Physical barriers such as bollards, planters, landscaping features, and other traffic barriers should also be considered longitudinally. It will be necessary to assess the pedestrian or bicyclist injury or terrorism risks with respect to the physical installations and how the proposed installation will mitigate those risks. It will also be important to consider the facility users, cost, and maintenance and access for emergency responders.

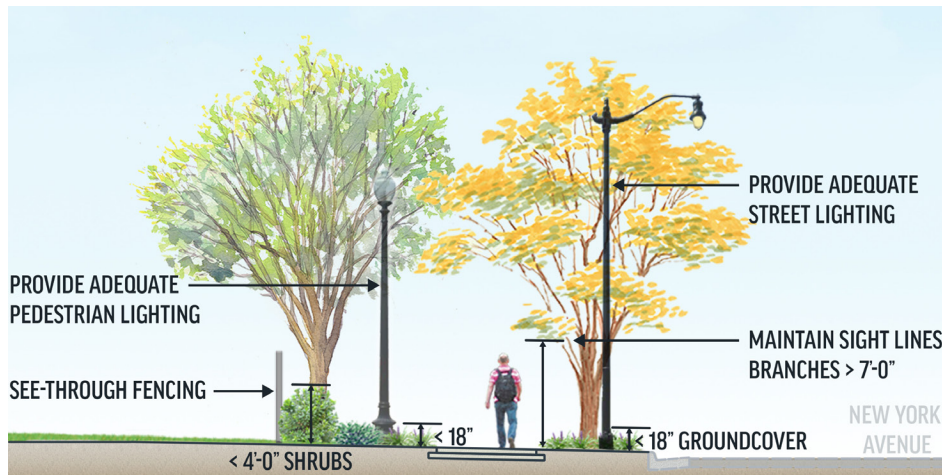


Figure 46: Crime Prevention Through Environmental Design

	Scientific Name	Common Name
Trees	<i>Betula nigra</i>	River birch
	<i>Gleditsia tricanthos inermis</i>	Thornless honeylocust
	<i>Halesia carolina</i>	Carolina silverbell
	<i>Quercus phellos</i>	Pin oak
	<i>Tilia Americana 'Redmond'</i>	Redmond American linden
	<i>Ulmus Americana 'Princeton'</i>	Princeton American Elm
Shrubs	<i>Cornus sericea 'Farrow'</i>	Red-osier dogwood
Perennials	<i>Amsonia hubrichtii</i>	Blue star
	<i>Carex pennsylvanica</i>	Pennsylvania sedge
	<i>Heemerocallis 'Happy Returns'</i>	'Happy Returns' daylily
	<i>Juncus inflexus 'Blue Arrows'</i>	European meadow rush
	<i>Juncus patens 'Elk Blue'</i>	Elk blue grey rush
	<i>Liriope muscari</i>	Big blue lilyturf
	<i>Pennisetum alopecuroides</i>	Fountain grass
	<i>Schizachyrium scoparium</i>	Little bluestem

Figure 47: Potential Planting Palette

COST ESTIMATION

The Project Team completed a cost estimate to to illustrate the funding implications of complete construction of the preferred concept design, the Project phases, and the list of recommended Projects. The cost estimate is in 2017 dollars and does not include right of way costs, final engineering and construction inspection costs.

I.D.	Work	Cost Estimate
	New York Avenue NE Full Design (Florida Avenue NE to Bladensburg Road NE/ Arboretum Entrance)	+/- \$27 million
S.1	New York Avenue NE Streetscape of north side between Florida Avenue NE and Fairview Avenue NE	+/- \$8 million
S.2	New York Avenue NE Streetscape and Cycle Track Improvements between Fairview Avenue NE and Bladensburg Road NE	+/- \$17 million
B.1	MBT Connections to New York Avenue NE	+/- \$2 million
B.2	4th Street NE Bicycle Improvements	+/- \$0.4 million
B.3	Improved and widened sidewalks at 9th Street NE/Mount Olivet Road NE to New York Avenue NE	+/- \$1.2 million
B.4	Off New York Avenue NE Bicycle Connections to National Arboretum	+/- \$1.4 million

Figure 48: Cost Estimate

RECOMMENDATIONS

SECTION 6



Figure 49: Construction Phasing Plan

RECOMMENDATIONS

The Project Team recommends that the preferred design concept, described in Section 5, move forward to final design. In order to complete design and construction of the Project, a phasing plan has been developed and is described below. Transit Recommendations and Future Studies/Projects are described in this section.

PHASING PLAN

The construction of the Project can occur once funding is secured and final design, right of way coordination, and environmental coordination has been completed. The Project Team developed a strategy outlining how construction could be phased in the event that the Project is not constructed under a single phase due to adjacent Project schedules and funding availability. The construction of the Project as currently designed could be divided into up to six (6) different phases: two (2) streetscape focused phases and four (4) bicycle focused phases.

Figure 49 illustrates the four (4) possible scenarios for the construction phasing of this Project.

TRANSIT RECOMMENDATIONS

In May 2017, WMATA completed a Transit Service Assessment (**Appendix H**) that included examining this Project study area. The WMATA Assessment recommended:

1. A new bus route option (New Route Two) from Fort Lincoln Market Street NE via Fort Lincoln Drive NE, 33rd Place NE (31st Place NE, northbound) South Dakota Avenue NE, Bladensburg Road NE, West Virginia Avenue NE, Mount Olivet Road NE, Brentwood Parkway NE, Penn Street NE, New York Avenue NE, New York Avenue NE, New York Avenue NW, 6th Street NW, Massachusetts Avenue NE, K

Street I Street NW, and Franklin Square. The annual operational cost of this route would be approximately \$4.8 million. **Figure 50** illustrates this new bus route option.

2. Extension of the existing Metrobus Route D4 to Fort Lincoln via New York Avenue NE, Bladensburg Road NE, and South Dakota Avenue NE. The annual operational cost of this route would be approximately \$880,000. **Figure 51** illustrates this bus route option. These recommendations would provide connections to the growing Fort Lincoln area from the southwest, including downtown, which do not exist today. Both the new bus route and the bus route extension would include service along portions of New York Avenue NE located within the Project study area. Metro's Office of Bus Planning will further refine these recommendations pending further consultation with DDOT and the advancement of this Project.

Given WMATA's current fiscal constraints and the ridership estimate from the Transit Assessment that does not indicate a large enough demand for transit service along the corridor, DDOT does not recommend that they be implemented at this time. DDOT would consider implementation of the new bus route and bus route extension in the future based on the availability of funding and an increase in Projected ridership numbers.

While the recommended routes and corresponding bus stops are not shown as part of this Project, the design of the New York Avenue NE Streetscape and Trail Project does not preclude them. Following the completion of the WMATA Transit Service Assessment, WMATA and DDOT agreed on fourteen (14) future new bus stop locations along New York Avenue NE within the Project limits and agreed to not preclude them as part of this Project by identifying these locations on the plans and ensuring that no proposed features (including trees, light poles, and signal poles) would have to be relocated to construct them. These locations are identified on the concept plans.

The New York Avenue NE Streetscape and Trail Project also recommends the consolidation of two existing bus stops to avoid conflicts between cycle track users and the bus stop.

WMATA reviewed the draft version of the concept plans for this Project and proposed a bus stop and bus layover area on Okie Street NE which is outside the limits of this Project. WMATA also recommended constructing new in-street concrete bus pads at locations of all existing bus stops where no bus pad exists today.

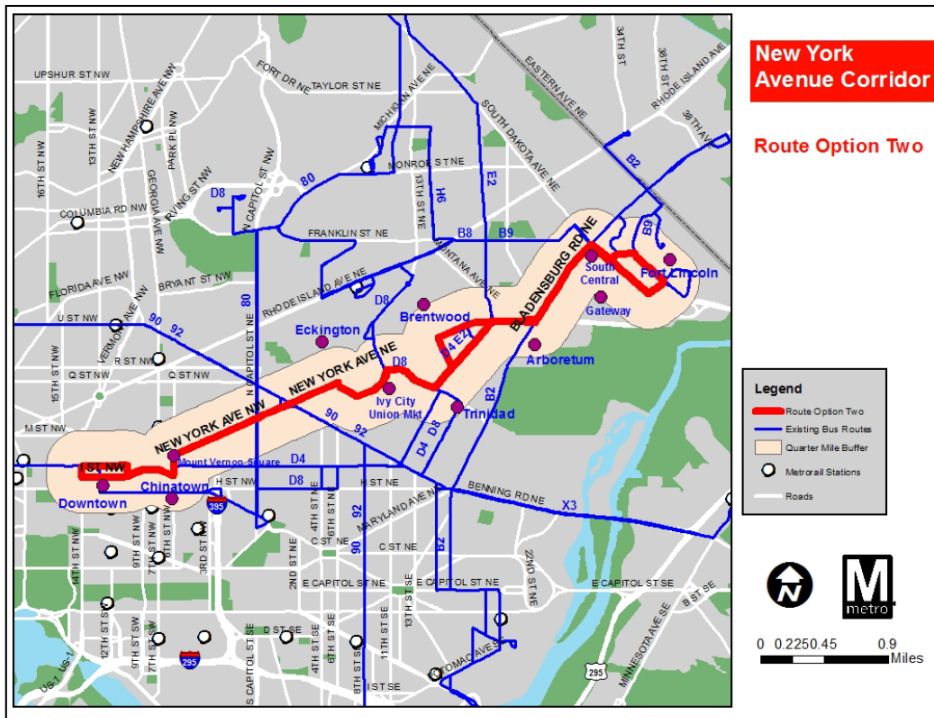


Figure 50: New Bus Route Option (N8 Route Two)

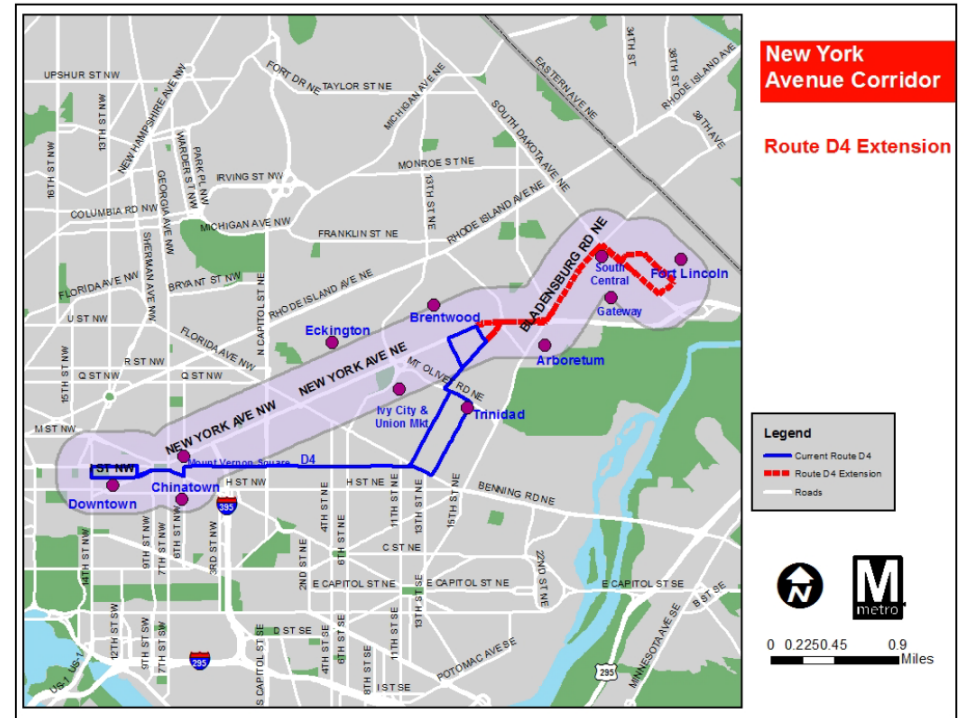


Figure 51: Route D4 Extension

FUTURE STUDIES/PROJECTS

During the design process of this Project, a number of other designs were considered but were not ultimately included in the Project. Although the designs are not included in the Project, the Project Team recommends they be further investigated.

New York Avenue NE Bridge Bicycle Infrastructure Study

The existing bridge that spans the Union Station railroad yard has a five-foot sidewalk that is not wide enough to accommodate both bicycles and pedestrians. The Project Team has recommended a direct connection from the MBT that is below the bridge directly to the northside and southside of New York Avenue NE. However, after extensive examination, it was found that modification to the existing bridge structure would not be acceptable for the integrity of the bridge. An acceptable design solution to carry bicyclists over the bridge to connect the proposed MBT could not be identified on the existing New York Avenue NE Bridge over the railyard. A solution to accommodate direct connections from the MBT to the multimodal design east of the bridge needs further examination.

Multimodal Connection Design from 4th Street Alley to 4th Street/New York Avenue NE Trail Project

As part of the redevelopment of the Union Market in the NoMa area, the Comprehensive Transportation Review (CTR) for the 300 Morse Street Planned Unit Development (PUD) proposes the 4th Street NE cycle track through the development along the alley between 3rd Street NE and 4th Street NE to provide a connection to DDOT's future bicycle facilities planned along New York Avenue NE. A connection must be designed to connect this planned bicycle facility in the alley to the proposed bicycle facilities along 4th Street NE and New York Avenue NE.

New York Avenue NE Multimodal Tunnel Study

It was identified in studies that preceded this Project, including the New York Avenue NE Rail-with-Trail: Linking Northeast Washington, D.C. (2005) study, that the use of the existing, unused railroad tunnel underneath New York Avenue NE in the vicinity of the 4th Street NE intersection would

provide a beneficial trail connection from the Union Market area to the north side of New York Avenue NE. Because the use of the existing tunnel is unlikely, an alternate tunnel design should be examined to provide a grade-separated multimodal connection between the 3rd Street NE alley and 4th Street NE.

New York Avenue NE Cycle Track Extension 16th Street NE to Montana Avenue NE and Brentwood Project

As future redevelopment and construction occurs in this area, another project should design the extension of the raised cycle track from 16th Street NE to Montana Avenue Circle NE and continue north along the west side of Montana Avenue NE. When the existing railroad bridges that travel over Montana Avenue NE need to be reconstructed, the new spans should be long enough to provide pedestrian and bicycle facilities on either side of Montana Avenue NE (See **Figure 52**).

New York Avenue NE South Side Bicycle Facilities Extension to Bladensburg Road Project

The New City development's streetscape design includes a cycle track from Montana Avenue to the easternmost boundary along New York Avenue NE. Because of property rights, the Project design proposes to improve the sidewalk only from the New City eastern most boundary to Bladensburg Road. The Project design recommends that the full buildout of the cycle track, as designed by the New City development be completed to the New York Avenue NE and Bladensburg Road intersection (See **Figure 53**).

Bladensburg to South Dakota NE Multimodal Study

DDOT is currently conducting an interchange study to develop and evaluate multimodal alternatives and to revise the existing design of the New York Avenue NE/South Dakota Avenue Interchange. The interchange is approximately 5,000' to the east of the Project limits for the New York Avenue NE Streetscape and Trail Project. The Project Team recommends that a separate study be performed on the feasibility and constructability of a design to provide a multimodal connection from the Project to the proposed multimodal improvements on South Dakota Avenue NE.

Montana Avenue Circle Traffic Analysis and Safety Improvements Study

The intersection of Montana Avenue NE, West Virginia Avenue NE, and New York Avenue NE is a major transportation feature along the Project corridor. The intersection is a modified traffic circle with the intersection

of Montana Avenue NE, West Virginia Avenue NE, and New York Avenue NE. The existing design is confusing for unfamiliar and familiar users alike when attempting to navigate a turn or go straight through the area. The Transportation Operations Administration performed a short term and long term operations study of Montana Circle. They developed concepts that considered improvements to pedestrian, bicycle, and vehicle travel

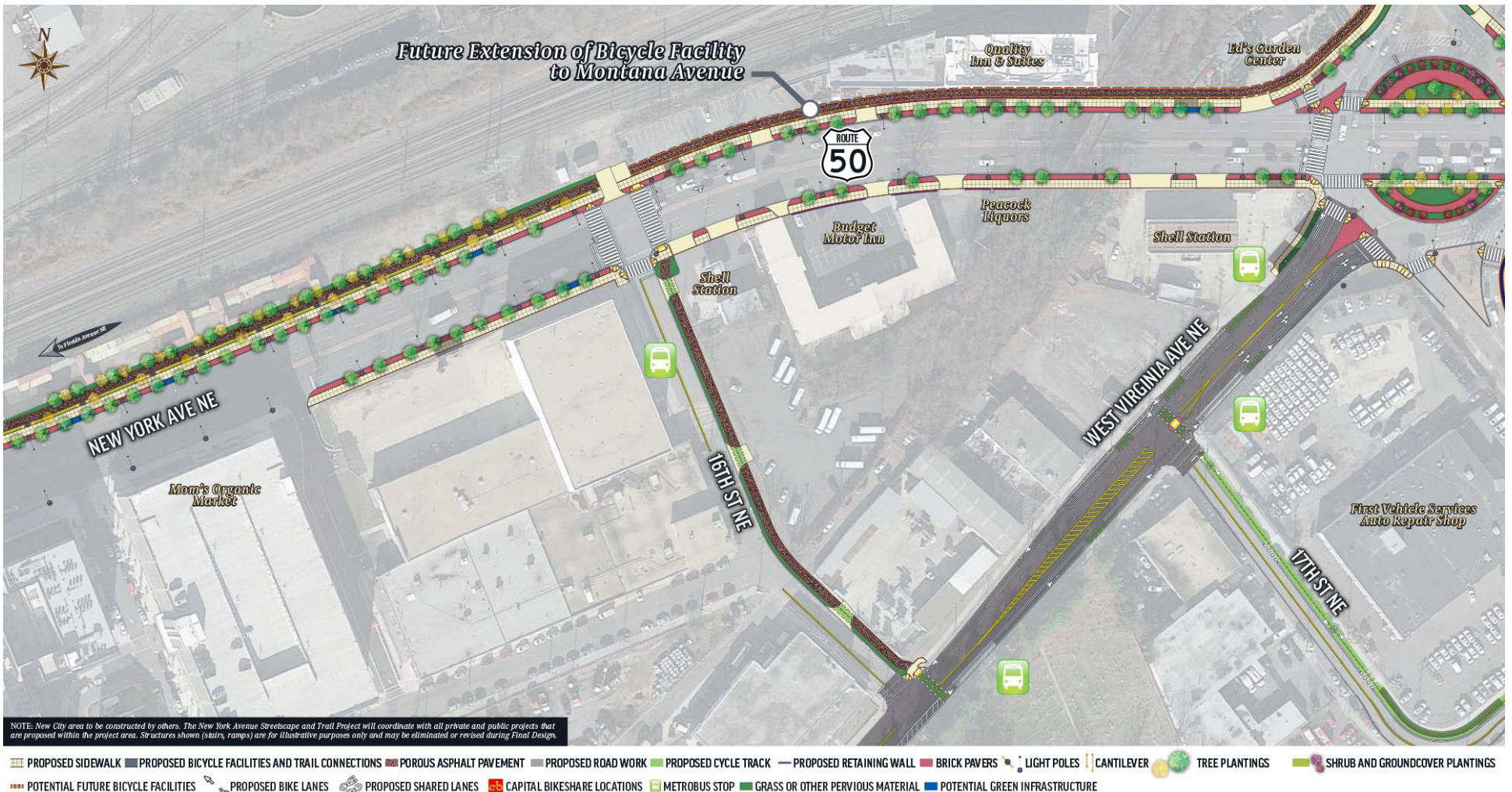


Figure 52: New York Avenue NE Raised Cycle Track Extension to Montana Avenue Project

throughout the circle. The long term design concept is shown on **Figure 54**. This operational study was conducted independently of the Project. However, the Project Team, did make recommendations regarding the pedestrian and bicycle experience in the circle. The Project Team recommends that a separate study be performed to examine the performance of the design and to determine design solutions that will

improve the overall experience of users through this important intersection. Refer to **Appendix J** for long term concepts that have been developed by DDOT.

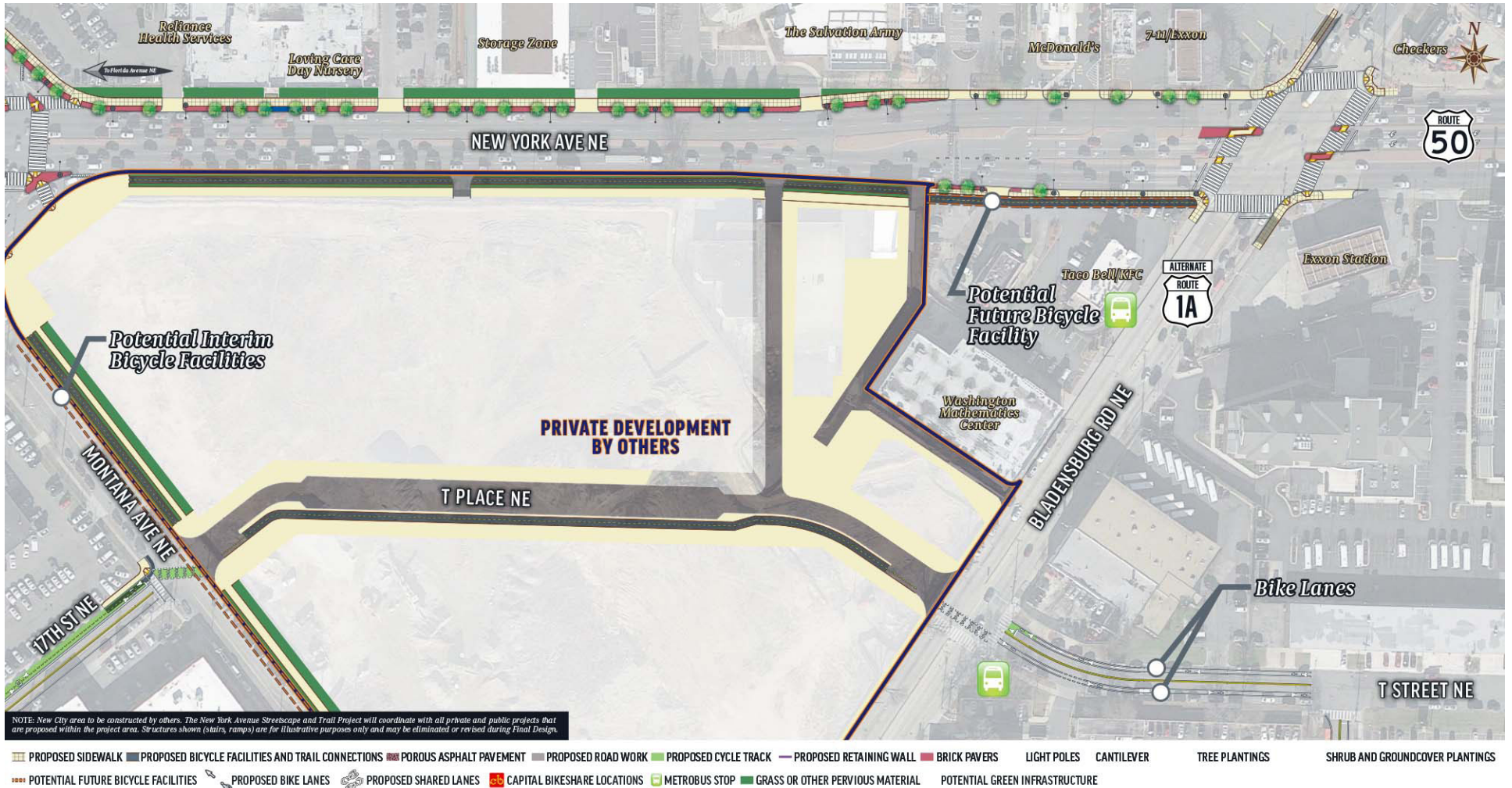


Figure 53: New York Avenue NE South Side Bicycle Facilities Extension to Bladensburg Road Project



Figure 54: Montana Circle NE Design Long Term