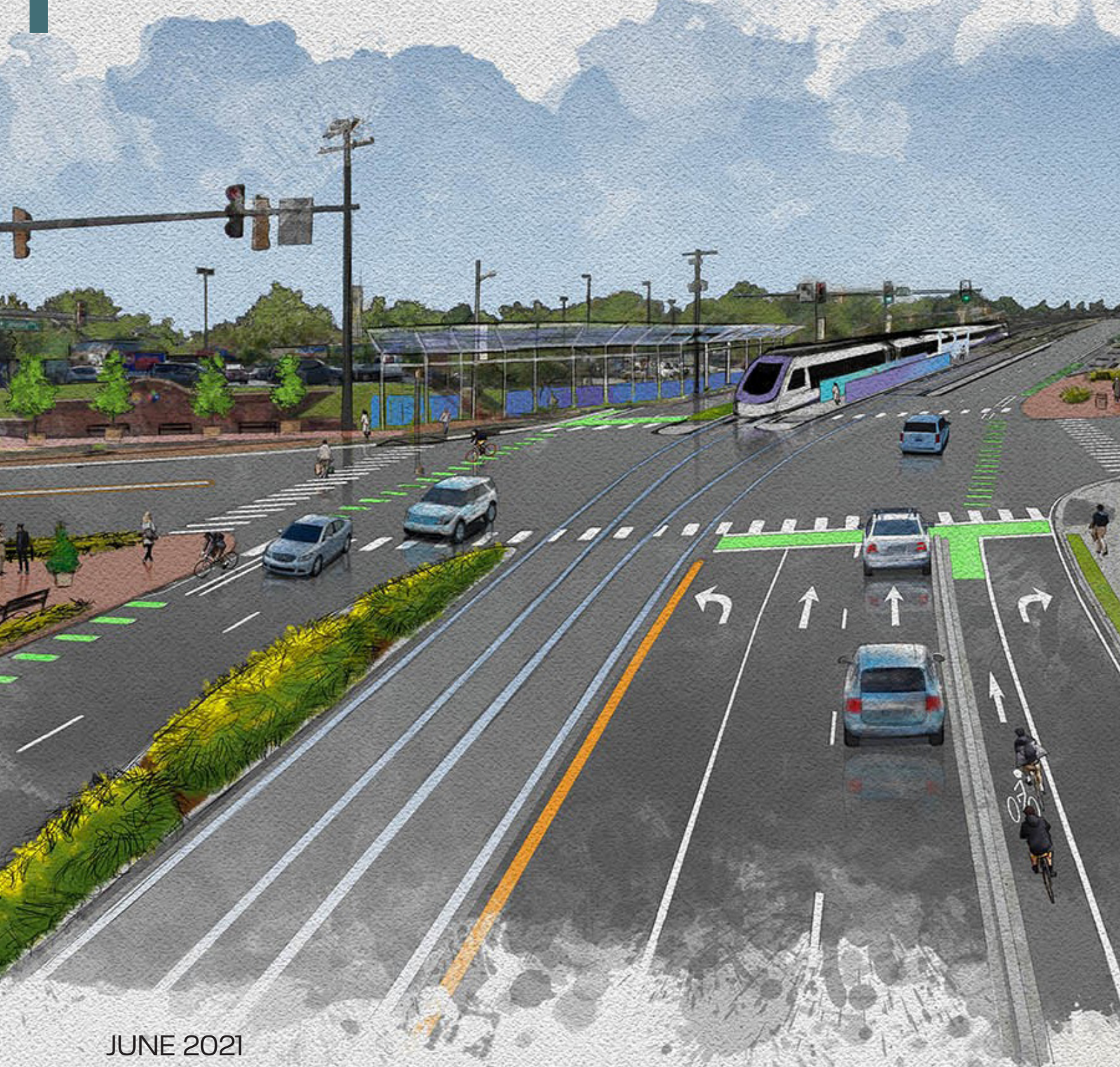


Northern Gateway

SPACES Study for MD 193

30% DESIGN AND ENGINEERING REPORT



JUNE 2021



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
Prince George's County Planning Department

Abstract

Date	June 2021
Title	Northern Gateway SPACES PAMC Project 30% Design and Engineering Report
Author	The Maryland-National Capital Park and Planning Commission
Subject	The Development of 30% Design and Engineering Plans to Better Accommodate All Modes of Transportation and Enhance the Public Realm along MD 193 (University Boulevard) in the Northern Gateway area
Source of copies	The Maryland-National Capital Park and Planning Commission 14741 Governor Oden Bowie Drive Upper Marlboro, MD 20772
Series number	221212306
Number of pages	42

The Northern Gateway Community Development Corporation (NGCDC) seeks to balance the needs of diverse users—pedestrians, bicyclists, transit users, and motorists—to shape an environment that ensures access, safety, and enjoyment of an approximately two-mile section of MD 193 (University Boulevard), now a busy, automobile-oriented environment in Langley Park. This project seeks to improve biking and pedestrian safety, better connect neighborhoods to the corridor and enhance the public realm. Significant investment in a new transit line, the Purple Line, has begun and the alignment for the portion that will serve the Northern Gateway area will run along University Boulevard, also known as the International Corridor. The International Corridor is a vibrant, diverse retail strip of African-American, South and Central American, Asian, and African businesses that provide essential goods and services to area residents. Along with new investment in transit, the new alignment provides the opportunity to link the corridor to a greater network of improved access and circulation and to integrate streetscape enhancements to a public realm that promotes a multi-modal environment and enhances a unique cultural and neighborhood identity. This report describes the goals, history, and recommendations for the Northern Gateway Strategies for Public-Space and Commercial-Corridor Enhancements (SPACES) Planning Assistance to Municipalities and Communities (PAMC) project. This project was funded PAMC program administered by the Prince George's County Planning Department.

Northern Gateway

SPACeS Study for MD 193

30% DESIGN AND ENGINEERING REPORT



June 2021

The Maryland-National Capital Park and Planning Commission

Prince George's County Planning Department

14741 Governor Oden Bowie Drive

Upper Marlboro, MD 20772

www.pgplanning.org

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The Maryland-National Capital Park and Planning Commission (M-NCPPC) is a bicounty agency, created by the General Assembly of Maryland in 1927. The Commission's geographic authority extends to the great majority of Montgomery and Prince George's Counties: the Maryland-Washington Regional District (M-NCPPC planning jurisdiction) comprises 1,001 square miles, while the Metropolitan District (parks) comprises 919 square miles, in the two counties.

The Commission has three major functions:

- The preparation, adoption, and, from time to time, amendment or extension of the General Plan for the physical development of the Maryland-Washington Regional District.
- The acquisition, development, operation, and maintenance of a public park system.
- In Prince George's County only, the operation of the entire county public recreation program.

The Commission operates in each county through a Planning Board appointed by and responsible to the County government. All local plans, recommendations on zoning amendments, administration of subdivision regulations, and general administration of parks are responsibilities of the Planning Boards.

The Prince George's County Planning Department:

- Our mission is to help preserve, protect and manage the County's resources by providing the highest quality planning services and growth management guidance and by facilitating effective intergovernmental and citizen involvement through education and technical assistance.
- Our vision is to be a model planning department of responsive and respected staff who provide superior planning and technical services and work cooperatively with decision makers, citizens, and other agencies to continuously improve development quality and the environment and act as a catalyst for positive change

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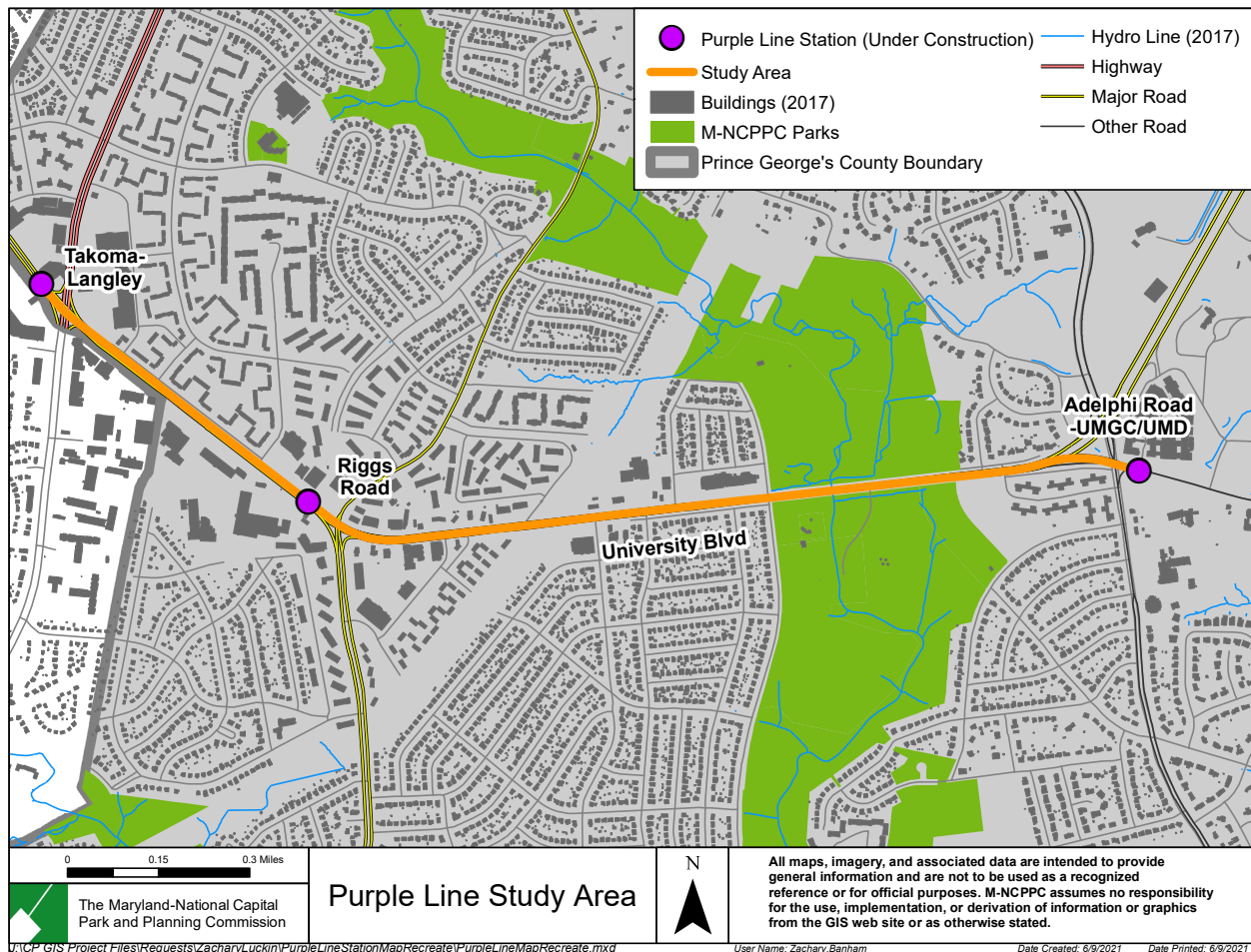
Introduction

SPACES

Strategies
for Public-
Space and
Commercial-
Corridor
Enhancements

The Northern Gateway Strategies for Public-Space and Commercial-Corridor Enhancements (SPACES) project is funded through the Planning Assistance to Municipalities and Communities (PAMC) program, administered by the Prince George's County Planning Department. The PAMC program offers planning, design, technical, and, in select cases, financial assistance for planning-related projects in response to specific requests from local municipalities and community organizations. The applicant for this PAMC project is the Northern Gateway Community Development Corporation (NGCDC), a 501(c)(3) nonprofit. The NGCDC seeks to balance the needs of diverse users—pedestrians, bicyclists, transit users, and motorists—to shape an environment that ensures access, safety, and enjoyment of an approximately two-mile section of MD 193 (University Boulevard), now a busy, automobile-oriented environment in Langley Park. This project seeks to improve biking and pedestrian safety, better connect neighborhoods to the corridor, and enhance the public realm. Significant investment in a new transit line, the Purple Line, has begun and the alignment for the portion that will serve the Northern Gateway area will run along University Boulevard, also known as the International Corridor. The International Corridor is a vibrant, diverse retail strip of African- American, South and Central American, Asian, and African businesses that provide essential goods and services to area residents. Along with new investment in transit, the new Purple Line alignment provides the opportunity to link the corridor to a greater network of improved access and circulation, and to integrate streetscape enhancements to a public realm that promotes a multi-modal environment and enhances a unique cultural and neighborhood identity. This report describes the goals, history, and recommendations for the Northern Gateway SPACES PAMC project.

Figure 1. Project Limits



Project Description

Project Goals

The goals of the Northern Gateway SPACES PAMC project are to:

- Improve biking and pedestrian safety
- Better connect neighborhoods to the corridor
- Enhance the public realm
- Develop 30% Preliminary Design and Engineering Plans and Construction Cost Estimate

The 30% Preliminary Design and Engineering Plans and Construction Cost Estimate would be used to make the project eligible for funding for final design and construction.

Project Team and Stakeholders

Project team members and stakeholders were identified at the initiation of the project and include:

- Prince George's County Department of Public Works and Transportation (DPW&T)
 - › Owns and maintains roadways intersecting the project limits
- Prince George's County Parks Department (DPR)
 - › Maintaining and developing parks within and adjacent to the project limits
- Maryland Department of Transportation State Highway Administration (MDOT SHA)
 - › Owns and maintains MD 193 (University Boulevard) and MD 193B (Campus Drive)
- MDOT Maryland Transit Administration (MTA)
 - › Owner of the Purple Line
- Prince George's County Planning Department
 - › Project manager
- NGCDC
 - › Project applicant
- STV
 - › Lead project consultant
- Grace E Fielder & Associates, Chartered
 - › Subconsultant to STV, responsible for Landscape Architecture and Site Design
- Nelson\Nygaard
 - › Subconsultant to STV, responsible for the Public Realm Assessment

Scope and Schedule

The project scope included a stakeholder meeting on September 13, 2019; community meeting on January 21, 2020; and a community meeting on November 17, 2020. The meeting minutes and comments from the stakeholder meeting and community meetings are included in Appendix A. Multiple pedestrian, bicyclist, roadway, site, and landscaping improvements were developed for discussion at the stakeholder meeting and refined to recommendations presented at the first community meeting. The Draft 30% Preliminary Design and Engineering Plans and Construction Cost Estimate were presented at the second community meeting.

Project Limits

The project limits are within MDOT SHA/MTA right-of-way along MD 193 (University Boulevard) and MD 193B (Campus Drive) between the Takoma-Langley and Adelphi Road-UMGC/UMD Purple Line stations, approximately two miles. The limits include three proposed Purple Line stations: Takoma-Langley, Riggs Road, and Adelphi Road-UMGC/UMD. The project limits are shown in Figure 1.

Roadway Classification

MD 193 (University Boulevard) is an MDOT SHA roadway classified as an Urban Principal Arterial. The design speed along MD 193 is 50 mph from the Takoma-Langley station to West Park Drive and 40 mph from West Park Drive to Adelphi Road, and the posted speed limit is 35 mph. The design speed along MD 193B is 30 mph and the posted speed limit is 25 mph. According to the MDOT SHA Internet Traffic Monitoring System (I-TMS), MD 193 had an average annual daily traffic (AADT) volume of 39,992 east of MD 650 (New Hampshire Avenue) and 29,802 west of Adelphi Road in 2017. The roadway has a varied width of 48-72 feet and is four to six lanes. Upon completion of the Purple Line, the roadway will be reduced to four lanes with turn lane pockets and a five-foot bicycle lane in both directions.

Public Realm Assessment Summary

The public realm assessment provides a quantitative analysis and evaluation of the study area primarily dependent on observations and experiences. The assessment details existing conditions and provides preliminary recommendations to improve bicycle safety, pedestrian safety and walkability, and streetscape enhancements at key intersections or areas where there is a concentration of activities. The public realm assessment was prepared to determine recommendations to fulfill the project goals. Recommendations from the assessment that were within the project scope and limits were included in the 30% Preliminary Design and Engineering Plans

and Construction Cost Estimate. Recommendations that were determined to be outside of the scope and the limits of the project may be implemented in future projects. The complete Public Realm Assessment is provided as Appendix B.

Existing Conditions

In order to assess the existing conditions of the corridor, an Irvine Minnesota Inventory was completed. The Irvine Minnesota Inventory is an audit tool for measuring built environment features that may be linked to active living.



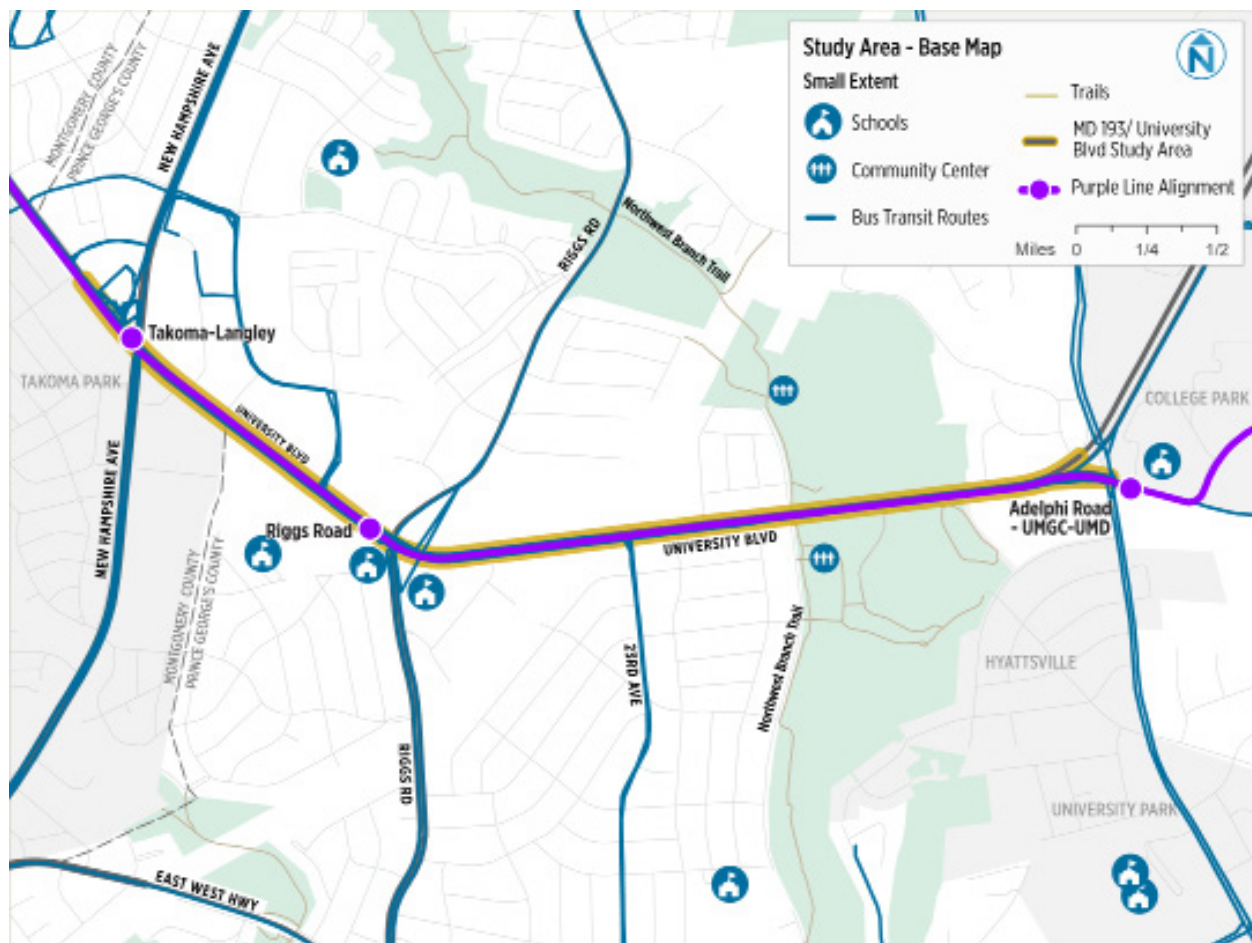
BY RYAN CRAUN/M-NCPPC PRINCE GEORGE'S COUNTY PLANNING DEPARTMENT



DEMOGRAPHICS

The Northern Gateway area is a vibrant mix of retail, residential developments, and commercial office space. The community is primarily composed of a Hispanic, 54 percent, and Black, 34 percent, population. University Boulevard is also known as the International Corridor with a combined population of more than 80,000 in the Northern Gateway area as of 2018. The community is predominantly composed of residents under 50 years of age with a median age of 32.4; 28 percent of residents are between 20 and 34 years old. Residents who drive alone to work comprise 49 percent of the population; 25 percent use transit, and 20 percent carpool to work.

Figure 2. Study Area Roadways



SOURCE: Find complete data sourcing in Appendix A



ROADWAYS

There are three major roadways throughout the study area, shown in Figure 2:

- MD 193 (University Boulevard)
- MD 650 (New Hampshire Avenue)
- MD 212 (Riggs Road)

With the existing street network, alternative routes within the study area are very limited. MD 650 and MD 212 are heavily used as the primary north-south connections; University Boulevard is the only east-west roadway within the Northern Gateway. The limited connectivity within the existing network presents the need for additional connections as future development scenarios are considered.

Figure 3. Sidewalk Network



SOURCE: Find complete data sourcing in Appendix A



PEDESTRIAN

Sidewalk coverage throughout the study area is not comprehensive and conditions vary widely along the corridor with gaps along University Boulevard as shown in Figure 3. Corridor sidewalks feature functional inadequacies, such as obstructions and varied widths, and are poorly maintained. Neighborhood coverage is inconsistent and limits pedestrian access to and from the corridor due to the disconnected development pattern. Additionally, pedestrian connections to and within the commercial plazas are largely nonexistent.

The major intersections of MD 193 at MD 650 and MD 193 at MD 212 feature clearly marked crosswalks with pedestrian push buttons and countdown signals. However, issues include long signal cycle lengths, which create long wait times for crossing pedestrians, and short crossing times. Additionally, pedestrian crosswalks across MD 193 are sparse, ranging from 330 to 2,100 feet apart within the study area. This leads to pedestrian non-compliance and midblock crossings.

Figure 4. Bicycle Network



SOURCE: Find complete data sourcing in Appendix A

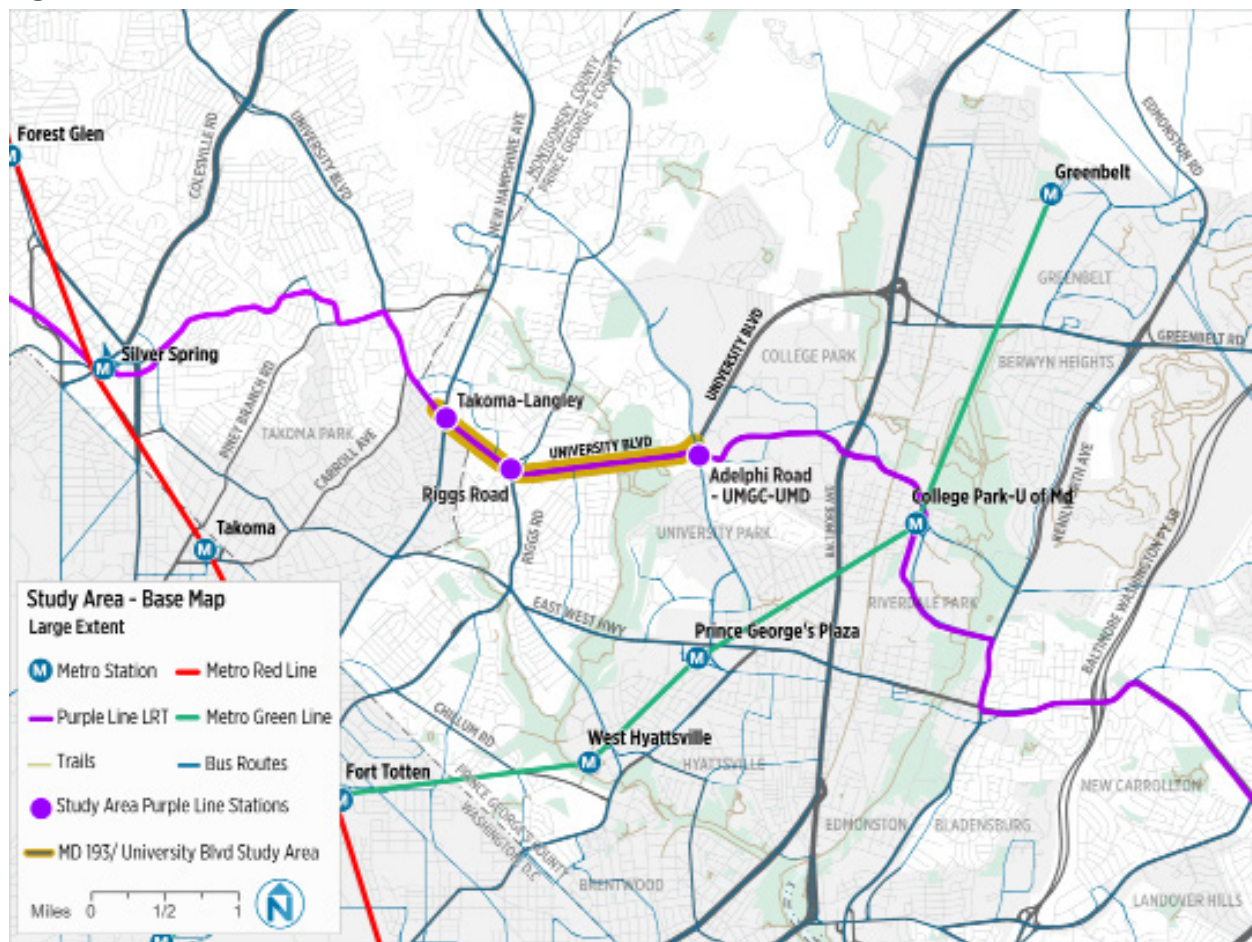


BICYCLES

Limited bicycle infrastructure is present within the Northern Gateway area with the only dedicated on-street facilities located east of the Northwest Branch Trail as shown in Figure 4. The Northwest Branch Trail provides off-street facilities through Valley Park. While bike rack usage data is unavailable, demand for the covered bike racks inside the Transit Center is high with the racks often operating close to capacity.

The Countywide Master Plan of Transportation proposes on-street bicycle lanes along University Boulevard and an expansion of the trail system. The proposed Purple Line includes five-foot-wide bike lanes along University Boulevard.

Figure 5. Transit Network



SOURCE: Find complete data sourcing in Appendix A



TRANSIT

The following transit services are available within the Northern Gateway area:

- MARC Camden Line at College Park
- Metrorail at Prince George's Plaza, College Park, and Takoma
- UMD Shuttle Services – Routes 111 and 118
- WMATA Metrobus
- Prince George's TheBus – Route 18

Figure 5 shows a map of all transit routes within a two-mile radius of the study area, highlighted in orange.

The Purple Line is a 16-mile light rail line that will extend from Bethesda in Montgomery County to New Carrollton in Prince George's County. It will provide a direct connection to the Metrorail Red, Green, and Orange Lines at Bethesda, Silver Spring, College Park, and New Carrollton. The Purple Line will also connect to MARC, Amtrak, and local bus services. The alignment through the Northern Gateway area is along MD 193 at street level in exclusive center running lanes with three station locations: Takoma-Langley, Riggs Road, and Adelphi Road-UMGC/UMD.

Preliminary Recommendations from the Public Realm Assessment

Preliminary recommendations were made as part of the Public Realm Assessment.

- Pedestrian Facilities
 - Ensure sidewalks have a minimum of five feet of width, are constructed to clearly differentiate pedestrian paths across driveways (per MDOT SHA standards for entrances), and that obstacles such as utility boxes, light posts, trash cans, and benches be moved to ensure a minimum of five feet of clear space for pedestrians.
 - Enhance crossing locations with high-visibility crosswalks or other features to make pedestrians more visible and prominent to motorists.
 - Consider additional mid-block crossing opportunities, pedestrian-scale lighting, and wayfinding signage.
- Bicycle Facilities
 - As part of the MTA Purple Line project, construct five-foot bike lanes along MD 193.
 - Incorporate a two- to three-foot buffer for the bike lanes and provide painted bike lanes through intersections to better separate bicycle and motor vehicle traffic. This will clarify the expected routes for bicyclists on the street.
 - Incorporate bicycle amenities, such as bicycle racks, wayfinding signage, and bikeshare facilities into the design of the SPACES study for MD 193.
 - Evaluate future bicycle connections throughout the corridor and beyond the SPACES MD 193 study area such as off-street bicycle facilities or the creation of bicycle boulevards to adjacent neighborhoods.
- Public Environment
 - Install landscape buffers along with other landscape features such as trees, bioswales, and rain gardens.
 - Relocate overhead wires to rear alleys or the rear of properties and evaluate the feasibility of installing underground utilities.
 - Incorporate adequate trash receptacles and management into the SPACES study for MD 193 30% design drawings.
- Transit Facilities
 - Feature enlarged waiting areas and amenities such as benches, shelters, and lighting at transit stops.
 - Provide real-time travel information at transit stops.
- Parking Facilities and Transportation Demand Management
 - Unbundle parking costs from housing or commercial space costs.
 - Employ transportation demand management strategies, such as encouraging shared parking agreements between retail and office facilities.
 - Establish a Transportation Management Association to coordinate between residents, property owners, and businesses and promote and encourage transportation options both to/from and within the corridor.

Project Considerations

Public Realm Assessment

The Public Realm Assessment was prepared to determine preliminary recommendations to fulfill the project goals that could be included or enhanced as part of the final design. Recommendations from the assessment that were within the project scope and study area limits were included in the 30% Preliminary Design and Engineering Plans and Construction Cost Estimate. Recommendations that were determined to be outside of the scope and the limits of the project may be implemented in future projects.

Constraints

MTA PURPLE LINE

The MTA Purple Line light rail transit facility is under construction. It is anticipated that the final design and construction of any recommendations for this project will occur after the Purple Line construction is completed. Design recommendations for this project considered the Purple Line improvements as existing conditions. The project team received the current Purple Line Computer Aided Drafting (CAD) files from MDOT MTA and used them to develop the 30% Preliminary Design and Engineering Plans. Recommendations for this project seek to minimize impacts to the Purple Line alignment and recently constructed improvements. The goal of the Purple Line project is to provide a new transit facility, but it also includes several improvements that meet the goals of this project including bike lanes, crosswalks, and sidewalk enhancements. This study will build on the improvements provided by the Purple Line to advance pedestrian and bicyclist safety, provide community connection, and enhance the public realm.

RIGHT-OF-WAY

In order to prepare feasible and constructible 30% Preliminary Design and Engineering Plans, the project scope defined the limits of the project to be within available public right-of-way owned by the State of Maryland or Prince George's County. The Purple Line project acquired a significant amount of right-of-way to accommodate the light rail alignment. The improvements for this project will be designed to avoid any additional right-of-way acquisitions.

Previous Plans and Studies

Many planning efforts in recent years include the Northern Gateway area. The recommendations from these plans and studies were considered in the development of design recommendations.

- Plan 2035 Prince George's County Approved General Plan (2014)
- Prince George's Approved Countywide Master Plan of Transportation (2009)
- Takoma/Langley Crossroads Approved Sector Plan (2009) -Prince George's County
- Takoma/Langley Crossroads Sector Plan (2012) - Montgomery County
- Greater-Chillum Community Study (2015)
- Takoma Park-Langley Park-Greenbelt and Vicinity Master Plan (1990)
- Prince George's County Approved Historic Sites and Districts Plan (2010)
- New Hampshire Avenue Corridor Concept Plan (2007)
- Purple Line Corridor Access Study (2011)
- Purple Line Bicycle Access and Bicycle Hub Location Study (2010)

MDOT SHA Context Guide

MDOT SHA published Context Driven: Access and Mobility for All Users in December 2019, which establishes context zones based on land-use characteristics and provides design guidelines based on each zone that focus on creating safe, accessible, and effective multi-modal transportation systems. The Northern Gateway SPACES project limits are within the Suburban Activity Center context zone.

MDOT SHA Context Guide Recommendation	Proposed by the Purple Line	Included in this Study
Continental Crosswalk Striping		✓
Narrow Lanes		✓
Buffered Bike Lanes		✓
Mid-block Crossings		✓
Pedestrian Hybrid Beacons		✓
Eliminate Free Right Turns	✓	✓
35 mph Speed Limit	✓	

Recommended Improvements



PHOTOS BY NELSONNYGAARD

Buffered Bike Lanes – Pavement Markings



Buffered Bike Lanes – Flex-posts and Curb-stops



Buffered Bike Lanes – Precast Concrete

Several recommended improvements were developed to meet the project goals and incorporate the project considerations. Unless otherwise noted, it is anticipated that the implementation of these improvements will occur after Purple Line construction due to the necessary coordination, final design, and current construction status of the Purple Line.

Buffered Bike Lanes

As part of the MTA Purple Line project, five-foot-wide bike lanes, the MDOT SHA minimum width requirement for bicycle accommodation, are proposed along MD 193 in both directions of travel within the study area. Providing a buffer between vehicular and bicycle traffic is recommended and provides added comfort and increased safety for bicyclists. This buffer could be constructed using pavement markings, flex-posts and curb-stops, or precast concrete.

Pavement marking buffers were assumed for the 30% Preliminary Design and Engineering Plans and Construction Cost Estimate. Providing a two- to three-foot buffer for the five-foot bike lanes will reduce travel lanes on MD 193 to 10 or 11-foot lanes. Reducing travel lanes encourages reduced vehicular speeds and increases safety for pedestrians and bicyclists. This traffic calming technique is supported by the MDOT SHA Context Guide. It should be noted that MDOT SHA sent a formal Change Order to MTA in August 2020 to modify the Purple Line signing and marking plans to include two-foot buffered bike lanes along MD 193 within Prince George's County by narrowing the through lanes.

Additional bike lane design features would include green paint (Figure 6) and bike boxes (Figure 7) as described in the National Association of City Transportation Officials Urban Bikeway Design Guide. Applying green paint to areas of the buffered bike lanes that conflict with access to turn lanes, driveways, and through intersections increases vehicle driver awareness. Bike boxes provide bicyclists priority at signalized intersections, particularly for left turning bicycle movements. The installation of bike boxes will require signal modifications for timing, capacity, detection adjustments, and phasing changes to coordinate with the proposed light rail transit vehicle (LRV) preemption.



IMAGES COURTESY OF NACTO

Figure 6. Bike Lane Design Features – Green Paint



Figure 7. Bike Lane Design Features – Bike Boxes

Driveway Consolidation

The MD 193 corridor features numerous commercial properties directly adjacent to the roadway with frequent driveway access points. Consolidating driveways would improve safety along the corridor by removing vehicular conflicts with pedestrians and bicyclists. Several driveways have been identified as opportunities for consolidation along the corridor, particularly in areas where a single property has multiple driveways or where adjacent parking lots are connected. Implementing this improvement

would require significant coordination with property owners along the corridor. This coordination should emphasize the safety benefits and improvements to pedestrian and bicycle access, which could result in increased business for the commercial property owners. One of the next steps in moving this project to Final Design and Engineering should be further investigation and coordination with the property owners to determine the feasibility of driveway consolidation. The 30% Preliminary Design and Engineering Plans in Appendix C show the locations of these potential driveway consolidations.



SOURCE: NELSON\NYGAARD

Both sides of University Boulevard are dominated by commercial properties in a series of plazas. While the sidewalk environment is predominantly connected along University Boulevard, the pedestrian connections to, and within, the commercial plazas are largely nonexistent or extremely deficient with no direct connections.

Eliminating Free Right Turns

The MTA Purple Line project is proposing to remove the channelized free right turns in the northeast and southwest corners of the intersection of MD 193 and MD 650, the southwest corner of the intersection of MD 193 and MD 212, and the southeast corner of MD 193B at Adelphi Road, as shown in Figures 8, 9, and 10.

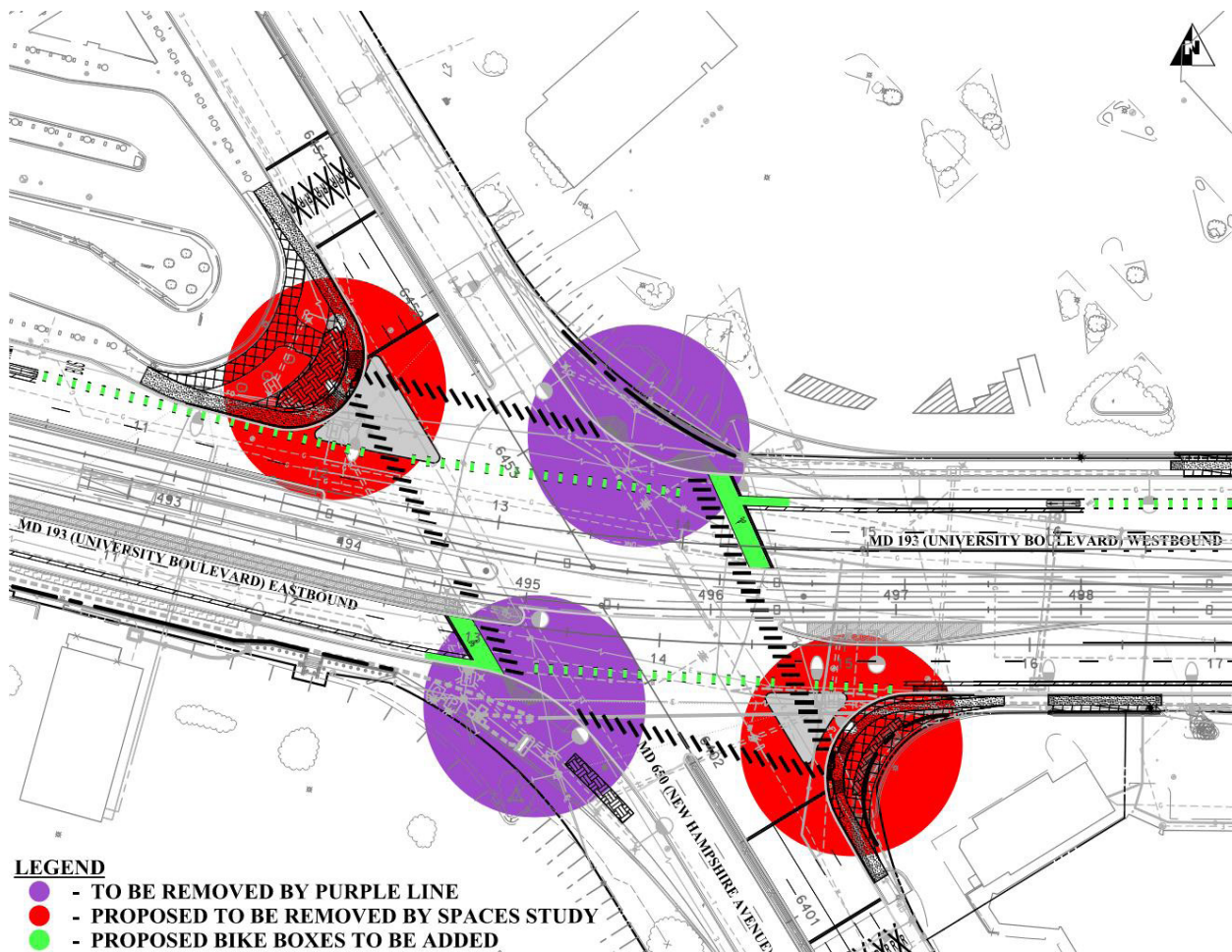
After the Purple Line is constructed, three channelized right turns will remain along the corridor and are proposed to be removed as part of this study:

- MD 193 at MD 650 – Northwest corner
- MD 193 at MD 650 – Southeast corner
- MD 193 at MD 212 – Southeast corner

Removing these channelized right turns eliminates

uncontrolled pedestrian crossings across the right turn ramps, reduces turning vehicle speeds, and reduces vehicle-pedestrian conflicts, thereby mitigates pedestrian crashes at these locations. Vehicle turning movements must be verified to ensure that right turns onto MD 193 can be accommodated. Eliminating the free right turns increases crosswalk length and pedestrian crossing time. To mitigate this impact and further protect pedestrians, Leading Pedestrian Intervals (LPIs) should be evaluated at the three signalized intersections. LPIs allow pedestrians a three- to seven-second head start at crossing the street before vehicles are permitted to complete their movements. This improvement requires the installation of No Turn on Red signage for the crosswalks where LPIs are implemented.

Figure 8. MD 193 at MD 650 Channelized Right Turns for Removal



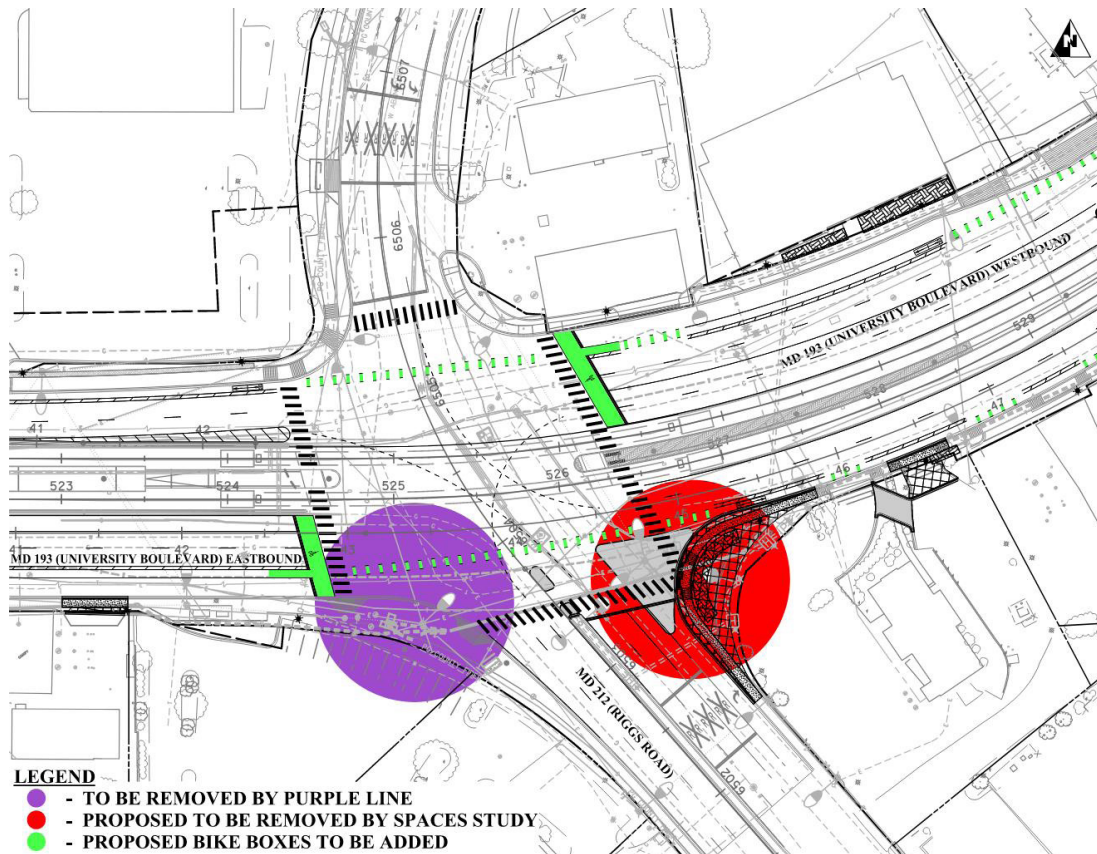


Figure 9.
MD 193 at
MD 212
Channelized
Right Turns
for Removal

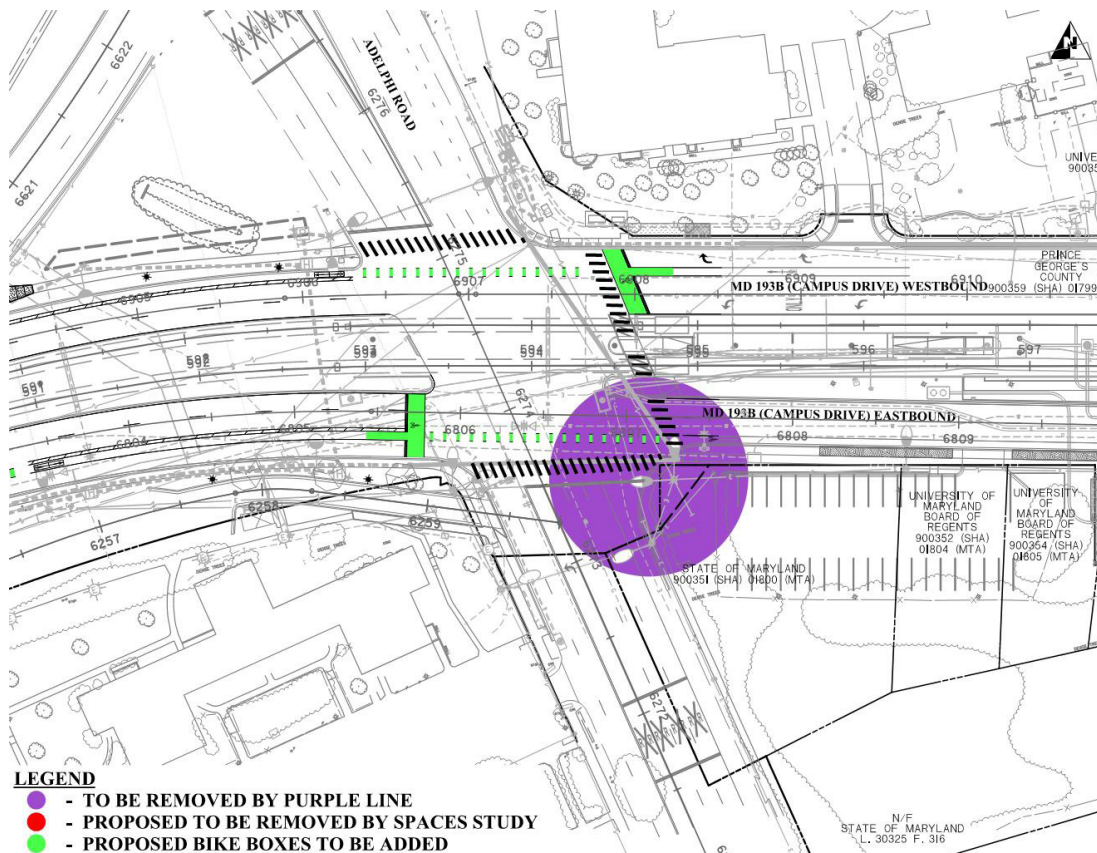
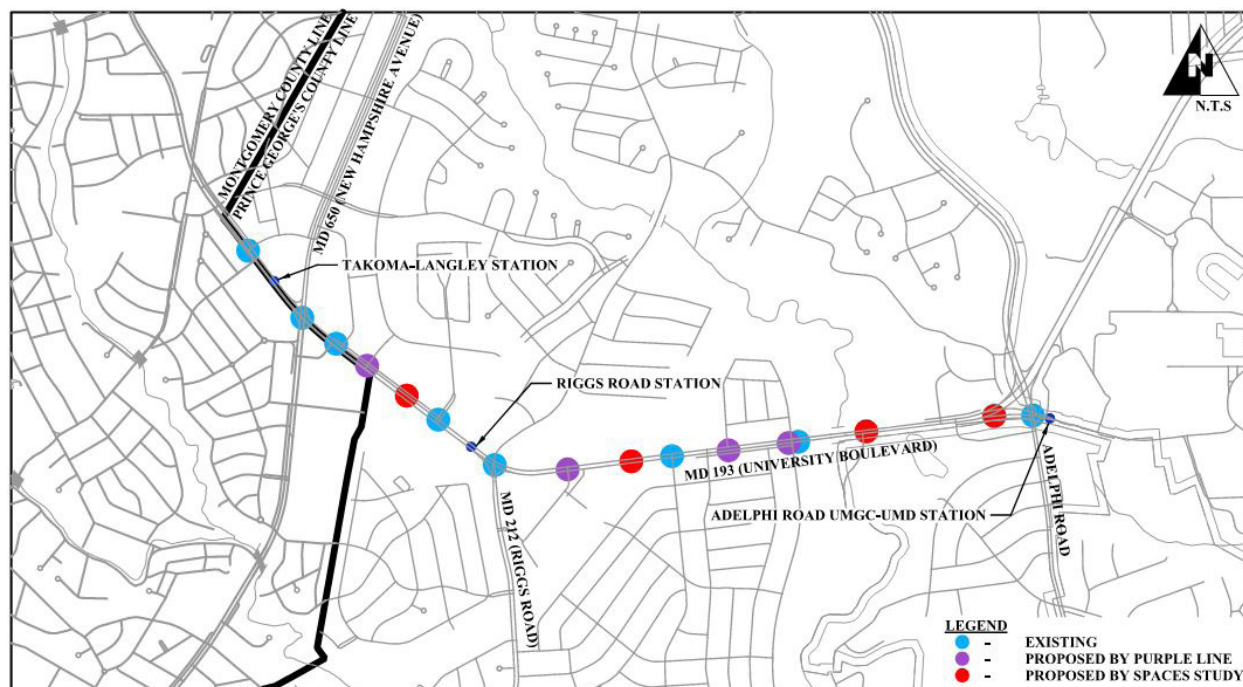


Figure 10.
MD 193B at
Adelphi Road
Channelized
Right Turn
for Removal

Figure 11. Existing and Proposed MD 193 Crossing Locations



Crossing Location	Existing	Proposed by Purple Line	Removed by Purple Line	Proposed by SPACES Study
Takoma-Langley Transit Center west leg	✓			
MD 650 west leg	✓			
MD 650 east leg	✓			
East Langley Park Plaza Shopping Center west leg	✓		✓	
East Langley Park Plaza Shopping Center east leg	✓			
15th Avenue west leg	✓			
15th Avenue east leg	✓			
MD 212 west leg	✓			
MD 212 east leg	✓			
23rd Avenue west leg	✓			
23rd Avenue east leg	✓			
West Park Drive east leg	✓			
Adelphi Road east leg	✓			
14th Avenue west leg		✓		
14th Avenue east leg		✓		
Guilford Road east leg		✓		
24th Avenue west leg		✓		
24th Avenue east leg		✓		
West Park Drive west leg		✓		
Between 14th Avenue and 15th Avenue				✓
In the vicinity of Phelps Road				✓
Between West Park Drive and MD 193B				✓
MD 193B south leg				✓



NELSON\NYGAARD

An example of a HAWK beacon.

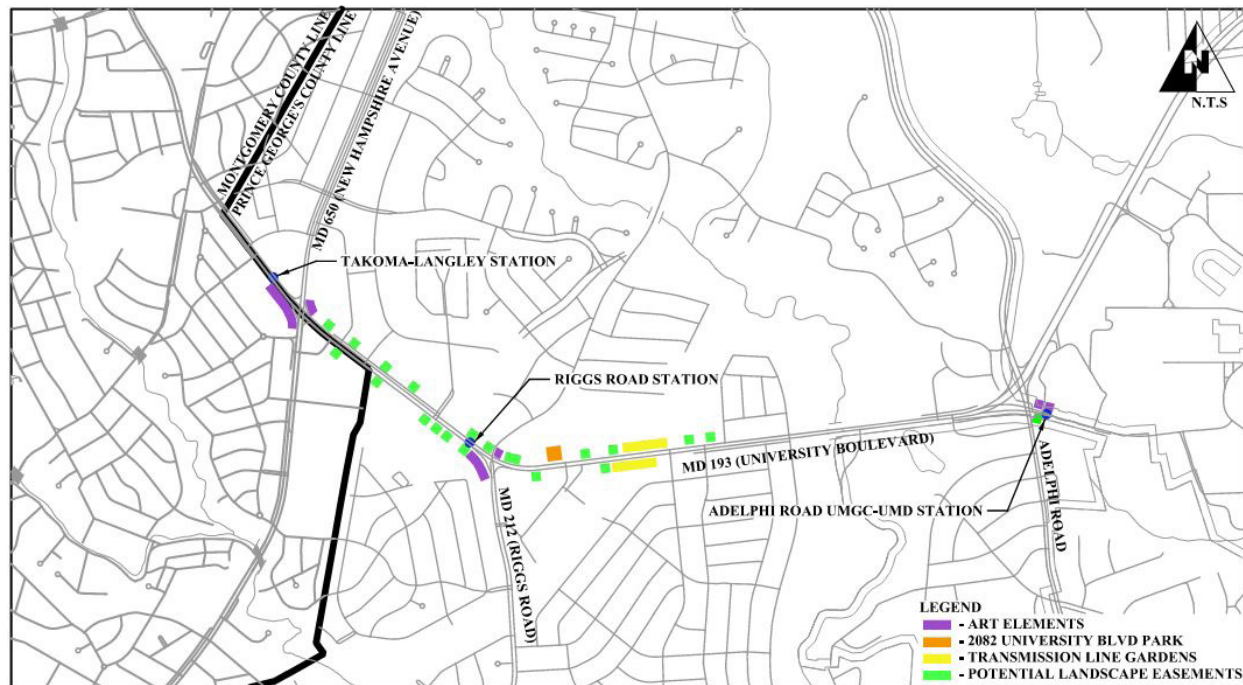
Mid-Block Crossings with HAWK Beacons

The portion of MD 193 within this project area, which experiences heavy pedestrian traffic, is one of the most dangerous corridors for pedestrians in the state with a high number of pedestrian crashes and fatalities. Prior to the MTA Purple Line project, there were 13 signalized pedestrian crossings across MD 193 within the project limits. The MTA Purple Line project proposes to remove one of the existing crossings and add six crossings. To discourage the number of pedestrian crossings outside of signalized intersections, previous MDOT SHA projects installed fencing along the median of MD 193. The MTA Purple Line proposes to replace the existing fencing with new fencing in some locations. The increased pedestrian crossings by the Purple Line provides additional opportunities for safe pedestrian movements but leaves significant gaps of up to a half-mile between crossings at several locations. This study recommends

installing four additional pedestrian crossings across MD 193, as shown in Figure 11.

The proposed pedestrian crossings could be controlled by a full-color traffic signal, an on-demand pedestrian signal, or a HAWK beacon. The addition of new signalized intersections will require evaluation of future transit operations and ultimate signal progression. An example of an on-demand pedestrian signal is at US 1 and Hartwick Road in College Park and an example of a HAWK beacon is MD 410 at Bethesda Chevy Chase High School in Bethesda. A detailed traffic engineering study including a signal warrant analysis is required to determine the type and location of signalized pedestrian crossings. All new pedestrian crossing pavement markings must be MDOT SHA standard continental style consistent with the Purple Line project. All new signalized pedestrian crossings must be discussed with MDOT MTA early in the final design process to coordinate with Purple Line operations.

Figure 12. Landscaping and Site Design Recommendations Summary Map



Landscaping and Site Design

The MD 193 University Boulevard corridor is a cross section of diverse cultures and lifestyles and a major gateway to Prince George's County. To enhance the public realm, the recommendations for landscaping and site design for this project build on the landscape plans in the MTA Purple Line design. Special emphasis and elements are proposed for the two-mile study area and its three Purple Line stations, as shown on Figure 12.

PURPLE LINE STATIONS

MDOT MTA has implemented a Purple Line Art-in-Transit program to incorporate art to enhance the transit stations. Additional art elements are proposed as part of all three Purple Line stations within the study corridor to be consistent with the Purple Line program. Purple Line Art-in-Transit is proposed at the stations located in the medians along MD 193. These art elements were considered in the site design recommendations for this project. Recommendations for each station location include:

TAKOMA LANGLEY STATION

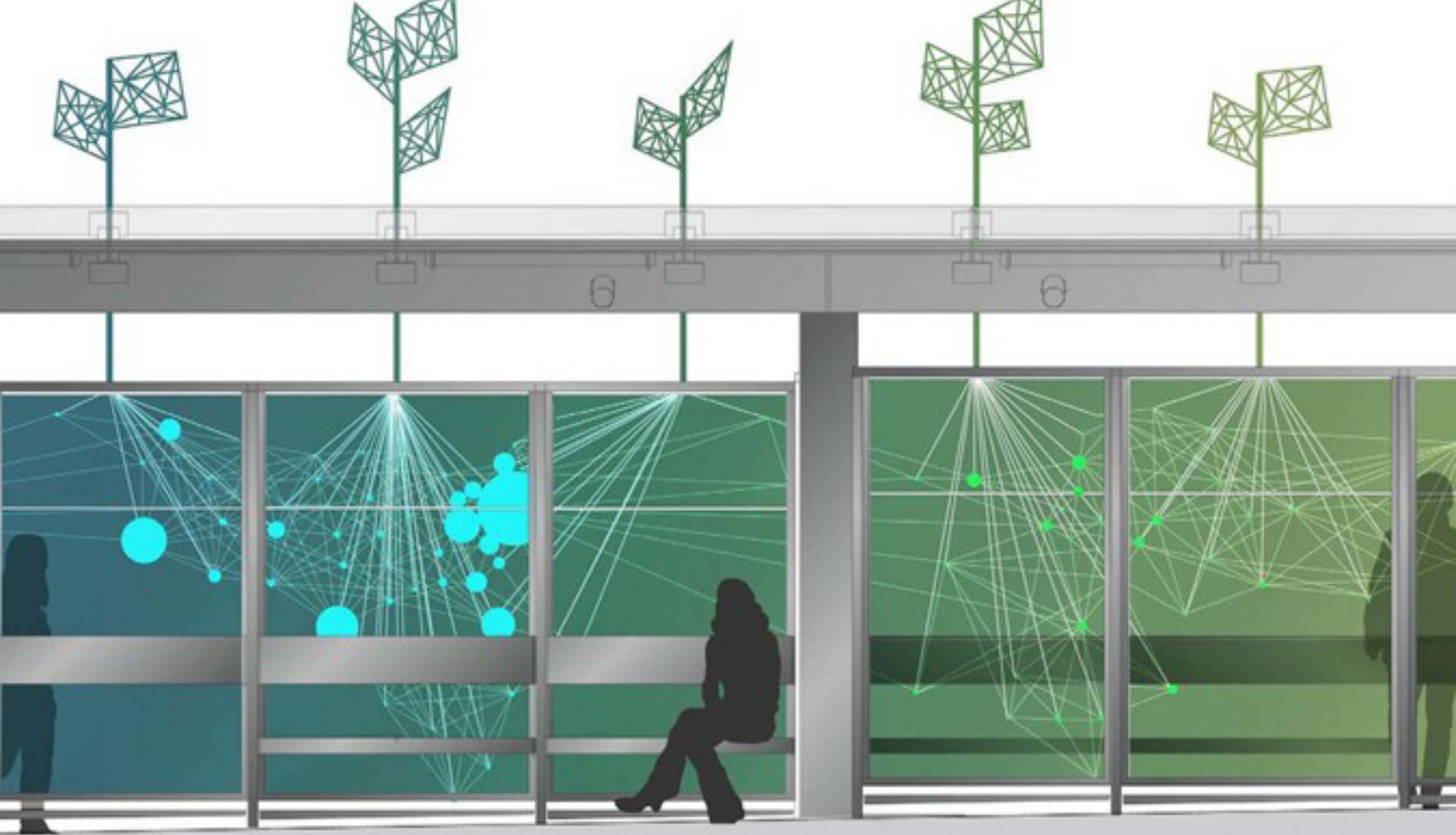
The Takoma Langley Crossroads Transit Center design in the northwest corner of the intersection of MD 193 at MD 650 sets the pace for a stylized entry into Prince George's County, providing strong vertical elements. It is recommended to replicate the Takoma



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Transit Center Lower Canopy

Langley Crossroads Transit Center lower canopy features throughout the intersection. Lower canopy features can be installed in the northeast, southeast, and southwest corners of the intersection to provide shelter and expand the theme throughout the intersection. Aluminum panels with features from the Purple Line Art-in-Transit could be installed between the lower canopy uprights to tie the features to the Purple Line Takoma Langley station as well.



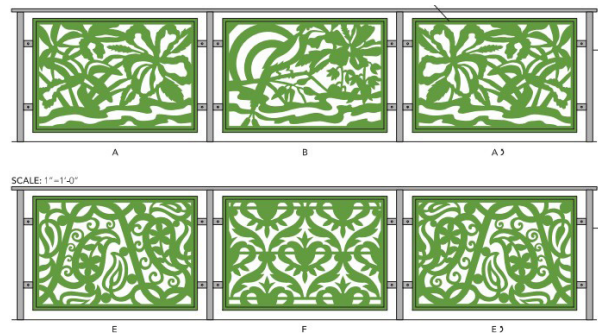
Purple Line Art-in-Transit Adelphi Road-UMGC-UMD Station

RIGGS ROAD STATION

A tremendous opportunity exists to not only provide definition but set the tone for future development at the intersection of MD 193 and MD 212. Building on the Art-in-Transit proposed at the station, sculptures are recommended to be installed in the northeast and southwest corners of the intersection with themes from El Salvador, Honduras, China, West Africa, and India. The final element of the intersection would be the creation of a linear green space in the northwest corner, wrapping the corner to the driveway entrances. This green space would require a landscape easement, but would create a distinct identity and character that will increase its economic value to the residents, businesses, community and Prince George's County.

ADELPHI ROAD-UMGC-UMD STATION

The Art-in-Transit proposed for this Purple Line station includes themes of planting and growth. To continue this theme, it is recommended to place Living Green Columns/Vegetated Towers in the northeast corner of the intersection which will mark the start of the global campus experience. The columns will be eight feet in height and approximately three feet in diameter. The living green columns at the intersection of MD 193B and Adelphi Road must be placed to avoid obstructing sight distance.



Above: Purple Line Art-in-Transit Riggs Road Station
Left: Living Green Column Example

CORRIDOR ELEMENTS

2082 UNIVERSITY BLVD PARK

A parcel was acquired for the Purple Line project that does not appear to include proposed features in the construction drawings. This parcel is located along the north side of MD 193 west of Guilford Road and was listed as fee simple with an area of 17,151 square feet (0.394 acres). The fee-simple area is listed in Plat No. 59244 under 2082 University Blvd Ltd Partnership 900611 (SHA) 01719 (MTA). MDOT MTA noted that the property was obtained for potential parking for adjacent properties, but no official agreement was executed. It is recommended that this parcel be converted into a park to provide a point of identity and community gathering space. Features in the park could include musical instruments, benches and green landscaping. Ownership and maintenance of the park will need to be discussed and coordinated with MDOT MTA, MDOT SHA, the community, and local agencies prior to final design.



NELSONNYGAARD

2082 University Blvd Parcel

TRANSMISSION LINE COMMUNITY GARDENS

There is an opportunity to develop community gardens beneath the existing PEPCO overhead transmission line that runs northeast through the project limits across MD 193 between Phelps Road and 23rd Avenue. The development of community gardens accessible from MD 193 is recommended as a place to bring people together and provide healthy food. The gardens could be located on the north and south sides of MD 193 and buffered by flowering trees from MD 193. The installation of a shade pavilion and benches is also recommended.

The garden plots should be five feet x five feet, 10 feet x 10 feet, and 20 feet x 20 feet in size. The use of the gardens can be offered to the communities by lottery and be rented out in two-year cycles due to limited space. Development of the community gardens will need to be discussed with the Prince George's County Department of Parks and Recreation and coordinated with PEPCO prior to final design. Additional landscape enhancements to provide a consistent level of beautification are recommended along the frontage of University Boulevard.

SIDEWALK INTERCONNECTION

Opportunities exist within the project corridor to provide pedestrian connections to and from businesses, residential areas, community gardens, and the Purple Line. Connections should be designed to each destination for both the east and west sides of the corridor. Although these connections are outside of the limits of this project, these recommendations can be developed further in a separate, future project.

Recommendations for each station and their pedestrian interconnections include:

- Takoma/Langley Park – Provide for safe, well-marked pedestrian access from the station to residential communities. Special attention and focus need to be placed on pedestrian and bicycle access through commercial shopping and office buildings.
- Riggs Road – A walkway system exists within the nearby multifamily housing. These sidewalks can be extended to and through commercial areas that front University Boulevard through the development of pedestrian access easements. Increased bicycle access in the neighborhood north of the Riggs Road station is being evaluated as part of the ongoing Langley Park Neighborhood Bicycle Boulevards project.
- Adelphi Road-UMGC/UMD – Significant sidewalk and pedestrian access exists within the University of Maryland campus; pedestrian access and safe walking needs to extend along Adelphi Road and the neighborhoods immediately surrounding the station. This is being evaluated as part of the ongoing Adelphi Road-UMGC/UMD Purple Line Station Area Sector Plan.

NORTH WEST BRANCH TRAIL

Pedestrian trails can be linked into the extensive trail system from paths currently connecting to the Purple Line. This evaluation could be done as part of the update to the Countywide Master Plan of Transportation that includes bike and pedestrian facilities.

Recommended features at
2082 University Blvd Park
include a music playground.

PHOTO COURTESY OF PERCUSSION PLAY



An example of a
Gabion basket seat
PHOTO BY ISTOCK



LANDSCAPE EASEMENTS

A significant amount of right-of-way was purchased or is in negotiation along the corridor for the MTA Purple Line project. The Purple Line project will provide landscaping improvements throughout the project limits; however, the landscape plantings are limited to within medians and sidewalk buffers due to limited right-of-way. To enhance the public realm, additional landscaping and site design improvements are recommended at locations throughout the study area. By using landscape easements, rather than fee simple acquisitions, easements can be negotiated with individual property owners and focus on locations that will benefit both the public and the property owners. Property owners could be encouraged to participate by guaranteeing that they will be able to use the land set aside as a landscape easement for density credits; this option will need to be reviewed for compliance with the Zoning Code. Another consideration is who will hold the easement, either a county agency, M-NCPPC, or other entity. Landscape easements can provide areas for plantings and site furniture without the need to acquire fee simple property. Additional landscaping can increase property values for the property owner and provide beautification for the community. Low maintenance features including understory trees, benches, and flowering or green ground coverings are recommended. Potential locations for landscape easements have been identified on the 30% Preliminary Design and Engineering Plans.

STREET FURNITURE

The installation of street furniture throughout the project limits provides opportunities for the community to sit and congregate and activates the public realm. Examples of street furniture include benches, shelters, and waste receptacles. Shelters can be provided at bus stops and must be coordinated with WMATA and Prince George's County. Gabion basket seats can also be provided in locations where the roadside grade may not allow the installation of street furniture. The gabion baskets act as a retaining wall and bench in the same location.

The style of street furniture should be coordinated with the local communities and transit agencies to provide consistency, but also connect with the diversity of the corridor. This can also be coordinated with any wayfinding or signage for the corridor. Since there are no municipalities in the project limits, agreements for ownership and maintenance must be established to ensure a state of good repair for all proposed elements.

Additional bicycle amenities such as lockers, racks, and bike repair stations should be installed near transit stops to promote ridership and connectivity.

PEDESTRIAN LIGHTING

Pedestrian-level lighting provides increased safety, security, and wayfinding for pedestrians. The MTA Purple Line project is providing LED lighting arms attached to utility poles focused on the roadway, intersections, and crosswalks, but not on the sidewalks and pedestrian paths throughout the project limits.

Pedestrian-level lighting provided by standalone 12- to 16-foot-high poles with post-mounted luminaires is recommended to increase the safety and comfort for pedestrians. Additional easements may be required for the installation of consistent pedestrian lighting throughout the project limits due to the lack of available right-of-way.

The design and installation of pedestrian lighting along MD 193 is directed by the 2008 MDOT SHA Pedestrian Lighting Policy. This policy establishes the funding, design, construction, and maintenance standards for pedestrian-level lighting by a local entity, in this case the County, along an MDOT SHA roadway. If the proposed pedestrian lighting system meets defined criteria, MDOT SHA will fund the design; 100 percent of the construction of conduit and handholes; and 50 percent of the construction of poles, foundations, wiring, luminaires and controls. Typically, a local municipality would be responsible for the remaining construction funding as well as maintenance and energy costs. If the local municipality elected to have the local utility company design and install the lighting system, the local municipality is responsible for the costs. The local municipality could then execute an agreement with the local utility company to maintain the lighting as well. Since there is not an incorporated municipality in this study area, any final determination on lighting would need to be finalized by the County DPW&T and MDOT SHA.



PHOTO COURTESY OF CITY OF SALISBURY
Pedestrian-scale lighting

30% Design and Engineering Plans

Following the input from the community meetings and key stakeholders, 30% Design and Engineering Plans were developed for the study area to implement the recommendations. The goal of providing 30% Design and Engineering Plans is to move the project forward, allowing different implementing agencies to apply for grants and funding opportunities. The 30% Design and Engineering Plans were developed

consistent with MDOT SHA CADD and construction document standards. The 30% Design and Engineering Plans assume no right-of-way acquisition or major underground or overhead utility relocation. This is important because right-of-way acquisition and underground or overhead utility relocation can be very expensive and time consuming. The 30% Design and Engineering Plans are included in Appendix C.

Preliminary Construction Cost Estimate

A preliminary construction cost estimate for recommended improvements in the two-mile study area was developed based on the 30% Design and Engineering Plans. The estimate was prepared consistent with MDOT SHA category codes and guidelines. The estimated preliminary construction cost for the recommended alternative is \$8,687,000. The detailed preliminary construction cost estimate is included in Appendix D. The following table summarizes the preliminary costs for each recommendation.

Recommendation	Preliminary Cost
Buffered Bike Lanes	\$2,030,000
Driveway Consolidation	\$686,000
Eliminating Free Right Turns	\$564,000
Mid-Block Crossings with HAWK Beacons	\$1,370,000
Landscaping/Site Design (Including Street Furniture)	\$2,360,000
Pedestrian Lighting	\$1,677,000
Total	\$8,687,000

Next Steps

The recommendations in this report and reflected in the 30% Preliminary Design and Engineering Plans and Construction Cost Estimate have been grouped together in one set of plans and project. The recommendations in this project could be constructed together in a traditional MDOT SHA advertised project, or they can also be separated based on available funding and programs.

The first step in the implementation of these recommendations is the identification of available funding sources for the recommendations. Several of the recommendations will require coordination and agreements with third parties and private property owners. There is no incorporated municipality within the project limits that could assume ownership and maintenance of recommendations that MDOT SHA would not typically assume. Champions must be identified and coordination with Prince George's County DPW&T must be conducted to establish agreements and take on ownership and maintenance to make these community improvements a reality. Decisions and coordination required for specific recommendations prior to final design are listed below:

Driveway Consolidation

- Locations for driveway consolidations must be confirmed with MDOT SHA
- Confirmed locations and financial responsibility must be coordinated between the County and the property owners

Eliminating Free Right Turns

- Design vehicle must be confirmed with MDOT SHA and turning movement templates must be finalized to ensure the design vehicle can be accommodated.
 - Preliminary turning movement templates were tested and indicated that the WB-67 design vehicle could complete the right turn movements without channelization.

Mid-Block Crossings with HAWK Beacons

- A detailed traffic engineering study including a signal warrant analysis must be performed in coordination with MDOT SHA to determine the type and location of signalized pedestrian crossings.
- All new signalized pedestrian crossings must be discussed with MDOT MTA to coordinate with Purple Line operations.

Landscaping/Site Design

- Final plans for the enhancements of intersections and roadways must be designed and coordinated with MDOT SHA, MDOT MTA, and Prince George's County DPW&T.
- In general, ownership and maintenance agreements must be established for all landscaping/site design features.
- Landscape easements must be confirmed and negotiated with property owners.
- Transmission Line Community Gardens must be coordinated with PEPCO and Prince George's County Department of Parks and Recreation.
- The potential use of the 2082 University Blvd property for public space must be confirmed with MDOT MTA and MDOT SHA.
- Agencies that will own and maintain public art, street furniture, and pedestrian lighting must be identified.
- Trail interconnections for Northwest Branch Trail should be identified, coordinated, and documented as to existing and future opportunities.

Appendix A

Data Sources

Study Area Corridor within the Region

Prince George's County Planning Department, Transportation 2017 In, Line, November 13, 2016, https://gisdata.pgplanning.org/opendata/download.asp?FileName=/data/Shapefile/Transportation_2017_In.sip

Study Area Roadways

Prince George's County Planning Department, Transportation 2017 In, Line, November 13, 2016, https://gisdata.pgplanning.org/opendata/download.asp?FileName=/data/Shapefile/Transportation_2017_In.sip

Montgomery County Planning Department, Purple Line, Line, August 23, 2017, <https://ocatlina.org/arcgis/rest/services/PurpleLine/MapServer/0/Query?where=1>

Appendix A

Data Sources

Complete data sources are available online at <https://bit.ly/SpacesAppA>.



MEETING MINUTES

DATE OF MEETING:

September 13, 2019

LOCATION AND TIME:

M-NCPPC Lakeside Office

14422 Old Mill Road

Upper Marlboro, MD, 20772

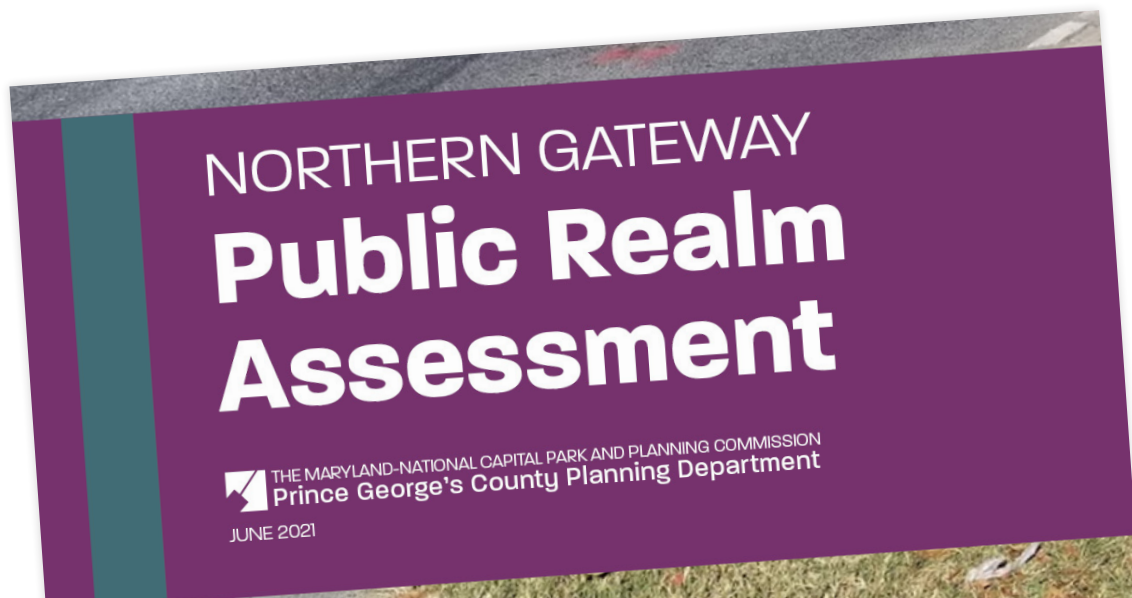
10:00 a.m. to 12:00 p.m.

Northern Gateway SPACeS PAMC Project

Appendix B

Meeting Minutes and Comments
from the Stakeholder Meeting
and Community Meetings

The minutes and comments are available online at <https://bit.ly/SpacesAppB>.



Appendix C

Public Realm Assessment

The assessment is available online at <https://bit.ly/SpacesAppC>.

Date 7/11/2019
Observer Adriana Mason
Segment # 1 North New Hampshire - Ryegate
Answer questions 1-6 based on this end of the segment

Intersection

Neighborhood Identification

1. Are there monuments or markers including neighborhood entry signs that indicate that one is entering a special district or area? ☒ yes = 1, no = 0

Street Crossing

2a. Consider the places on the segment that are intended for pedestrians to cross the street. Are these places marked for pedestrian crossing? ☒ all = 3, some = 2, none = 0, NA = 8

2b. What type of marking do the crosswalks have? Mark all that apply.

White painted lines ☒ yes = 1, no = 0

Colored painted lines ☒ yes = 1, no = 0

Zebra striping ☒ yes = 1, no = 0

Different road surface or paving (e.g. tiles, colored concrete, marble, etc) ☒ yes = 1, no = 0

Other ☒ all = 3, some = 2, none = 0, NA = 8

3. Are there curb cuts at all places where crossing is expected to occur? ☒ yes = 1, no = 0

4. What type of traffic/pedestrian signal(s)/system(s) is/are provided? Mark all that apply.

Traffic signal ☒ yes = 1, no = 0

Stop sign ☒ yes = 1, no = 0

Yield sign ☒ yes = 1, no = 0

Pedestrian activated signal ☒ yes = 1, no = 0

Pedestrian crossing signal ☒ pretty/very safe = 1, not very safe/unsafe = 0

Pedestrian overpass/underpass/bridge ☒ cul de sac = 8

5. For an individual who is on this segment, how safe (traffic wise) do you think it is to cross the street from this segment? ☒ pretty/very convenient = 1, not very/inconvenient = 0, cul de sac = 8

6. For an individual who is on this segment, how convenient (traffic wise) do you think it is to cross the street from this segment? ☒ cul de sac = 8

Answer questions 7-11 while standing at the beginning of the segment

Neighborhood Identification

7. Does the segment have banners that identify the neighborhood? ☒ some/a lot = 3, few = 2, none = 0

Street Characteristics

8a. Is this a pedestrianized street? ☒ yes = 1, no = 0

8b. Is the street a... ☒ one way = 1, two way = 2

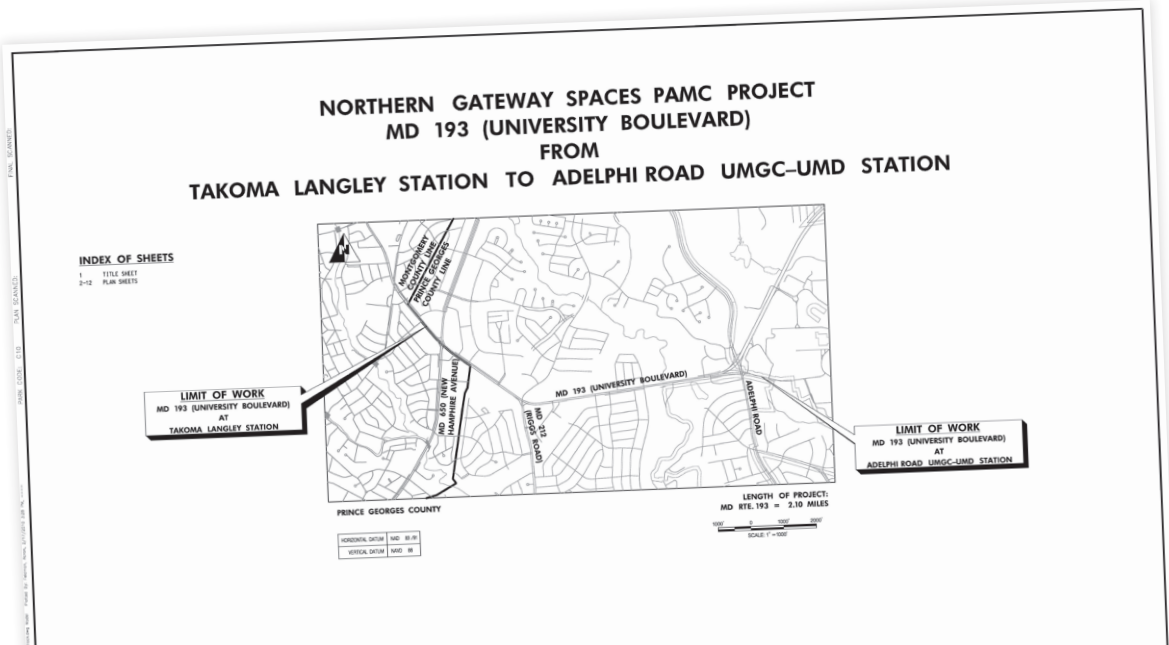
8c. Is this segment an alley? ☒ yes = 1, no = 0

9. Is this segment an alley? ☒ six or more = 6, five = 5, four = 4, three = 3, two = 2, one = 1, none = 0

Appendix D

Irvine Minnesota Inventory Data Sheets

The Irvine Minnesota Inventory Data Sheets are available online at <https://bit.ly/SpacesAppD>.



Appendix E

30% Design and Engineering Plans

The plans are available online at <https://bit.ly/SpacesAppE>.

2025/2021

M-16/PPC Northern Gateway SPACES PAMC Project
MD 193 (University Boulevard) from Takoma Landing Station to Adelphi Road UMG-UMD Station
Overall Construction Cost Estimate - 30% Design

ITEM NO.	CATEGORY CODE NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
			1	LB	\$ 440,000.00	\$ 440,000.00
						\$59,000.00
CATEGORY 1 - PRELIMINARY						
100000		MAINTENANCE OF TRAFFIC				
		CATEGORY 1=				
CATEGORY 2 - GRADING						
201032		CLASS 2 EXCAVATION	1,105	CY	\$ 30.00	\$ 33,150.00
202065		COMMON BORROW	950	CY	\$ 25.00	\$ 23,750.00
210011		REMOVAL OF EXISTING COMBINATION CURB & GUTTER	3,250	LF	\$ 15.00	\$ 48,750.00
210019		DRAW CUTS	6,700	LF	\$ 2.00	\$ 13,400.00
210026		REMOVAL OF EXISTING SIDEWALK	170	CY	\$ 125.00	\$ 21,250.00
		CATEGORY 2=				\$140,350.00
			1	LB	\$ 616,000.00	\$ 616,000.00
						\$99,000.00
CATEGORY 3 - DRAINAGE						
300000		DRAINAGE MODIFICATIONS				
			9,560	SF	\$ 20.00	\$ 191,200.00
			9,415	TON	\$ 75.00	\$ 706,125.00
			160	TON	\$ 125.00	\$ 20,000.00
			13,885	SY	\$ 6.00	\$ 83,310.00
			1,700	SY	\$ 12.00	\$ 20,400.00
			49,130	LF	\$ 1.20	\$ 58,956.00
			19,425	LF	\$ 1.40	\$ 27,195.00
			25	LF	\$ 12.50	\$ 312.50
			8,320	LF	\$ 15.00	\$ 124,800.00
			8,320	SF	\$ 20.00	\$ 17,400.00
			870	SF	\$ 30.00	\$ 26,100.00
			420	SF	\$ 40.00	\$ 16,800.00
			270	EA	\$	\$ 1,272,818.50

Appendix F

Preliminary Construction Cost Estimate

The estimates are available online at <https://bit.ly/SpacesAppF>.

Acknowledgments

Andree Green Checkley, Esq.	Planning Director
Derick Berlage	Acting Deputy Planning Director
Kipling Reynolds, AICP	Community Planning Division Chief

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Consultants

STV, Inc.

Grace E Fielder & Associates, Chartered

Nelson\Nygaard Consulting Associates, Inc.

Special thanks to:

Deni Taveras 2nd District, Council Vice-Chair

Northern Gateway Community Development Corporation

Maryland Department of Transportation State Highway Administration

Prince George's County Department of Public Works & Transportation

