



New York Avenue Rail-with-Trail: Linking Northeast Washington, D.C.

DRAFT CONCEPT PLAN



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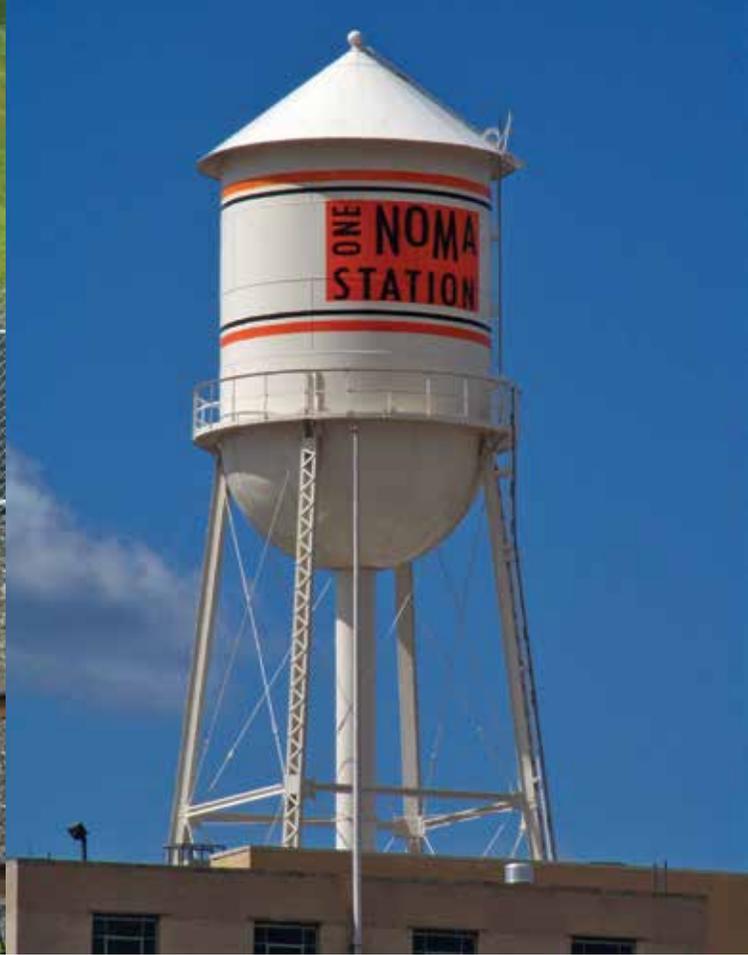


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Produced by Rails-to-Trails Conservancy

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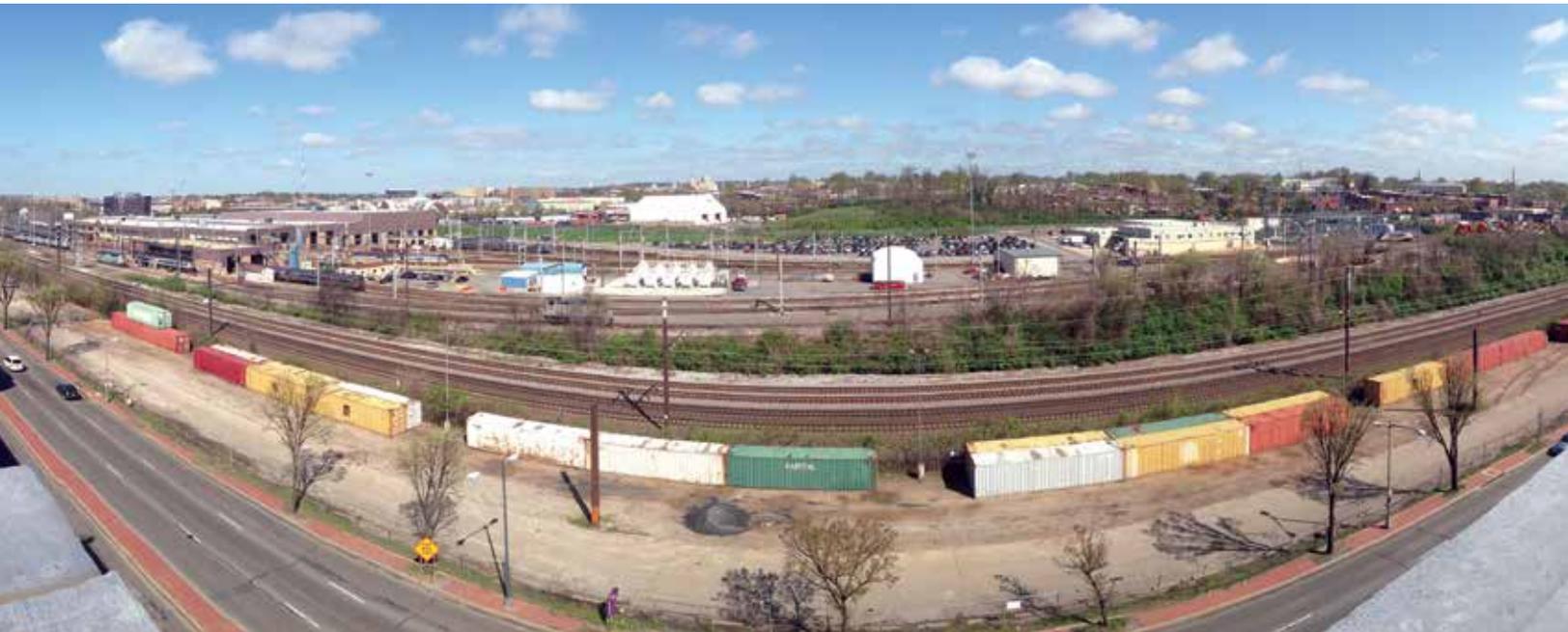
ABOUT US

Rails-to-Trails Conservancy serves as the national voice for more than 160,000 members and supporters, 30,000 miles of rail-trails and multi-use trails, and more than 8,000 miles of potential trails waiting to be built, with a goal of creating more walkable, bikeable communities in America. Since 1986, we have worked from coast to coast, supporting the development of thousands of miles of rail-trails for millions to explore and enjoy.



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PROJECT OVERVIEW



Project Scope

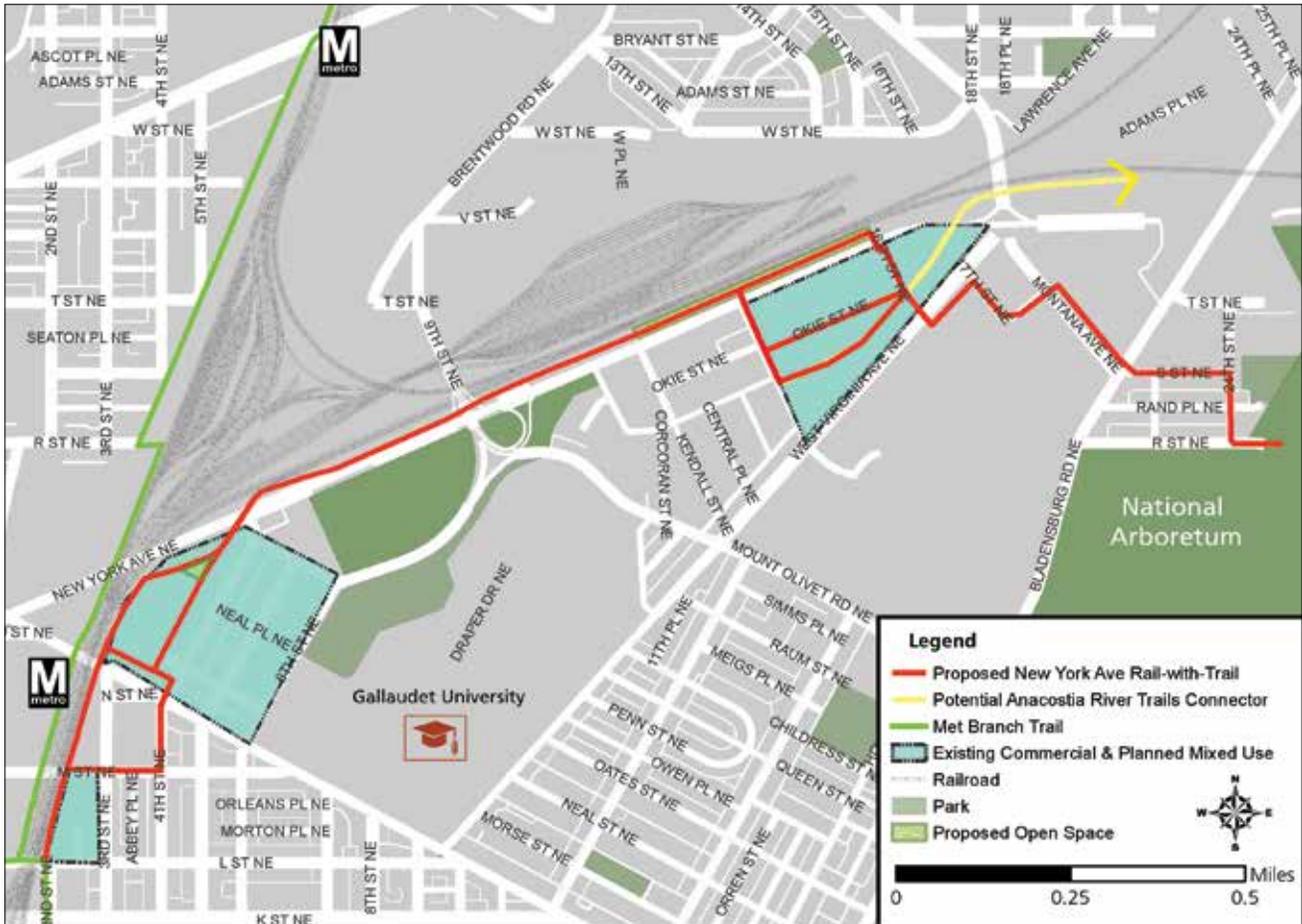
This study was prepared by Rails-to-Trails Conservancy (RTC) to encourage the development of a new, shared-use path in Northeast Washington, D.C., along the New York Avenue corridor from NoMa, an area north of Massachusetts Avenue and east of Union Station, to the U.S. National Arboretum. Utilizing active railroad right-of-way and existing and planned on-street bicycle facilities, this proposed trail will connect to the popular Metropolitan Branch Trail and will provide critical bicycle and pedestrian linkages eastward through Union Market and Ivy City.

The purpose of this study is to provide a preliminary assessment and concept plan for developing a shared-use path along the New York Avenue corridor within the defined study area and to: 1) provide recommendations regarding trail alignment and design; 2) identify opportunities and challenges to trail development; and 3) provide guidance for future trail maintenance and operations. Conducted as the first phase of determining feasibility for trail development, this preliminary assessment did not include extensive stakeholder outreach but can be used to inform future public participation and stakeholder outreach efforts in the next phase of planning.

Project Purpose

The concept of developing a trail along the New York Avenue corridor dates back at least a decade, when it was included in the District's 2005 Bicycle Master Plan. Renewed interest has produced a need to further examine the concept and provide a preliminary assessment of the corridor and its potential for trail development. This study presents a closer look at current corridor conditions, opportunities and challenges and makes preliminary recommendations for a trail that could eventually become the eastern bicycle gateway into the city. Referred to as the "New York Avenue Rail-with-Trail" in this study, the name indicates its unique relationship with an active railroad corridor that has served as one of the main gateways into Washington, D.C., for more than 100 years.

The purpose of this project is to create a new multi-use trail (shared-use path) in Northeast Washington, D.C., that will improve pedestrian and bicycle access and conditions along New York Avenue, seamlessly connecting the Ivy City neighborhood with downtown. Produced as a concept plan, this study is intended to be the first planning effort to inform future, more extensive plans to develop the trail.



New York Avenue Rail-with-Trail Project Area Map

Project Location

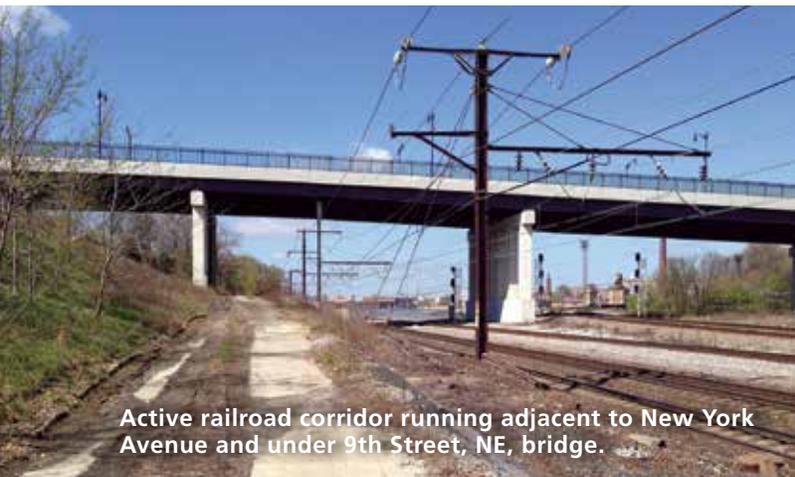
The study area for this project is located within Wards 5 and 6 of the District, extending from L Street and 2nd Street, NE, to the U.S. National Arboretum entrance on R Street, NE.

The proposed 2.48-mile New York Avenue Rail-with-Trail is located predominately along the north side of New York Avenue, between the road right-of-way and an active railroad corridor. Small segments of the trail alignment intersect existing and proposed residential and commercial development in the NoMa, Union Market and Ivy City neighborhoods as on-street bicycle facility connections. Detailed descriptions of existing conditions and proposed trail alignment are presented in the “Segment Analysis and Recommended Trail Alignment” section.

INTRODUCTION AND BACKGROUND



Metropolitan Branch Trail.



Active railroad corridor running adjacent to New York Avenue and under 9th Street, NE, bridge.

When complete, the Metropolitan Branch Trail (MBT) will be an 8-mile multi-use trail connecting Silver Spring, Maryland, and downtown Washington, D.C., making it an important north-south active transportation corridor. Trail use has increased steadily on the MBT since the newest section—which runs from New York Avenue to Franklin Street, NE—opened in 2010; recent figures indicate that the MBT carried more than 340,000 trips in the past year, a 290 percent increase from 2011. Although additional bicycle lanes are being added to streets that intersect the MBT, a multi-use trail connection east of the MBT does not exist. New residential and retail development emerging in Northeast Washington, D.C., will bring thousands of people to and through its neighborhoods, but traffic conditions on New York Avenue—a major city arterial—make it unsafe and unpleasant to walk or bike the short distance between these destinations.

The need for a safe trail connection along the New York Avenue corridor was identified a decade ago in Washington, D.C.'s 2005 Bicycle Master Plan. An unused railroad tunnel under New York Avenue has sparked renewed interest in the trail project, given its location near Union Market and its ability to help bicyclists and pedestrians avoid steep grade changes and busy intersections near the New York Avenue bridge. Developing a multi-use trail along New York Avenue provides a unique opportunity to transform public space and neighborhood connections in Northeast Washington, D.C., by reusing and reimagining the existing landscape.

This section of the report offers a conceptual foundation for developing the New York Avenue Rail-with-Trail, a facility that would use a combination of right-of-ways to create a safer, more accessible east-west bicycle and pedestrian connection in the Northeast section of the city. First, relevant city plans are presented in the Plan Review. Next, the “rail-with-trail” concept is described followed by successful examples. Finally, design guidelines and related resources are summarized.

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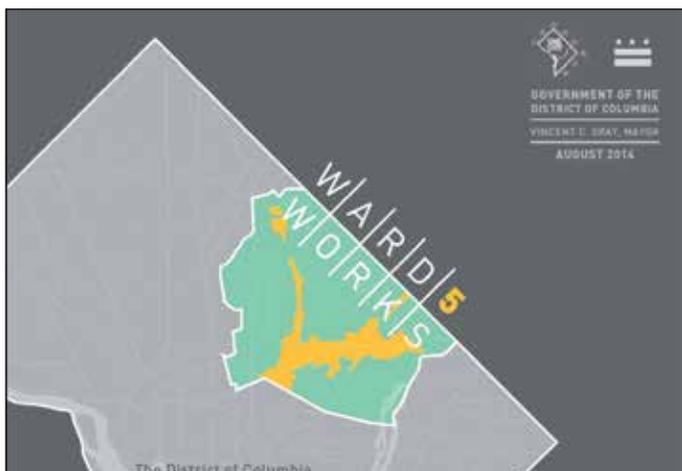
PLAN REVIEW

The following planning documents either specifically recommend development of a multi-use trail along New York Avenue or highlight the need for safer, more accessible bicycle and pedestrian connections from the Metropolitan Branch Trail to the U.S. National Arboretum and beyond.

Ward 5 Works (2014)

This report discusses the repositioning of industrial land in Washington, D.C.’s Ward 5, home to the majority of such land in the city. The report also stresses the importance of accommodating both industrial and residential uses in close proximity and specifically focuses on establishing New York Avenue as a true gateway to the city. One of eight primary goals in the report is to “create great places, improve physical appearance and enhance connectivity” in Ward 5.

The report highlights the lack of bicycle and pedestrian facilities in Ward 5 and refers to the New York Avenue Green Infrastructure Assessment’s recommendation for a linear park between New York Avenue, NE, and the rail yard. The report recommends promoting non-motorized forms of transportation, and specifically advocates rebuilding New York Avenue to be pedestrian-friendly. The report recommends either a linear park in the railroad corridor on the northern side of New York Avenue or “a multipurpose trail and linear



park on the southern side of New York Avenue, closer to businesses and activity.”

New York Avenue Green Infrastructure Assessment (2011)

This assessment examines opportunities to improve green infrastructure and multimodal transportation along New York Avenue, NE. A substantial portion of the report focuses on the potential for a multi-use trail along New York Avenue, NE. The assessment recommends construction of a trail on the south side of the road primarily via the widening of existing sidewalks. The location would allow for more connections to residences and businesses compared to an alignment on the north side of the road. At its far western end, the assessment recommends that the trail connect to the existing Metropolitan Branch Trail near Florida Avenue, NE. It also recommends exploration of a connection to the Anacostia Riverwalk Trail at the trail’s eastern end.

However, the report recognizes the potential for reduced travel time with a trail on the north side of the road—because of fewer road and driveway crossings—and suggests that future studies should explore this possibility. The report also recommends the replacement of parking lots on the north side of New York Avenue, NE, with a linear park, perhaps featuring a train-oriented theme.

PLAN REVIEW



Florida Avenue Market Study (2009)

This small area plan evaluates the current status and limitations of the 40-acre industrial and retail site comprising the Florida Avenue (Union Terminal) Market and its immediate surroundings and provides a framework for redevelopment of the area into a mixed-use neighborhood. The plan views the area as a critical link between several neighborhoods and anticipates the redeveloped area to “be designed to include a mix of commercial and residential uses and ... feature pedestrian-oriented retail streets with open spaces and ‘green’ thoroughfares.”

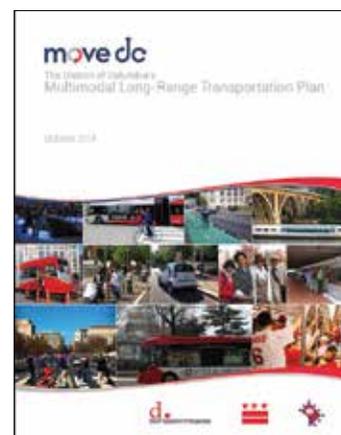
After addressing the present lack of pedestrian accommodations and constant conflicts between vehicles and pedestrians, the small area plan advocates for “clear pathways throughout the market”; “increase[d] pedestrian connectivity”; and a direct connection to the Metropolitan Branch Trail in the future. However, it does not examine the potential for a trail along New York Avenue, NE, nor does it acknowledge the former rail tunnel leading under the road from the site to the active Amtrak corridor.

District of Columbia Bicycle Master Plan (2005)

The District’s most recent Bicycle Master Plan proposed a robust addition to the existing network of bicycle facilities,

many of which could be added within five to 10 years. Facility types include bike lanes, protected bike lanes, signed bike routes and multi-use trails. According to the report, at minimum, multi-use trails in the District should be 10 feet wide and paved.

Specifically, the plan recommends a trail or bikeway within the New York Avenue corridor from Mount Vernon Square to the “National Arboretum, Fort Lincoln Area, and Anacostia River Trail System in Prince George’s County.” Improving bicycle access to and through the complicated intersections of New York Avenue with Florida Avenue, Montana Avenue and Bladensburg Road is also listed as a priority.



moveDC (2014)

This wide-ranging plan thoroughly outlines a vision of multimodal transportation in the District by 2040 and presents the various strategies and actions necessary to implement

proposals. Because of the significant population growth anticipated in the District through 2040, the plan focuses extensively on new bicycle and pedestrian infrastructure, including “transportation-oriented trails” and “a robust protected bicycle network.”

Like the District of Columbia Bicycle Master Plan (2005), this long-range plan recommends a trail within the New York Avenue corridor from Mount Vernon Square to the “National Arboretum, Fort Lincoln Area, and Anacostia River Trail System in Prince George’s County”. The trail is classified as Tier 1, the report’s ranking reserved for the highest priority projects for implementation.

RAIL-WITH-TRAIL



Many people are familiar with the concept of rail-trails—shared-use paths developed on former railroad corridors. With the increasing popularity of rail-trails across the country, communities are looking for other innovative ways of securing land for safe, popular and effective trail development. Rails-with-trails—shared-use paths that are within or directly adjacent to active railroad corridors—provide even more opportunities for bolstering active transportation systems by offering safe, attractive community connections.

Currently, there are more than 240 rails-with-trails in the United States, totaling hundreds of miles, and more are being built each year. The Metropolitan Branch Trail is a successful example of existing rail-with-trail in the District, with sections abutting the Red Line of Washington, D.C.'s Metrorail and an active CSX right-of-way, also operated by Amtrak and Maryland Transit Administration (i.e., MARC Trains).

Although safety is a common concern when developing trails near active railroad corridors, successful precedents exist in corridors of varied characteristics (e.g., freight, passenger, high-volume, high-speed). Trails that are located within railroad

rights-of-way are often required to follow guidelines set by the railroad owner or operator. For example, some railroads require a minimum setback from the track centerline or construction of a barrier (usually a fence), or both, between the trail and tracks. Providing additional insurance coverage is also a common requirement that railroads apply to easement, lease or license agreements with trail managers.

According to data collected by the Federal Railroad Administration (FRA) Office of Safety Analysis, tens of thousands of fatalities have occurred on railroad corridors since RTC released its first rail-with-trail study in 1992. However, there are only two known fatalities involving a trail user on a rail-with-trail, data that could suggest that rail-with-trail facilities can reduce fatalities by providing safer ways to traverse the corridor and to cross tracks where necessary.

Additional resources are provided in America's Rails-with-Trails, a comprehensive study produced by RTC in 2013. Key findings and best practices are presented to help address concerns that railroads and communities may have when considering rail-with-trail facilities. For more information, visit www.railstotrails.org/railwithtrail.

TRAIL PRECEDENTS

A combination of characteristics will make the New York Avenue Rail-with-Trail unlike any other trail in Washington, D.C. These characteristics—use of an old railroad tunnel, proximity to an active railroad corridor, connection to on-street bicycle facilities and a potential new pedestrian bridge—would create a unique multimodal connector. The examples included below share important characteristics with the New York Avenue Rail-with-Trail and can serve as models to inform such a project.



Charlotte Trolley Trail, Charlotte, N.C.

The Charlotte Trolley Trail follows a light rail line connecting downtown Charlotte, North Carolina, with seven neighborhoods around the city. The city's 2020 Center City Vision plans to build out the linear park system with a focus on green space as a cultural amenity. Meant to be a vibrant public space, the trail links businesses and attractions across the city via a network of gardens, public art and unique spaces.

- Length:** 4 miles, all rail-with-trail
- Design:** 10- to 12-foot wide asphalt trail; 15–20 feet setback between rail and trail
- Other:** 21–31+ trains pass daily; speed varies between 25–50 mph
- City population:** 792,860; density of 2,232 per square mile

Three Rivers Heritage Trail, Pittsburgh, Pa.

The Three Rivers Heritage Trail is a multi-use trail network along the Pittsburgh riverfront. It connects commuters and tourists to neighborhoods, business districts and an expansive regional trail network that includes the Great Allegheny Passage. With ADA accessibility and interpretive signage regarding the history and ecology of the region, the trail system earned National Recreation Trail status in 2010.

- Length:** 24 miles, 6 miles rail-with-trail
- Design:** 12-foot wide asphalt trail; >50 feet setback between rail and trail.
- Other:** 822,873 visits annually; \$8.3 million in annual economic impact
- City population:** 305,840; density of 5,521 per square mile

Richmond Greenway, Richmond, Calif.

The Richmond Greenway is a 3-mile rail-trail bordered by 32 acres of community-designed artwork, urban agriculture and recreational space in a densely populated, underserved community in Richmond, California. The trail connects to the Ohlone Greenway, connecting trail users with the city of Berkeley.

- Length:** 3 miles, 1.3 miles rail-with-trail
- Design:** 8-foot wide, alternating asphalt and crushed stone; 25 feet between rail and trail
- Other:** 135 passing commuter trains a day, maximum speed of 80 mph
- Approximate cost (design/construction):** \$4.1 million
- City population:** 107,570; density of 3,309 per square mile



Midtown Greenway, Minneapolis, Minn.

Opened in 2000 and expanded in 2007, the Midtown Greenway is a 5.5-mile rail-trail connecting Uptown Minneapolis and Chain of Lakes with the Mississippi River Trail system. For much of its length, the trail follows a sunken railroad bed and is connected to street-level businesses via stairs and ramps. Community gardens, public space and a bike cooperative set the tone for the trail, which parallels the diverse and economically vibrant Lake Street corridor just a block away. With the exception of facilities around the University of Minnesota, the Midtown Greenway is the most heavily utilized bikeway in the Twin Cities.

- Length:** 5.5 miles
- Location:** Trail located below street level
- Other:** Three lanes wide (walking, biking in each direction)
- Approximate cost (design, construction):** \$25.7 million
- City population:** 400,000; density of 7,287 per square mile



Cedar Lake Trail, Minneapolis, Minn.

The Cedar Lake Trail links the Mississippi River with the lake district on the north side of downtown Minneapolis. The trail passes through the city via a tunnel under Target Field (baseball stadium) and parallels an active rail line west to the lakes. The trail provides both a commuter and recreation connection to the larger Twin Cities greenway system from downtown.

- Length:** 7.9 miles, all rail-with-trail
- Location:** Changing grade separation, but generally elevated 5 feet above railroad tracks
- Other:** 12-foot-wide two-lane asphalt path, before branching into three separate lanes
- Approximate cost:** \$9.2 million
- City population:** 400,000; density of 7,287 per square mile



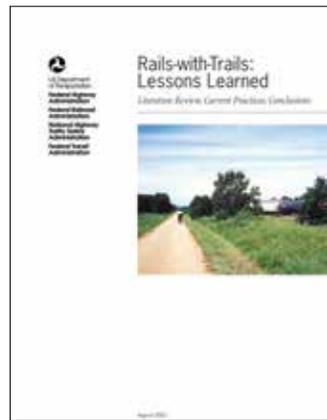
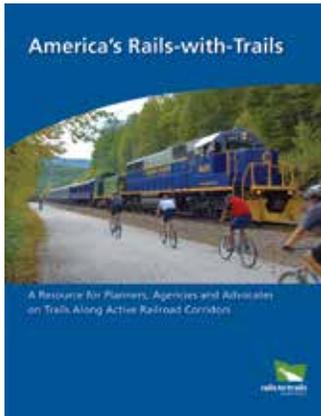
Dequindre Cut Greenway, Detroit, Mich.

The Dequindre Cut Greenway runs through a sunken railroad trench connecting the Riverfront and nearby Detroit RiverWalk to the Eastern Market commercial district and neighborhoods in between. Dotted with artwork and graffiti, the greenway is part of a riverfront transformation project that attracts three-million users annually. The trail project was recently awarded a \$10 million TIGER grant for additional expansion and has been a catalyst for \$18 million in adjacent property investments.

- Length:** 1.35 miles
- Location:** Trail located mostly below street-level
- Other:** 20-foot-wide paved pathway, separate lanes for walking and biking; notable for renowned graffiti
- Approximate cost:** \$3.5 million
- City population:** 688,700; density of 5,142 per square mile

FROM LEFT TO RIGHT: © PAYTON CHUNG, © MATT JOHNSON, © FLICKR USER WYLLIEPOON

DESIGN GUIDELINES



This section provides specific design guidelines and standards pulled from a variety of authoritative sources on multi-use trails and rails-with-trails, as listed below:

[America's Rails-with-Trails: A Resource for Planners, Agencies and Advocates on Trails Along Active Railroad Corridors \(Rails-to-Trails Conservancy, 2013\);](#)

[Guide for the Development of Bicycle Facilities \(American Association of State Highway and Transportation Officials, 2012\);](#)

[Rails-with-Trails: Lessons Learned \(U.S. Department of Transportation, 2002\);](#) and

[Trail Planning, Design, and Development Guidelines \(State of Minnesota, Department of Natural Resources, 2006\).](#)

As a multi-use trail, the New York Avenue Rail-with-Trail must accommodate a wide range of users, including pedestrians, bicyclists and those in wheelchairs. In addition to traditional upright bicyclists, tandem bicyclists, recumbent bicyclists and bicyclists pulling trailers should all be accommodated in the trail design. It is anticipated that motorized use on the trail, with the exception of motorized wheelchairs, will be prohibited. At minimum, trail design must include:

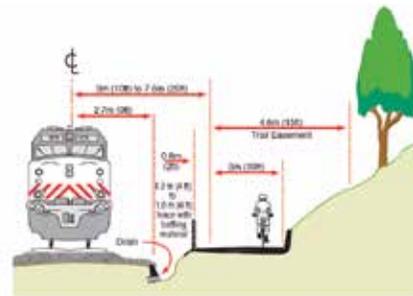
- Pavement width: 10 feet, with a wider pavement width of up to 15 feet recommended for high-traffic trails (8 feet is acceptable only for short distances where physical constraints limit a wider trail);
- Shoulder width: 3 feet, with a 5-foot shoulder recommended to the edge of a downward slope;
- Grade: should average less than 5 percent (10 to 12 percent grades acceptable only for very short distances);
- Cross slope: 1 percent to allow for drainage;
- Vertical clearance: 10 feet (8 feet is acceptable only in constrained areas);
- Setback from railroad centerline: at least 10 feet, with 25 feet a more desirable minimum—adequate separation should be determined through discussions with the railroad; and
- Barrier: fence between trail and rail line if separation is less than 25 feet; location and type should be determined through discussions with the railroad.

Design recommendations made in this report draw from the guidance summarized above. Before construction begins on any trail segment, a professional must expand on these minimum guidelines and draw up more specific designs.

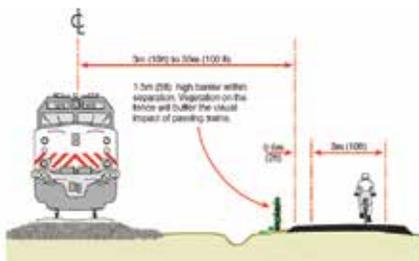


Trail section (typical) with vegetative buffer and sidewalk.

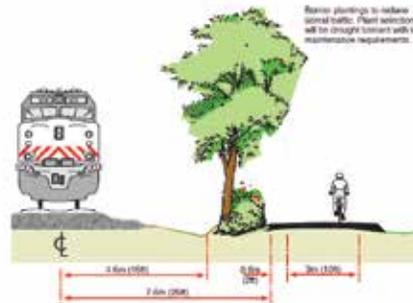
Figures at right and below provide suggested design guidance for setback, separation and barriers between rails-with-trails and active railroad corridors. For more information, see the U.S. Department of Transportation manual, *Rails-with-Trails: Lessons Learned*, figures 5.10, 5.13 and 5.17.



Minimum rail-with-trail setback—constrained sections (depending on situation).

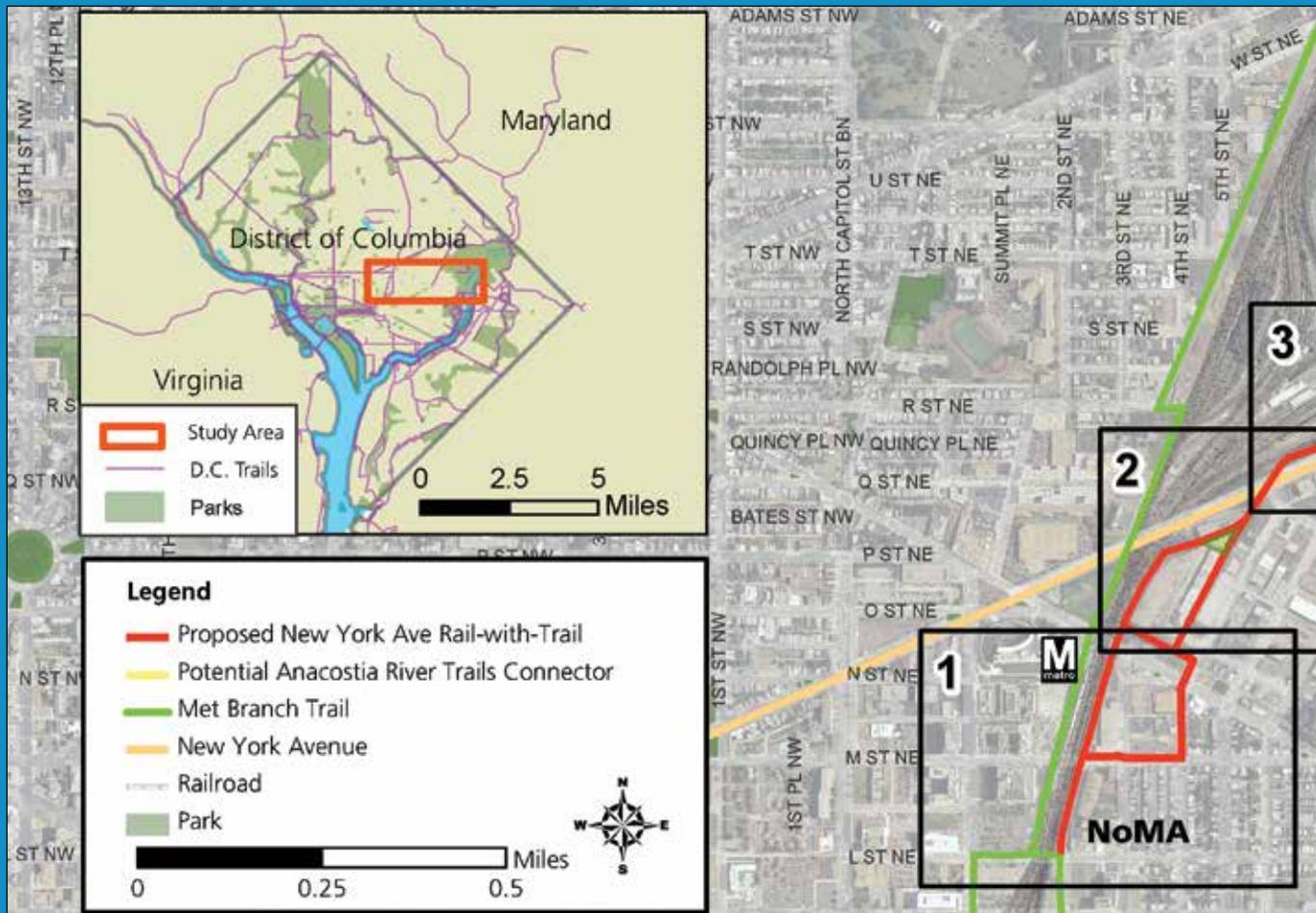


Minimum rail-with-trail setback depends on specific situation.

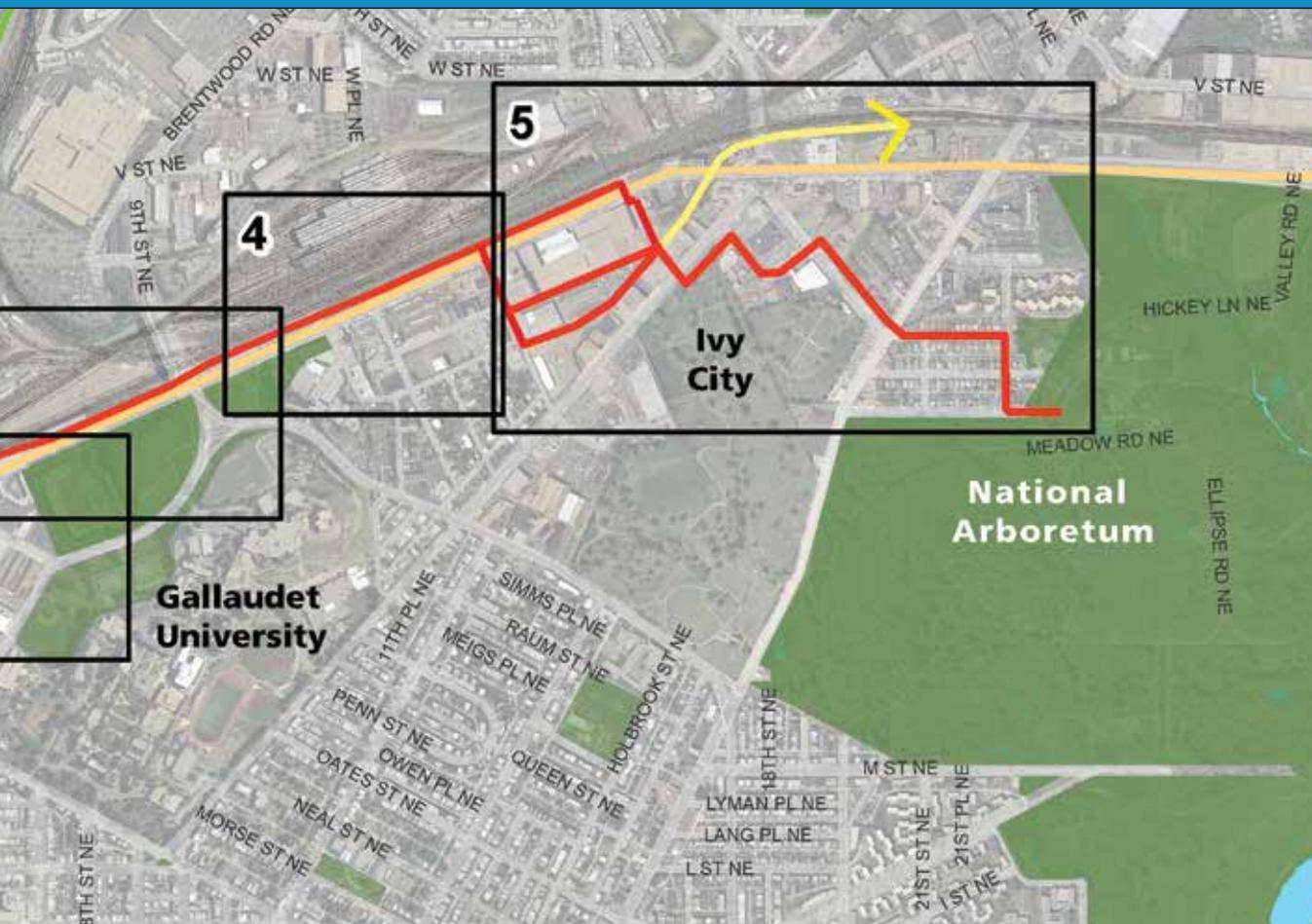


Trail separation example—using vegetation as a separation technique.

SEGMENT ANALYSIS AND RECOMMENDED TRAIL ALIGNMENT



The study area is located entirely in the Northeast quadrant of Washington, D.C., and stretches from L Street and 2nd Street to the U.S. National Arboretum. For this study, the proposed trail corridor is segmented into five sections based on characteristics of surrounding location and land use. The recommended trail alignment is indicated on the map above and fully described in each segment analysis. At approximately 2.5 miles, the preferred alignment assumes that the trail will serve as a direct, largely traffic-free facility for bicyclists and pedestrians traveling through Northeast Washington, D.C., from L Street, NE, to the entrance of the U.S. National Arboretum on R Street, NE. Each segment analysis considers trail development feasibility through the examination of opportunities, challenges and existing property ownership.

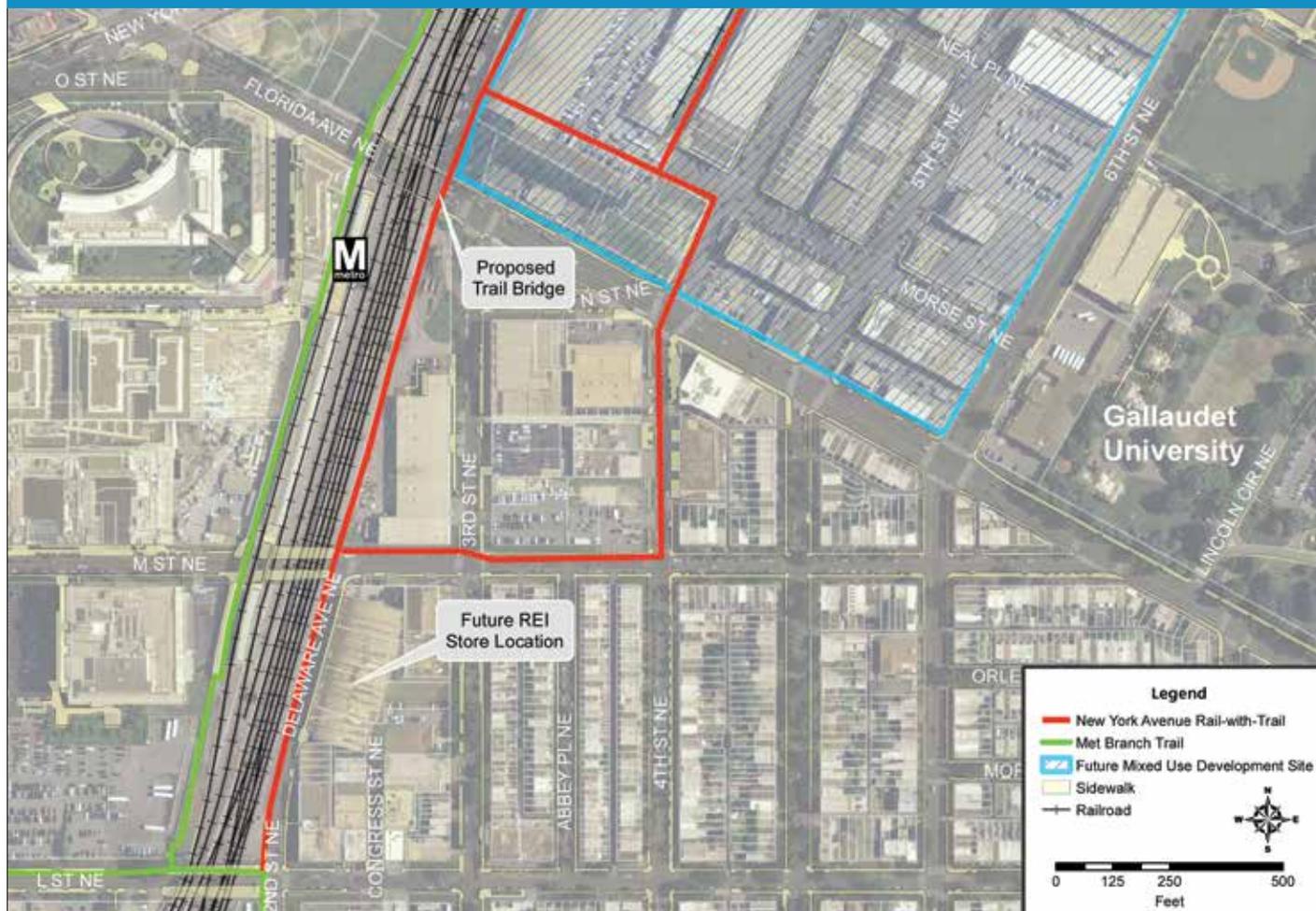


#	SEGMENT ENDPOINTS	LENGTH	PROPOSED ALIGNMENT
1	L Street to Florida Avenue	1580 feet / 0.3 mi.	Connect to Metropolitan Branch Trail via proposed off-street trail and/or existing and planned bicycle facilities (bike lanes and cycle tracks). Pedestrian bridge over Florida Avenue.
2	Florida Avenue to New York Avenue Tunnel	1355 feet / 0.26 mi.	Run through existing commercial and planned mixed-use development, an off-street trail parallel to rail corridor and bicycle facility improvements to connect through Union Market development to tunnel under New York Avenue.
3	New York Avenue to 9th Street	1578 feet / 0.3 mi.	Use former railroad tunnel to connect trail under New York Avenue; use combination of active railroad and city-owned right-of-way to continue alignment on north side of New York Avenue, under 9th Street.
4	9th Street to Fenwick Street	2306 feet / 0.44 mi.	Continue trail along north side of New York Avenue on railroad and city-owned right-of-ways with improved crossings at 16th Street and Fenwick Street.
5	Fenwick Street to U.S. National Arboretum	6072 feet / 1.15 mi.	Cross New York Avenue at Hecht Warehouse development, extend trail route as on-road bicycle facilities and improved crossings at Fenwick Street and 16th Street to entrance of the U.S. National Arboretum at R Street.

SEGMENT 1: L STREET TO FLORIDA AVENUE

Segment 1

New York Avenue Rail-with-Trail



Length: 1,580 feet or approximately 0.3 mile

Location: From L Street, NE, and 2nd Street, NE, this segment extends north past the Uline Arena (future REI store location) along Delaware Avenue, NE, and the Amtrak corridor; then from M Street, NE, continuing north along the rail line to Florida Avenue, NE.

Recommended Trail Alignment: On-street bike facility and sidewalk on Delaware Avenue, NE, from L Street, NE, to M Street, NE, (if separate bike infrastructure cannot be accommodated on the narrow street, existing sharrows could remain). Two options between M Street, NE, and Florida Avenue, NE: 1) parallel to the active railroad corridor, requiring a ramp at M Street, NE, and new pedestrian bridge over Florida Avenue, NE; and/or 2) two-way cycle track on M Street, NE, to 4th Street, NE, with continued two-way cycle track on 4th Street, NE. New development plans on the north side of Florida Avenue, NE (between 3rd Street and 4th Street, NE) could accommodate multiple trail connections and facilitate trail oriented development (see page 28).

Opportunities: Extending the trail to L Street, NE, will create a direct connection with the Metropolitan Branch Trail and the protected bike lane at M Street, NE. Planned residential redevelopment of the Central Armature Works site may provide an opportunity to incorporate the trail into the new plans, providing a valuable amenity for future residents.

Challenges: Planned redevelopment of the Central Armature Works site may prove a barrier to trail development if construction begins before trail design is determined or if the developer is unwilling to negotiate. There is also a significant grade change between the Central Armature Works site and Delaware Avenue, NE. The narrow street right-of-way on Delaware Avenue, NE, between Uline Arena and the elevated Amtrak corridor could also make the installation of a separated bike facility difficult.

Property Ownership: Between L Street, NE, and M Street, NE, the trail would be on Delaware Avenue, NE, using city-owned street right-of-way. Between M Street, NE, and Florida

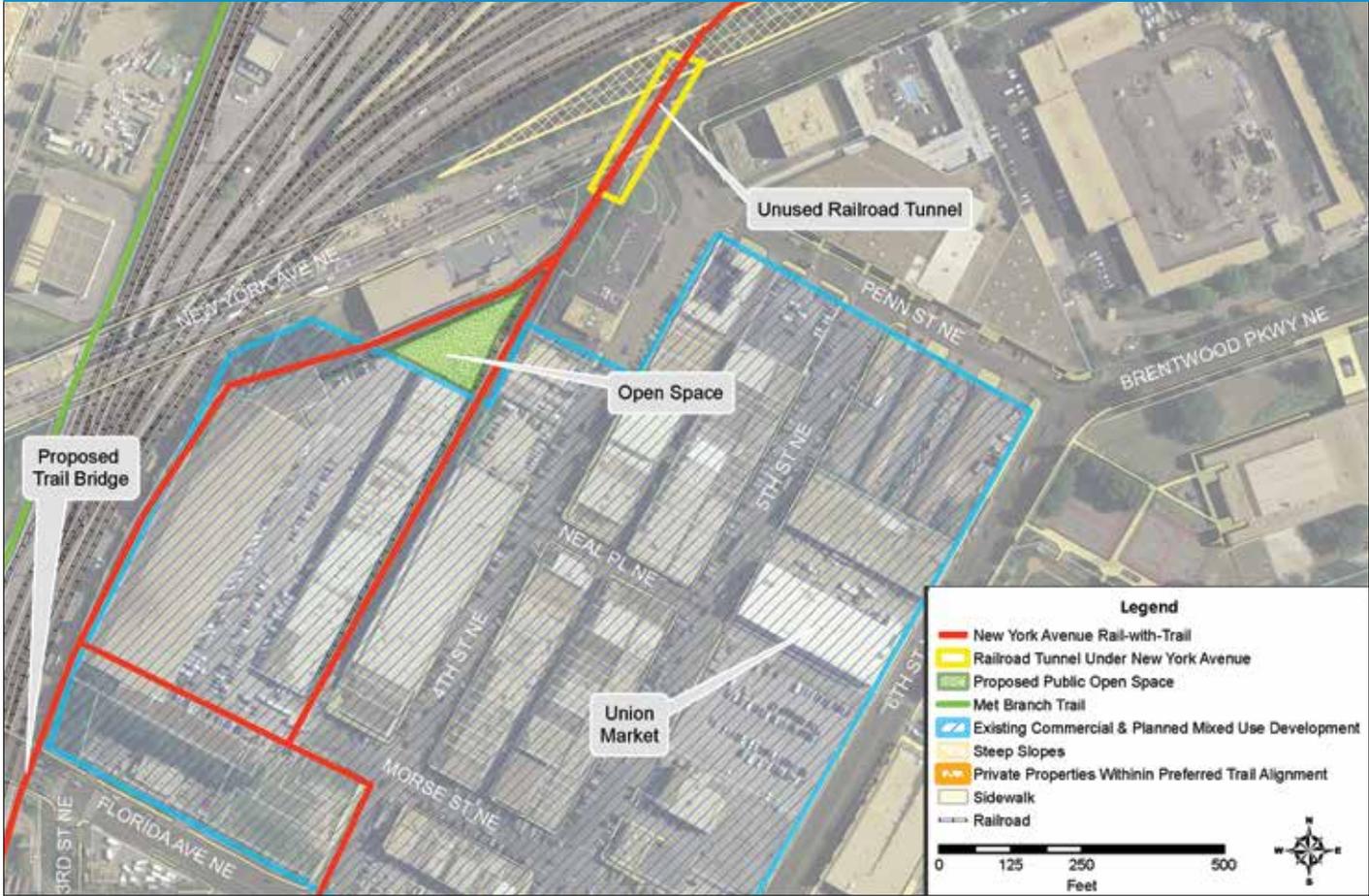


View of active rail line looking west from M Street, NE.

Avenue, NE, the land is owned by Central Armature Works, Inc. The land immediately north of Florida Avenue, NE, is owned by the city.

SEGMENT 2: FLORIDA AVENUE TO NEW YORK AVENUE TUNNEL

Segment 2 New York Avenue Rail-with-Trail



Length: 1,355 feet or approximately 0.26 mile

Location: This segment extends north from Florida Avenue to the southern mouth of the New York Avenue Tunnel, with several route options through the Union Market site.

Recommended Location of Trail: The preferred alignment for commuting would extend north along the active rail line from a proposed trail bridge over Florida Avenue, eventually curving east toward the tunnel along the southern edge of an existing storage facility. This alignment would run entirely on District-owned land and provide the most direct connection between New York Avenue and points south (NoMa, Metropolitan Branch Trail). A supplemental and complementary route would use the former rail corridor south of the tunnel or the current parking lot between two industrial buildings immediately to the west. Additionally, bicycle facilities on 3rd Street, NE, would enhance trail connectivity. These trail network options would provide direct and accessible connections to existing and future development in the area.

Opportunities: This segment runs directly through an area planned for the highest residential density in the subject area, offering a valuable opportunity for enhanced pedestrian and bicyclist access to a large mix of residential and commercial destinations. A planned park along the trail near the southern mouth of the tunnel provides an opportunity for much-needed green space in the neighborhood. Linking the activated area with the railroad tunnel also provides an opportunity for high-traffic programming of the space, including artwork, music and a variety of other temporary and permanent uses. The linear nature of the trail may also provide an opportunity for various development projects to coordinate their efforts as the trail intersects and links new mixed-use projects.

Challenges: The presence of several developers eager to begin construction of various projects could prove to be a major challenge in accommodating the trail's route(s) through the Union Market area. Ensuring user safety in and around the railroad tunnel may also be challenging, although this could likely be addressed through adequate lighting and programming.

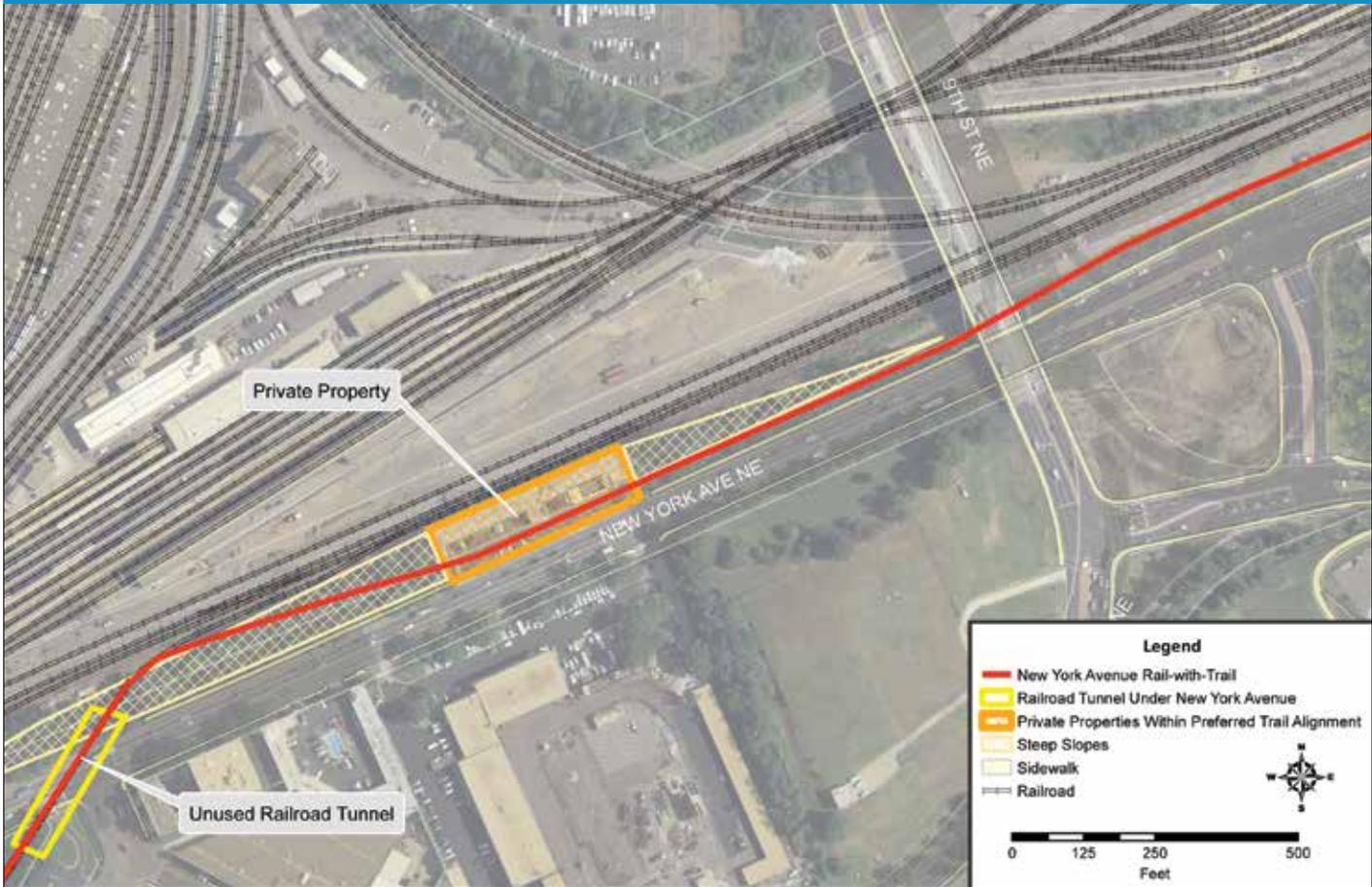


Former rail tunnel under New York Avenue, looking northeast from the Union Market area.

Property Ownership: The vast majority of the property required for this segment's alignment is owned by the District of Columbia, including the land immediately adjacent to the active railroad corridor and just south of the tunnel entrance. Alternative trail alignments between Florida Avenue and the rail tunnel could also use city-owned street right-of-way (4th Street), while a trail connection to a proposed pedestrian gateway along Florida Avenue may use small portions of private property owned by Level 2 Development and EDENS. These properties are slated for mixed-use redevelopment as The Highline at Union Market and Gateway Market Center, respectively.

SEGMENT 3: NEW YORK AVENUE TUNNEL TO 9TH STREET

Segment 3 New York Avenue Rail-with-Trail



Length: 1,578 feet or approximately 0.3 mile

Location: From the tunnel under New York Avenue, this segment extends east to 9th Street and is a combination of active Amtrak right-of-way and city right-of-way (New York Avenue corridor).

Recommended Trail Alignment: Two options are presented:

1. With existing building footprint (Howard Johnson Inn on north side of New York Avenue), use portions of Amtrak right-of-way for a graded incline from the tunnel onto city right-of-way on the north side of New York Avenue. With consent from property owner, reconfigure existing hotel parking lot to accommodate trail and continue on city right-of-way under 9th Street; or
2. If existing building is removed, then use right-of-way to create a ramp, not to exceed 8.3 percent slope (ADA guidelines), to extend the trail on the edge of Amtrak right-of-way and directly through the parcel where the hotel currently exists. Use existing railroad service road to cross under 9th Street.

Opportunities: Trail will improve conditions on the north side of New York Avenue for bicyclists and pedestrians where sidewalks are either nonexistent or narrow. Incorporating improved crossing treatments at the New York Avenue and 4th Street, NE, intersection will also provide much safer conditions for pedestrians and bicyclists crossing New York Avenue. Use of the tunnel for trail development provides a continuous route of travel for trail users traveling to and from Ivy City and also presents opportunities for programmable public space.

Challenges: Negotiating use of Amtrak property may be difficult due to the volume and speed of train traffic in this location. Steep slope will require ramp, and existing structure (i.e., the hotel) obstructs desired trail alignment.



The Howard Johnson Inn on New York Avenue perched above the active Amtrak line.

Property Ownership: Distance between New York Avenue right-of-way boundary and the railroad tracks varies between 80 and 100 feet. Amtrak owns the active corridor, with distance from the track to the southern right-of-way boundary of approximately 50–70 feet and city-owned right-of-way 35–45 feet. One private property owner, Howard Johnson Inn, intersects this segment.

SEGMENT 4: 9TH STREET TO FENWICK STREET

Segment 4

New York Avenue Rail-with-Trail





View of corridor looking northeast from 9th Street bridge.

Length: 2,306 feet or approximately 0.44 mile

Location: This segment parallels the active rail line and New York Avenue through a mix of property owned by Amtrak, the District of Columbia and one private property owner. The east end of this segment includes the Hecht Warehouse District.

Recommended Trail Alignment: Within Amtrak or New York Avenue right-of-way immediately parallel to both New York Avenue and the rail line between 9th Street and Fenwick Street with intersection of private property between Fairview Avenue and Kendall Street. Improved pedestrian crossing of New York Avenue at Fenwick Street recommended to link off-street trail with on-street bicycle facilities.

Opportunities: Despite existing crosswalks at Fairview Avenue, Kendall Street and Fenwick Street, the north side of New York Avenue lacks sidewalks along this segment. Trail development would improve bicycle and pedestrian safety and access on New York Avenue by providing a dedicated route of travel with greater separation from traffic. The wide New York Avenue right-of-way between Kendall Street and 16th Street (see Segment 5), intermittently used for vehicle parking, also provides an opportunity for creation of a linear park, farmers market or other public open space.



The corridor northeast of Kendall Street, currently used for parking and proposed as future public open space.

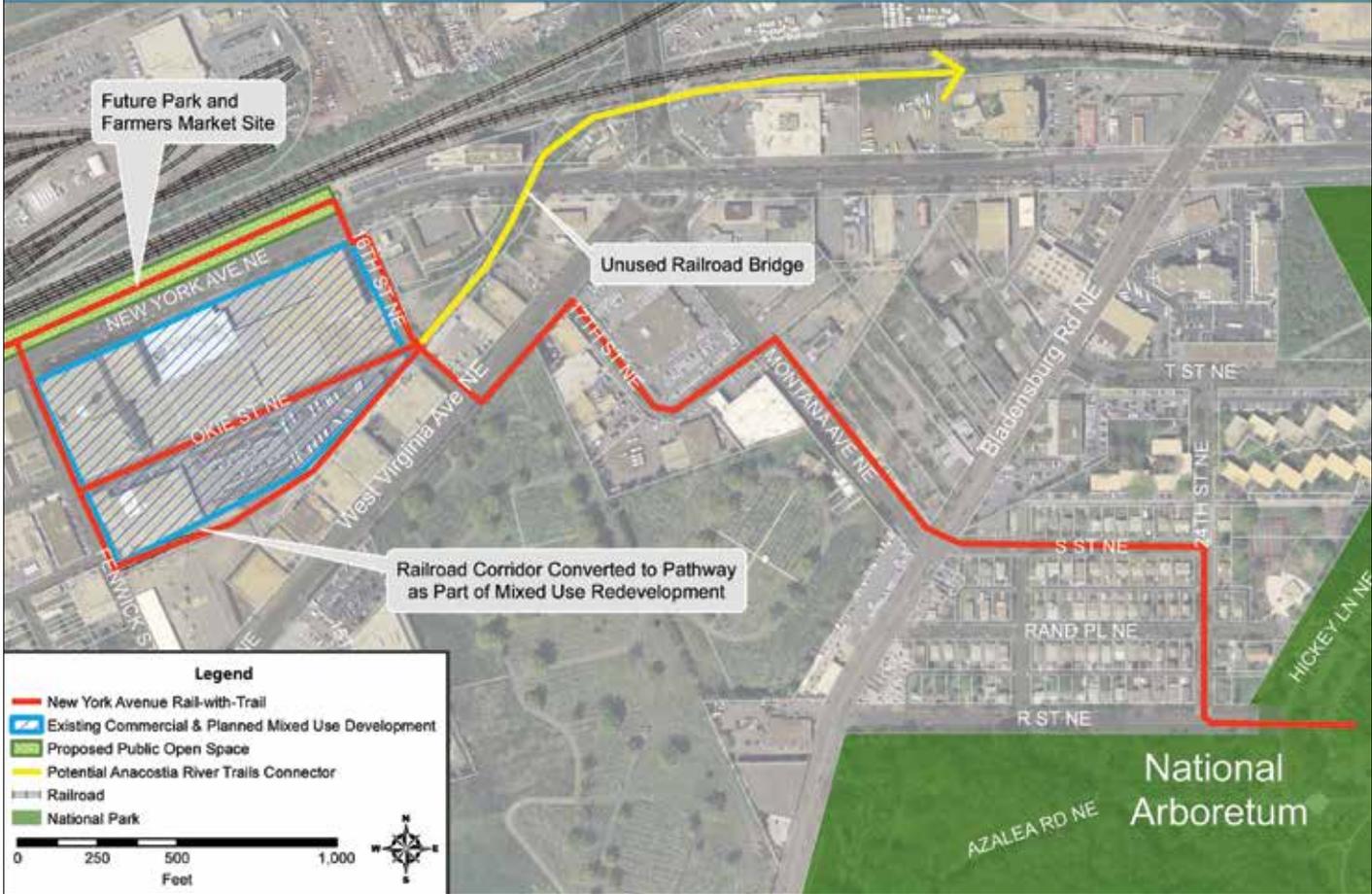
Challenges: Like much of the rest of the corridor, a significant challenge could come from negotiating with Amtrak to allow a trail in their active right-of-way. Coordination with Amtrak to accommodate their various service needs, including allowing occasional vehicle access on the trail, may also be a necessary challenge. Another significant and potentially costly challenge is the presence of the privately owned gas station and auto service center, which currently obstruct preferred trail alignment.

Property Ownership: From 9th Street to Fairview Avenue, the land required for the trail is owned by Amtrak. Between Fairview Avenue and Kendall Street, a gas station and auto service center owned by 1230 New York LLC stands on the trail's preferred alignment. From Kendall Street to Fenwick Street, the trail would run on the wide New York Avenue right-of-way controlled by the District.

SEGMENT 5: FENWICK STREET TO U.S. NATIONAL ARBORETUM

Segment 5

New York Avenue Rail-with-Trail





The corridor on the north side of New York Avenue, currently used for parking and storage and proposed as public open space.

Length: 6,072 feet or approximately 1.15 miles

Location: North side of New York Avenue from Fenwick Street, NE, to 16th Street NE, paralleling the active rail corridor and continuing east through Ivy City to the U.S. National Arboretum.

Recommended Trail Alignment: Within Amtrak or New York Avenue street right-of-way immediately parallel to both New York Avenue and the rail line between Fenwick Street, NE, and 16th Street, NE. Improved pedestrian crossings of New York Avenue at Fenwick Street, NE, and 16th Street, NE, will transition off-street trail to on-street bicycle facilities along Fenwick Street, NE, and 16th Street, NE, immediately south of New York Avenue to access Hecht Warehouse District via Okie Street, NE, and former railroad corridor immediately south. On-road bicycle facilities (bike lanes and/or cycle tracks) should continue the trail route through Ivy City to the U.S. National Arboretum entrance on R Street, NE, with an improved crossing treatment at Montana Avenue, NE, Bladensburg Road, NE, and S Street, NE.

Opportunities: The trail will improve conditions on the north side of New York Avenue for bicyclists and pedestrians where



The corridor northeast of Fenwick Street, currently used for parking and proposed as future public open space.

sidewalks are nonexistent. Incorporating improved crossing treatments at 16th Street, NE, and Fenwick Street, NE, will also provide much safer conditions for pedestrians and bicyclists crossing New York Avenue. The trail and crossings will likewise provide greater safety and accessibility for pedestrians and cyclists to the many future amenities planned in the Hecht Warehouse District.

Challenges: Negotiating use of Amtrak property may be difficult due to the volume and speed of train traffic in this location. Creating improved pedestrian and bicycle crossings of New York Avenue may require a traffic study.

Property Ownership: Between New York Avenue and the railroad tracks, the distance averages approximately 80 feet. Amtrak owns the active corridor, with the distance from the track to the southern right-of-way boundary being approximately 50 feet and the city-owned street right-of-way approximately 30 feet. South of New York Avenue, the trail route would utilize city-owned street right-of-way. Additionally, an off-road alignment on the east side of Montana Avenue could be incorporated in the development of an adjacent parcel owned by Douglas Development Corp.

NEW YORK AVENUE RAIL-WITH-TRAIL CONCEPT



Paved shared-use path between active rail corridor and New York Avenue, east of 9th Street.

The recommended trail alignment described in the Segment Analysis provides a direct, mostly off-street connection from the U.S. National Arboretum through Ivy City and Union Market to the Metropolitan Branch Trail. The New York Avenue Rail-with-Trail will accommodate a wide range of users, including pedestrians and bicyclists of varied abilities. The following recommendations establish a conceptual foundation for future planning efforts. The trail and proposed connecting on-street facilities will need further design and engineering by a professional in future implementation phases, discussed in the final section of this study.

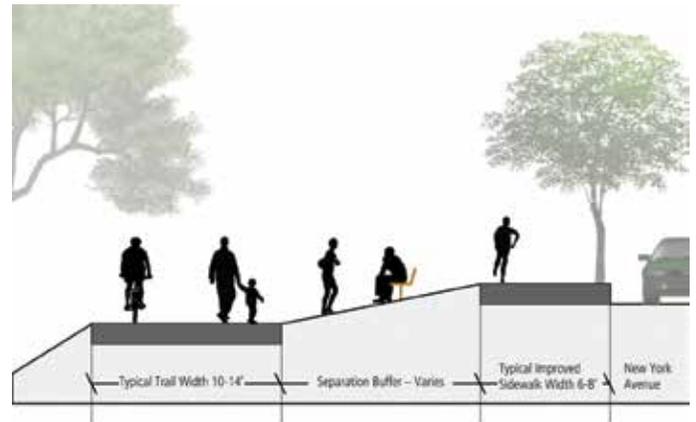
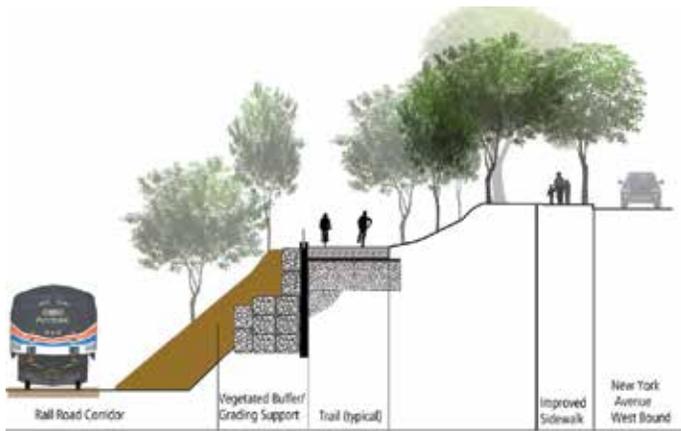
Recommendations

- Asphalt surface, minimum width of 10 feet and recommended width of 14 feet.
- A 25-foot minimum setback from railroad track centerline to edge of trail. Right-of-way constraints near the tunnel may necessitate a reduced setback, but majority of right-of-way near active rail will accommodate a 25-foot or greater setback.

- Construct fence or vegetative barrier, or both, between trail and existing edge of active rail to control access to railroad right-of-way.
- Add a pedestrian bridge or elevated trail across Florida Avenue and use former railroad tunnel under New York Avenue.
- Improve street crossings and develop on-street bike facilities from New York Avenue at Fenwick and 16th Streets, NE, to Bladensburg Road, NE, to provide safer, more accessible conditions for non-motorized connections to the U.S. National Arboretum.

Cost Estimate

- Estimated cost of trail design/build, excluding new pedestrian bridge: \$5 million
- Based on average cost of \$2 million/mile for comparable urban trails with similar design characteristics. Acquisition cost not included.
- Estimated total cost, including new bridge over Florida Avenue (estimated \$6 million): \$11 million



Trail section: potential trail location and illustrated grade separation from active rail west of 9th Street bridge.

Trail section with greenspace/viewing area buffer, west of 9th Street.



Paved shared-use path between active rail corridor and New York Avenue, west of 9th Street.

NEW YORK AVENUE RAIL-WITH-TRAIL CONCEPT



The unused railroad tunnel under New York Avenue (above) is essential to creating a safe, seamless trail connection from NoMa to Ivy City. The tunnel and surrounding space could also be developed as programmable public space for art installations, gardens, activities and events. Around the world, communities are developing trails in former railroad tunnels and incorporating design treatments and public art to make these spaces safe and inviting.

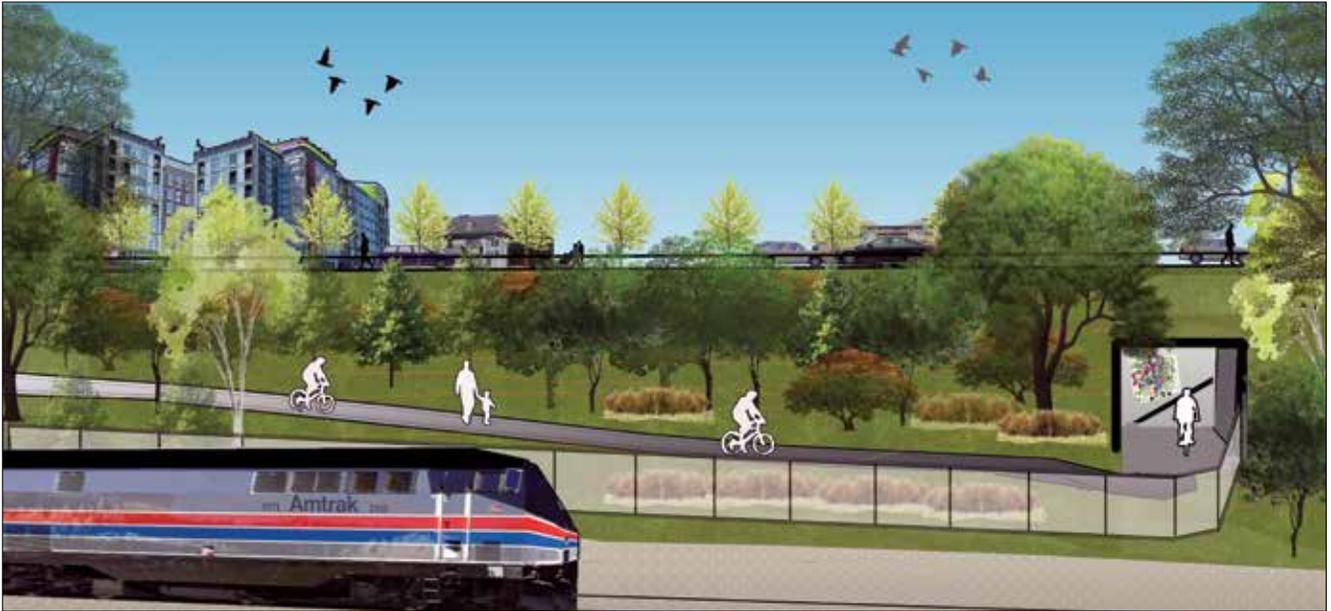


Han River Bike Path (Seoul, South Korea).

Future Atlanta Beltline (Atlanta, Ga.).

San Sebastian Bicycle Tunnel (San Sebastian, Spain).

FROM LEFT TO RIGHT: © CHASE CHISOLM, © BETH CLARK, © WILLIAM MARKS



Potential trail alignment with slight ramp leading to tunnel entrance. Fencing may be a necessary barrier for this constrained area.

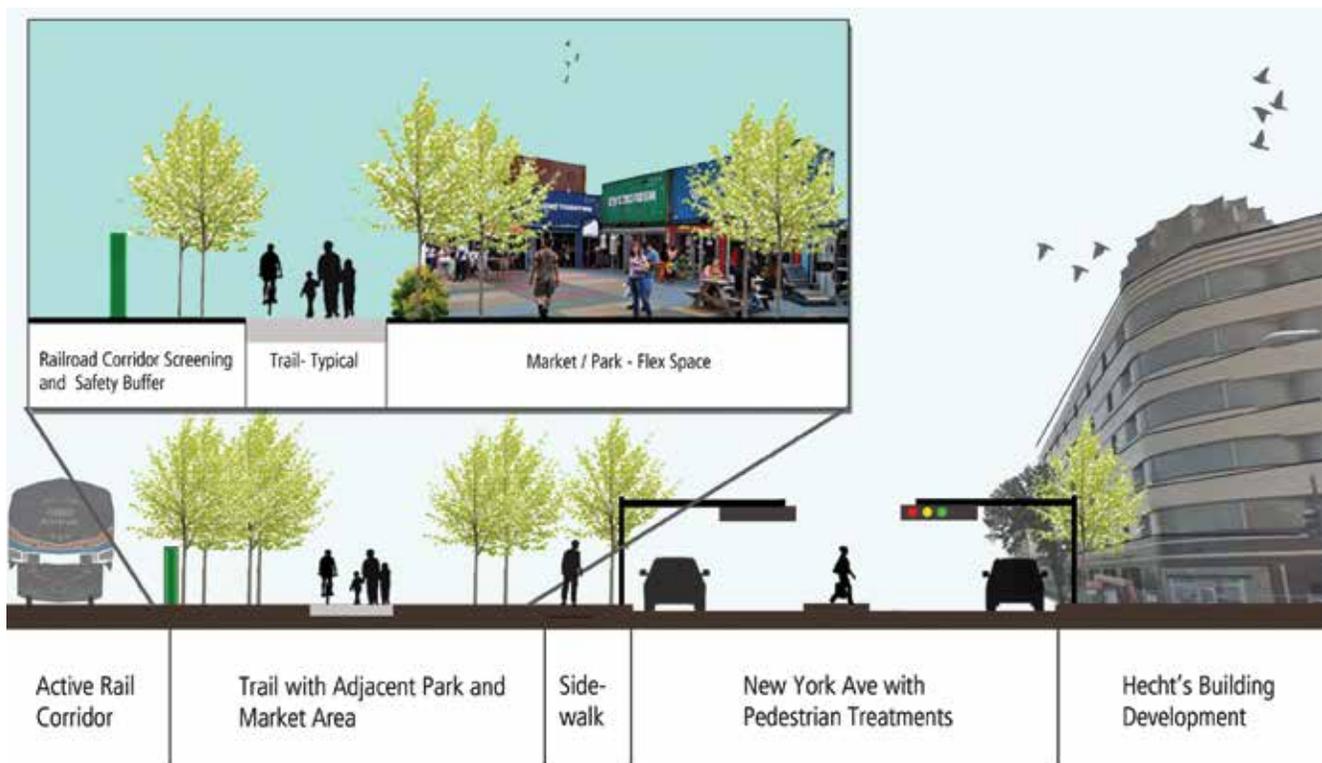


Proposed trail alignment under New York Avenue, utilizing tunnel. Continuing east, an existing structure impedes desired alignment, but sidewalk improvements on New York Avenue may accommodate a 10-foot wide trail at this location.

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Trail Oriented Development (TrOD) is a land and real estate development technique appropriate for urban areas that are transitioning from sites of former industry into adaptive spaces that can accommodate a mix of contemporary uses. This approach takes into consideration how new homes and local businesses can be served by robust trail networks with special attention given to how planners and real estate developers can use existing and planned trails to draw in economic activity, new tenants and business activity.

In the Union Market and Hecht Warehouse District areas, the New York Avenue Rail-with-Trail can act as an impetus for vibrant redevelopment of the built environment as both active and unused rail corridors provide infrastructure for trail development, an essential amenity to attract future residents, visitors and businesses to the area.



Trail section at New York Avenue near Fenwick Street intersection. Inset illustrates use of wide city-owned right-of-way for trail development and programmable space (e.g., farmers market).



Former railroad corridor south of Okie Street, NE, near Fenwick Street intersection.



Trail alignment could utilize former rail corridor for additional Trail Oriented Development opportunities.



New development (left) and established businesses that have created trailside storefronts and entrances (right) on the BeltLine in Atlanta, Ga.

NEW YORK AVENUE RAIL-WITH-TRAIL CONCEPT



Implementation—From Concept to Reality

The following section provides suggested next steps for advancing the vision of the New York Avenue Rail-with-Trail from concept to reality by drawing from observations presented in the Segment Analysis section and elaborating on ideas and images included in the Recommendations.

Corridor Use: Feasibility and Acquisition

Securing portions of the railroad right-of-way for trail development is one of the critical first steps to trail development within the proposed alignment. Although the city has identified the New York Avenue corridor as a desired location for trail

development, discussion and negotiation for use of adjacent railroad right-of-way has not begun. There are several methods used to acquire property for trail development. Rails-with-trails that are located within the railroad right-of-way often obtain

an easement or license agreement from the railroad. Additionally, access to a few privately owned parcels within the desired alignment will need to be considered and negotiated; other legal instruments like fee simple title may be more appropriate in these instances.

Evaluation of acquisition and use options and transfer conditions will involve negotiations between the railroad (Amtrak), their attorneys and real estate representatives, city leaders, attorneys and District Department of Transportation officials. Further inspection of the unused railroad tunnel should occur simultaneously to determine its structural integrity and feasibility for public use.

As part of the acquisition process, there are a variety of voluntary arrangements that address liability concerns. Many railroads require trail managers to indemnify the railroad or owner of the corridor, releasing them from liability. Occasionally, railroads require trail managers to carry supplemental insurance policies for the trail; but, in general, the trail management agency's municipal or state insurance policy satisfies the trail and railroad's insurance requirement.

Organizations like RTC and the Trust for Public Land could provide consultation assistance should the city pursue acquisition negotiations with the railroad.

Funding

Securing funding for trail development takes dedication and persistence. Much of the existing and planned multi-use trail infrastructure in Washington, D.C., was developed using a combination of federal and local capital funds. The New York Avenue Rail-with-Trail project, like most bicycle and pedestrian projects, is eligible for funding from federal programs like Congestion, Mitigation and Air Quality Improvement Program (CMAQ); Transportation Alternatives Program (TAP); and Recreational Trails Program (RTP). DDOT administers funds from these sources and prioritizes projects through the State Transportation Improvement Program (STIP). The New York Avenue Rail-with-Trail is included in DDOT's federal funding plan for design in 2016 and construction in 2017.

Given the location of the proposed trail and its relationship with planned and proposed mixed-use development, unique

opportunities exist to incorporate trail development as part of these planned projects and to seek support from the private sector. The city should identify existing and potential businesses and corporations that might be interested in financial support of the project through all phases of development.

Design and Construction

The process of designing and constructing the trail can occur once portions of the right-of-way have been acquired and funding is secured. Although the trail is identified in existing planning documents (2005 Bicycle Master Plan) and could be a new facility that supports long-range multimodal transportation plans (moveDC), it should be included in future citywide and regional planning efforts (e.g., updated Bicycle Master Plan) to be officially recognized as a priority project. Inclusion in these overarching plans ensures that trail development is coordinated with various city plans and policies that affect land use and public facility development decisions.

This study focuses on a preliminary examination of feasibility for trail development along New York Avenue in Northeast Washington, D.C., and is intended to set the foundation for future planning efforts, which should include robust public participation to ensure involvement from a wide and varied group of interested stakeholders.

Developing a detailed trail master plan will be necessary to identify site-specific conditions and offer more detailed strategies for necessary improvements, including: environmental conditions, physical improvements, trail amenities, detailed cost estimates and an implementation plan. Detailed construction plans and specifications will draw from the master plan and will guide trail construction.

Managing Entity

DDOT is the chief trail management agency in the District of Columbia, and their vast experience managing and maintaining the nearby Metropolitan Branch Trail, Anacostia Riverwalk Trail and others makes them the logical and most experienced choice to manage the New York Avenue Rail-with-Trail.

By having one citywide manager for all trails not on federal land, policies and procedures will be consistent, and users will

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appreciate that the resulting rules and regulations will likewise be consistent across all DDOT-managed trails. This will especially be important if the Metropolitan Branch Trail and New York Avenue Rail-with-Trail are directly connected. The designation of one dedicated DDOT staff member as the point of contact for all trails (position currently vacant) could also reduce confusion and lead to a speedier response when maintenance or other issues arise.

DDOT has recently expanded their snow removal program to include protected bike lanes and the Metropolitan Branch Trail and has purchased a small machine to navigate the smaller widths. It is logical that the proposed New York Avenue Rail-with-Trail would see the same level of basic attention after significant snow accumulation, as it would establish trail management consistency while only incrementally increasing equipment and labor costs, if at all. The District's Urban Forestry Administration, which trims vegetation overgrowth and clears debris along the Metropolitan Branch Trail, could enter into a similar relationship with DDOT's trail management staff to perform maintenance along the trail.

Friends Group/Additional Assistance

While an official "friends of the trail" group is not necessary in order to perform the most basic trail management, forming such a group can have a host of positive effects. For one, members would typically be more local to the trail than the managing agency, providing valuable eyes on the trail and a faster response for basic maintenance needs. Such groups can also assist with free and simple volunteer-led maintenance, such as trash pickup, sweeping and vegetation trimming. Through promotion and hosting of events on the trail, such as 5k runs, farmers markets and other neighborhood gatherings, such a group can drive traffic to the trail and instill both community pride and "ownership" of the trail.

Along the Metropolitan Branch Trail, the NoMa Business Improvement District (BID) has performed simple maintenance tasks—such as sweeping, litter removal and tree planting—where the trail passes through their coverage area. A similar arrangement for the New York Avenue Rail-with-Trail could be established with the NoMa BID where it passes through their coverage area. This arrangement could be replicated with one or more new BIDs covering Union Market and the Hecht Warehouse District as both areas develop further.

Uniquely, the recently opened Nike Factory Store in the Hecht Company Warehouse was established under the company's new "community store" format. Employees and management of the store are encouraged to volunteer for sport- and non-sport programs. The company also seeks to build partnerships with various community organizations in the Ivy City area. There is much potential with this initiative, and it would be wholly beneficial to establish a relationship with the store as the trail project gets under way.

Maintenance Tasks/Budget

Annual maintenance costs for an urban asphalt-surfaced trail average approximately \$3,000 to \$6,000 per mile. This includes such tasks as mowing, vegetation trimming and sweeping and snow, litter and graffiti removal. Less frequently, repair to trail signage and pavement markings, clearing of trail drainage systems or culverts and asphalt crack sealing is required. Resealing over the entire length of the trail should be performed approximately once every eight years at a cost of ap-

proximately \$25,000 per mile. The lifespan of an asphalt trail is approximately 15 to 20 years. At the end of its useful life, the entire trail surface will need to be replaced, at a cost similar to the trail surfacing cost during the initial construction phase.

Rails-with-trails have a unique set of maintenance concerns. In general, the adjacent railroad will not contribute to maintenance of the trail, although it will regularly clear vegetation adjacent to the tracks. Some railroads also require trail maintenance staff to complete an annual safety certification administered by the railroad and to coordinate with the railroad when performing maintenance within the rail right-of-way.

Conclusion

Transportation networks that prioritize development of bicycle and pedestrian facilities provide safe, accessible and affordable mobility for people of all ages and abilities. Cities across the country employ trails as a fundamental solution to the challenge of connecting people to popular network destinations like transit hubs, schools, employment centers and parks. Rails-with-trails are becoming increasingly popular as communities strive to fill in network gaps with limited available space.

The New York Avenue Rail-with-Trail is poised to become a key link in the city's trail network, providing a much-needed connection from downtown to Ward 5 neighborhoods and the U.S. National Arboretum. This study provides a vision for the development of a rail-with-trail that advances the goals of increased and improved mobility options in Ward 5, enhanced connectivity between and through Northeast Washington, D.C., neighborhoods and creation of dynamic public space through reuse of unused historic infrastructure. Further exploration of concepts presented in this study could help to move forward a project that has remained in the planning stages for many years closer to reality.

Like many cities in the United States, the location of rail lines in the District of Columbia has helped shape its commercial, neighborhood and industrial contours. Placement often segmented and divided communities; but that which once divided can also bind. Creative, shared use of the linear rail passageways can be a transformative agent as U.S. cities are reimagined and shaped to create healthy people and healthy places.





rails-to-trails
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