

Northern Prince George's East-West Bikeway Feasibility Study

Final Report

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Prepared For



Prepared By





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Introduction and Background

The Northern Prince George's East-West Bikeway (NPGEWB) Feasibility Study recommends a conceptual alignment and range of bikeway facilities for a planned approximate 2-mile bikeway segment between the western terminus of Longbranch Drive at Wildercroft Park in New Carrollton and the intersection of MD 201/Kenilworth Avenue and River Road. This study is the initial segment of the larger proposed NPGEWB that extends approximately 10 miles between the Washington, Baltimore & Annapolis (WB&A) Trail in Lanham through New Carrollton, the East Riverdale area, College Park, and ultimately connecting to the Northwest Branch Trail in Lewisdale (see Figure 1 for the NPGEWB limits). Figure 2 shows an overview of the approximate alignment of the current segment under evaluation.

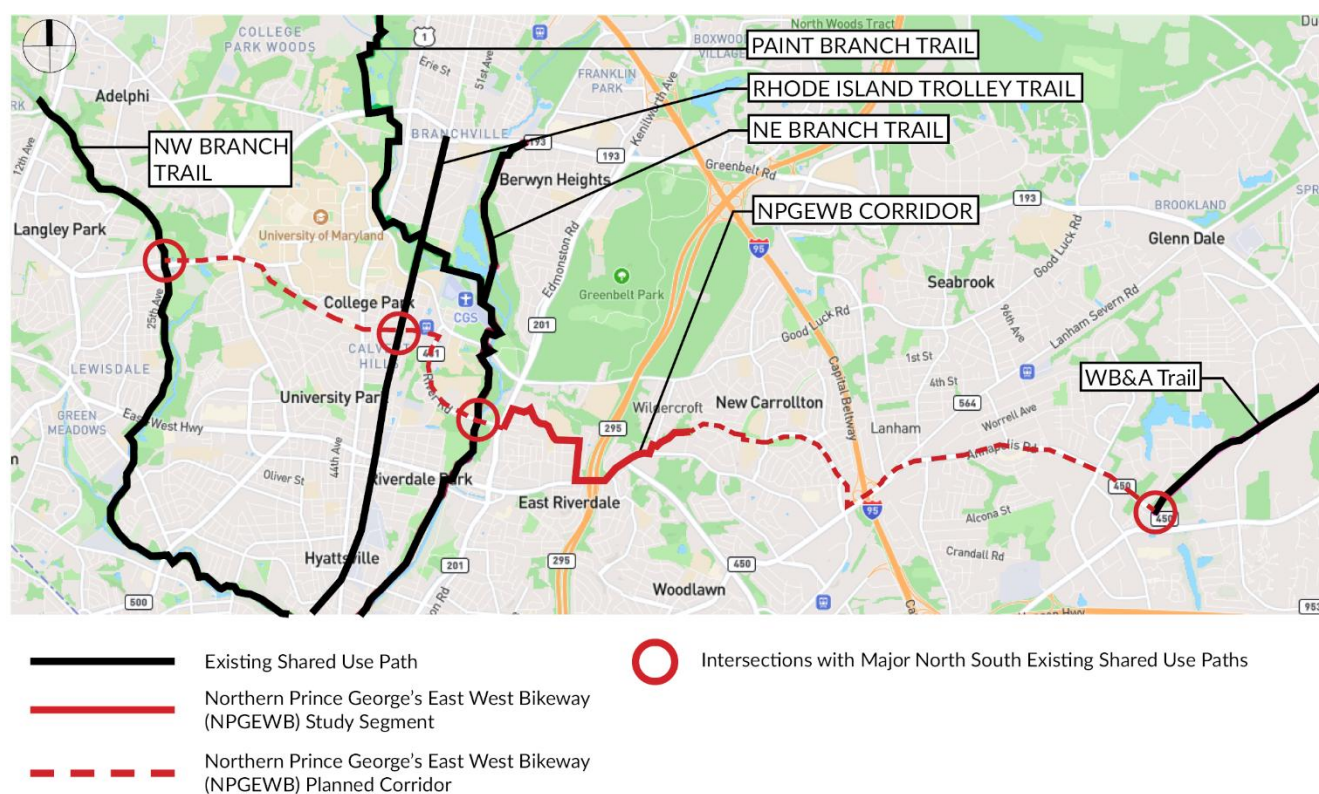


Figure 1: Northern Prince George's County East-West Bikeway Corridor - Lanham to Lewisdale.

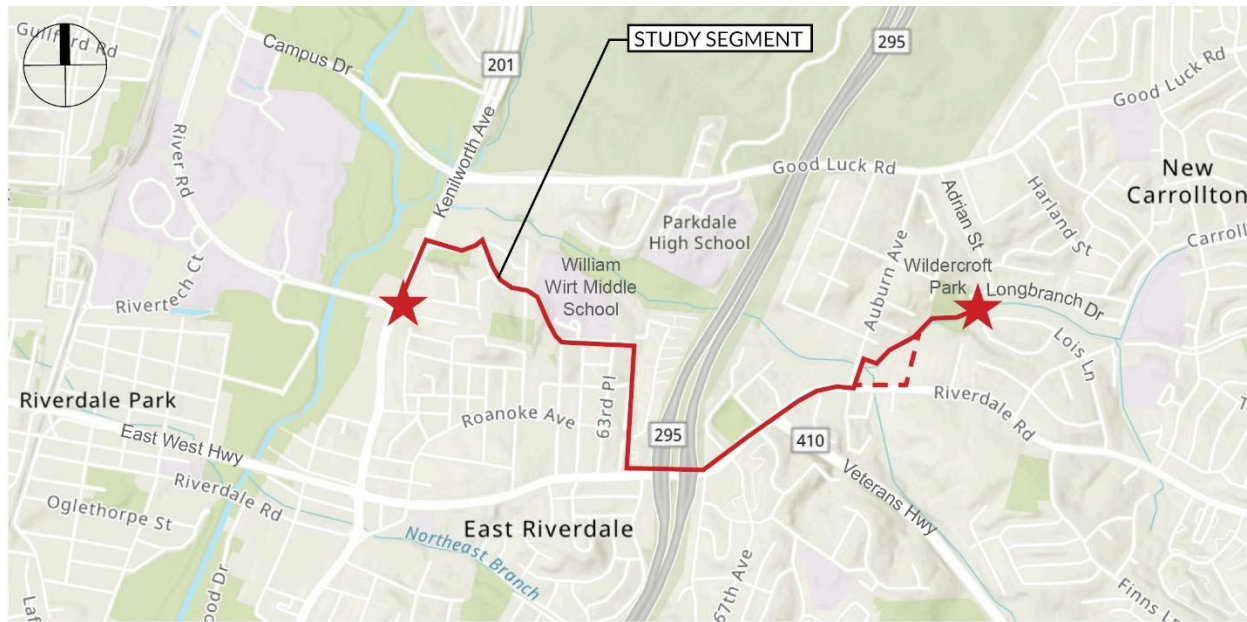


Figure 2: Study Corridor Vicinity Map

NPGEWB Project Purpose and Need

As shown in Figure 1, this project will ultimately expand the County's bikeway network by providing east-west connectivity between four major north-south trail corridors - the WB&A Trail, the Northeast Branch Trail, the Rhode Island Trolley Trail, and the Northwest Branch Trail, improving access and safety for bicyclists, pedestrians, and micromobility users in the northern Prince Georges County region. Additionally, the east-west bikeway will connect established residential neighborhoods with various commercial centers and parks, William Wirt Middle School, University of Maryland College Park campus, Purple Line and Metro stations, and regional transit hubs at New Carrollton and College Park. The project will implement both on-street bicycle improvements and off-street bicycle infrastructure to enhance connectivity in the corridor.

NPGEWB Project Goals

Project Goals include:

- Implementing Prince George's County's General Plan, *Plan 2035*, specifically the principles of increased mobility, connectivity, and low carbon transportation methods.
- Improving connectivity by linking the ongoing redevelopment of the New Carrollton Metro Station, and the high-intensity, transit-oriented development of the Discovery District, combined with the employment-focused, mixed-use development facilitated by the College Park City University Partnership, and the University of Maryland, College Park campus. Additionally, there are emerging opportunities at



the College Park Metro, MARC and Purple Line light rail stations. Transit-oriented and employment focused mixed use development brings jobs and housing closer, therefore making bicycling and walking more viable travel options.

- Informing State, regional, County, and municipal decision makers on next steps for the project including bikeway alignment options, design considerations, and next steps for capital programming and budgeting.

Existing Conditions

The Existing Conditions Report documents land use as well as pedestrian/bike originators and destinations/attractions along and adjacent to the project alignment. The Prince George's County Zoning Map depicts a developed suburban area with pockets of medium-density residential and single-family neighborhoods. Many public schools, the University of Maryland, parks, recreation facilities, community centers, libraries, transit access, and commercial hubs are located in close proximity to the study corridor.

PGAtlas, Prince George's County GIS data sets, was used to determine the presence of environmental resources or factors that would require special attention or permitting. Inquiry was made to determine the presence of sensitive species of concern; floodplain; waters and wetland presence; and conservation easements or protected land. Maps depicting Green Infrastructure Regulated Areas; stream, wetlands, and associated 100-year floodplain; and floodplain/drainage easements and woodland conservation easements.

The following traffic related data was reviewed:

- **Average Daily Traffic Volumes** as recorded by Maryland Department of Transportation (MDOT), latest data reviewed was dated 2024.
- **Bicycle Level of Stress** as assessed by MDOT.
- **Crash History** data collected by MDOT for the period 2021 through 2025.

Existing conditions base mapping in CAD format was developed for use in preparing proposed concept alignments and bikeway facility design. Base mapping includes obstacles, topography, right-of-way, lot lines, overhead utilities, existing roadway, sidewalks, and trails.

A site visit was conducted on December 3, 2025. Members of the project team conducted a field walk along the anticipated bikeway alignment as well as several optional terminus alignments. The site visit was attended by County Councilman Eric Olson and a member of his staff, as well as staff from Prince George's County Planning Department and members of the consultant project team. The project team noted the existing conditions that contribute, both positively and negatively, to the current pedestrian experience and

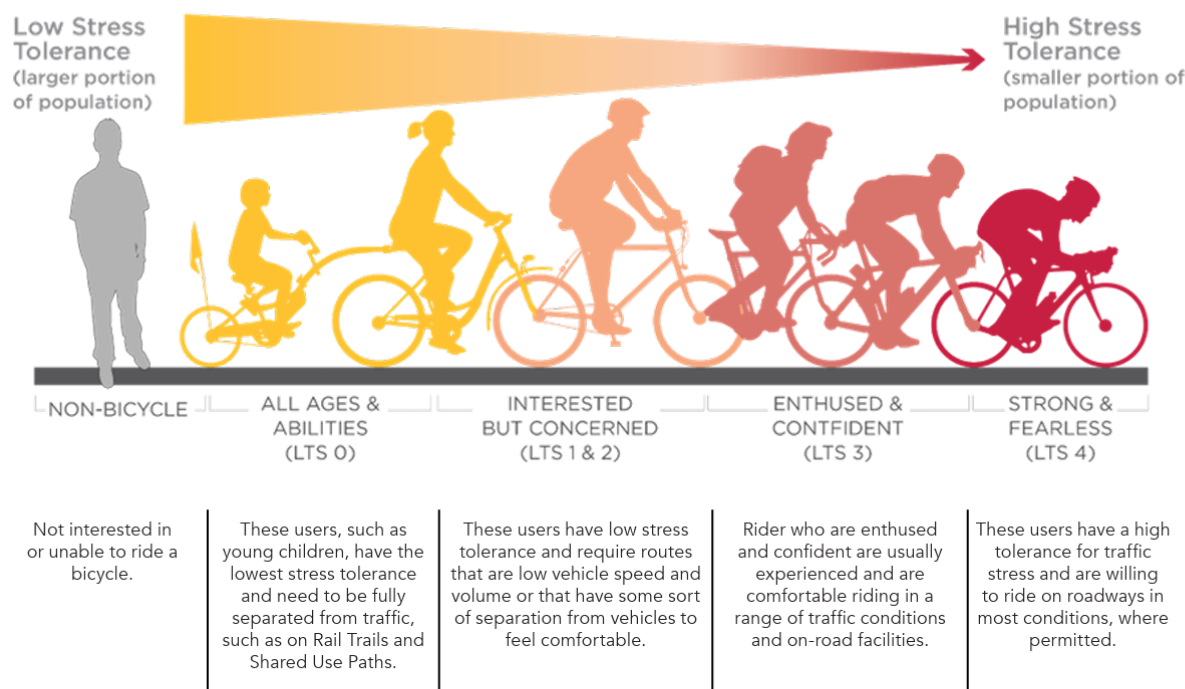
documented roadside obstacles to possible shared-use path alignments. The entire field walk was documented with photos and notes where potential design challenges are anticipated. These are included in the Existing Conditions Report for this study.

Design Considerations

The study segment traverses a range of roadway types, including residential, collector, and arterial roads. Additionally, portions of the alignment are along open space areas and “paper” streets (public streets that were platted but never constructed). Much of the roadway segments along the project corridor currently provide a 5-foot sidewalk at least on one side of the roadway. There are no dedicated bike facilities along the study segment. Opportunities to improve accessibility for both pedestrians and bicyclists are present.

Shared-use paths are the preferred facility design for this segment, because they accommodate the greatest variety of cyclists and also benefit walkers and joggers and commuters (see Figure 3 below for a description of cyclists’ ability ranges).

FIGURE 20: **Types of Bicyclists**



USER TYPES

Adapted from FHWA Bikeway Selection Guide

People riding bikes have varying degrees of tolerance for roadway conditions, which vary based on age, bicycling experience and/or sense of safety from motor vehicle traffic. Most people open to bicycling are willing to ride on low-stress corridors. Smaller portions of the population are composed of enthused and confident riders and strong and fearless riders; these groups have higher stress tolerance. A final group is not interested in or able to bike, regardless of the route quality (Figure 20).

Figure 3: Description of varying cyclist types from the 2050 Maryland Statewide Bicycle & Pedestrian Master Plan



In addition to designing a facility type that is usable for all ages and abilities, minimizing conflicts between cyclists and drivers at intersection and driveway crossings is preferred. Where driveway and intersection crossings are inevitable, safety can be improved by ensuring that motor vehicles and cyclists are visible to each other and that motor vehicle turning movements across a bike facility crossing are performed at a low speed.

Along areas where new pavement is proposed, space will be needed for new drainage and/or stormwater infrastructure to offset increased impervious area. The project area has many existing above-ground utilities, including signal cabinets and utility poles, which are obstacles to avoid during concept development, due to their high costs associated with relocation. Finally, shared-use paths will be 10 feet wide and constructed to meet ADA compliance, which requires a longitudinal slope that generally does not exceed a longitudinal slope of 5% and a lateral slope of 2%. The shared use paths will have a minimum five-foot wide buffer from an adjacent roadway, to allow for street trees, lighting and wayfinding signage.

While grade-separated shared use paths and raised bike paths are the preferred facility type, due to engineering and budget constraints, as well as political considerations, shared-use path construction may not be feasible for every portion of the study segment. Such grade-separation facilities may have to be installed in phases, combined with either interim or permanent on-road bikeway segments. In residential neighborhoods where on-street parking is allowed, removal of parking from one side of the roadway *may* be a trade-off in order to allow for new bike/pedestrian facilities to be constructed in constrained rights-of-way. Finally, where the alignment contains a low volume residential street (e.g. a dead end roadway), on-street markings and accompanying signage may suffice, if vehicle speeds are also low.

The 2017 *East Riverdale-Beacon Heights Sector Plan* provides specific design guidance for suggested facilities along the study segment. For example, the plan notes the following relevant infrastructure recommendations for the alignment:

- For the intersection of Riverdale Rd with Auburn Ave, MD 410, 64th Ave, and the Baltimore-Washington Parkway ramps, application of leading pedestrian intervals (LPI), channelized right turn removal, marked crosswalks, pedestrian median refuges where needed (*Page 206*).
- Installation of Street trees (*page 208*)
- Installation of pedestrian and bike wayfinding signage (*page 208*)
- Installation of bicycle-priority measures where bike routes or facilities cross MD 410 or MD 201 (Kenilworth Avenue), including bike boxes, protected intersections, and separate bike lane signals (*page 216*).



- Installation of a sidewalk on both sides and a two-way protected bike lane on the west side of MD 201 from Good Luck Rd to River Road.
- Installation of sidewalks and a two-way protected bike lane on north side of Riverdale Rd from 64th Ave to Veterans Pkwy.
- Installation of a shared use path along the north side of Tuckerman Street from 62nd place to 64th Ave.
- Installation of a two-way protected bike lane on the west side, along Auburn Ave from Riverdale Road to Brier Mill Run.

A summary of the Plan recommendations is shown in Figure 4.

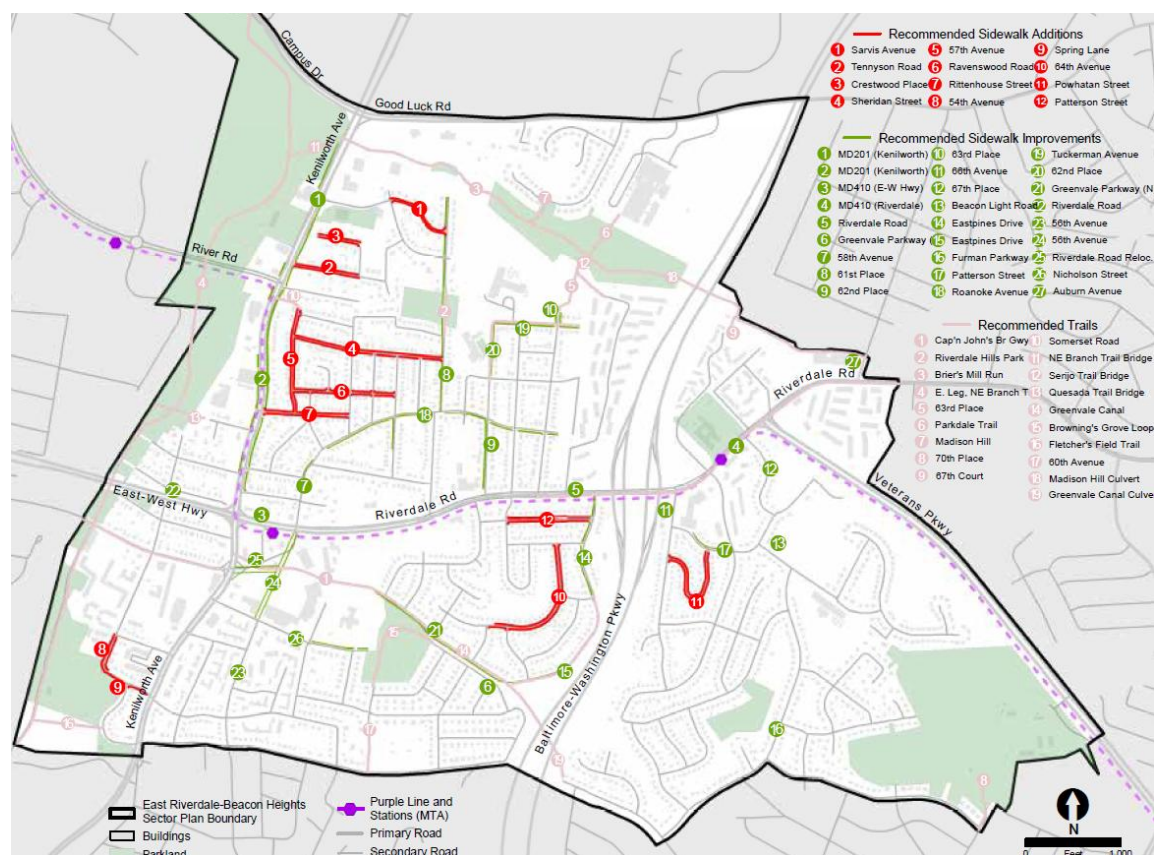


Figure 4: Pedestrian and bike recommendations from Beacon Heights Sector Plan

Initial Concepts

Based on proposed recommendations from the Beacon Heights Sector Plan and an evaluation of best practices for a high quality facility for all ages and abilities, an alignment and specific facilities were developed at a conceptual design level. The following subsections discuss the proposed facilities in detail, starting from the western end of the study segment at River Road and proceeding eastward to the eastern terminus of the study segment at Wildercroft neighborhood park.

Beginning at the western terminus of the study segment, Figure 5 shows two options for a side path (shown in orange) that terminates at River Road – where protected bike lanes are planned¹.

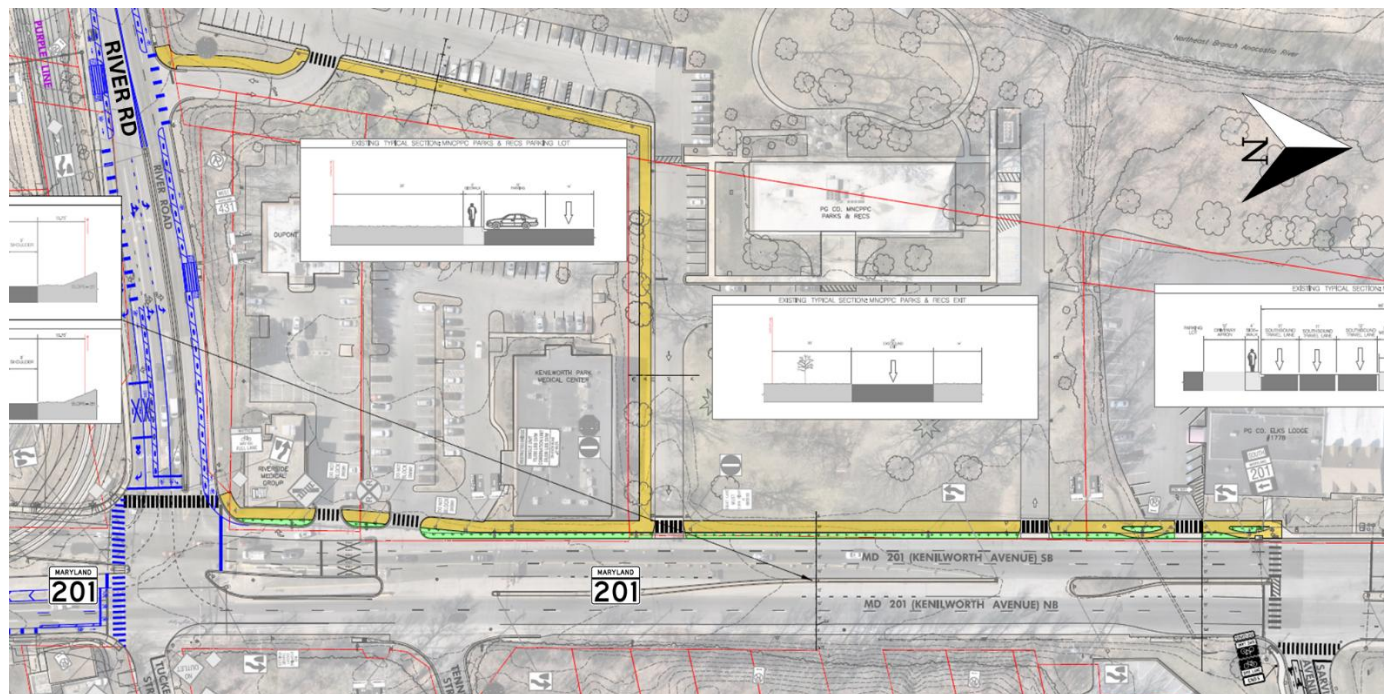


Figure 5: Western terminus of the study segment

One option for a shared use path traverses through M-NCPPC-owned property, from an existing bus stop and driveway along River Road, prior to terminating at the signalized intersection of Sarvis Ave. The other shared-use path option traverses the west side of Kenilworth Ave from its intersection with River Road to Sarvis Ave. This latter option includes a five foot grass buffer from vehicle traffic along Kenilworth Ave. For the former option, there is an opportunity to minimize some construction costs by restriping M-NCPPC's 24-foot wide egress driveway to include a two-way protected bike facility, as shown in Figure 6.

¹ Protected bike lanes are in the design phase under a separate project. River Road is a state-owned roadway

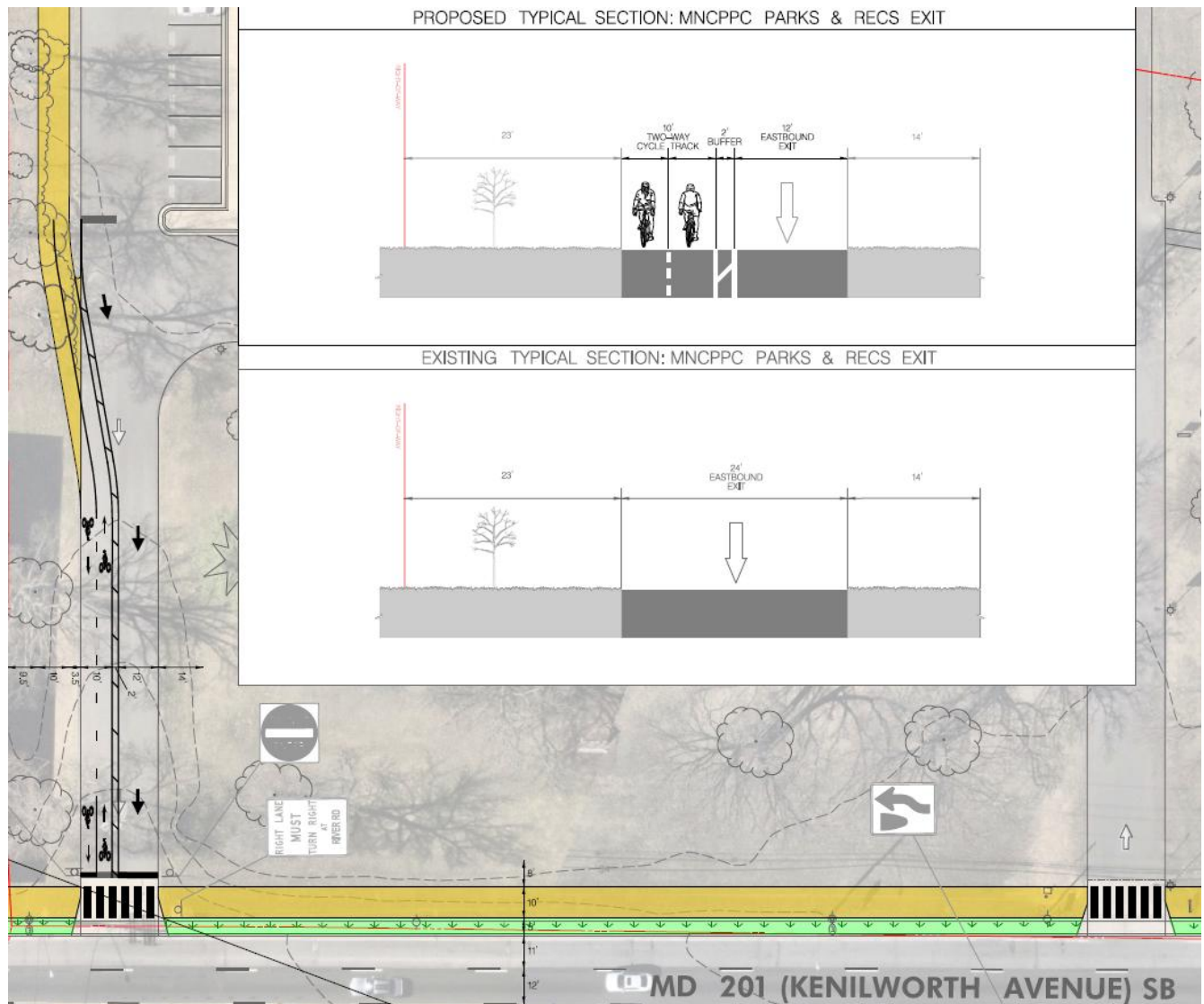


Figure 6: Re-striping M-NCPPC egress driveway to include a protected bike facility.

At Sarvis Ave, cyclists would utilize an existing pedestrian crossing to transfer from the shared use path to a two-way protected bike lane facility along the south side of Sarvis Ave, as shown in Figure 7.

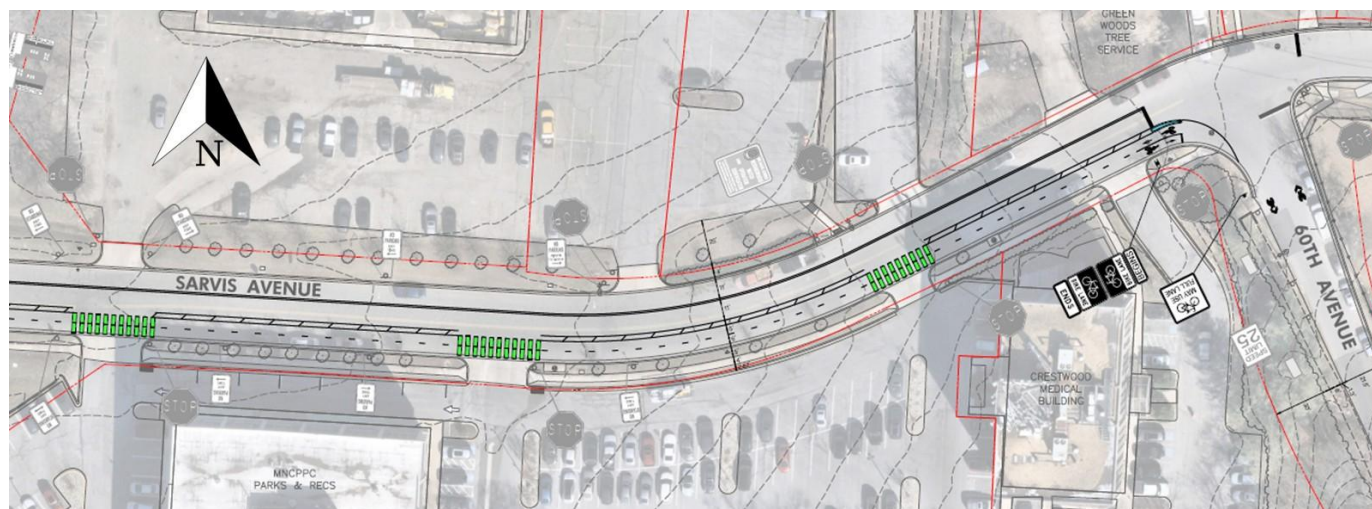


Figure 7: Proposed two-way protected bike lanes along the south side of Sarvis Ave

The two-way protected bike lanes would replace unsigned curbside parking, adjacent to private parking lots. While a two-way facility is proposed, the project teams noted that there are other alternatives for bike facilities along Sarvis Ave. Figure 8 shows a typical cross-section of the existing roadway and then 3 other alternatives, including the two-way facility. Two other options include protected bike lanes on both the north and south side of Sarvis Ave, or one option that retains curbside parking, but locates it on the north side of Sarvis Ave, while the south side of the road contains a buffered climbing bike lane heading east; westbound Sarvis Ave would have a shared bike/vehicle lane.

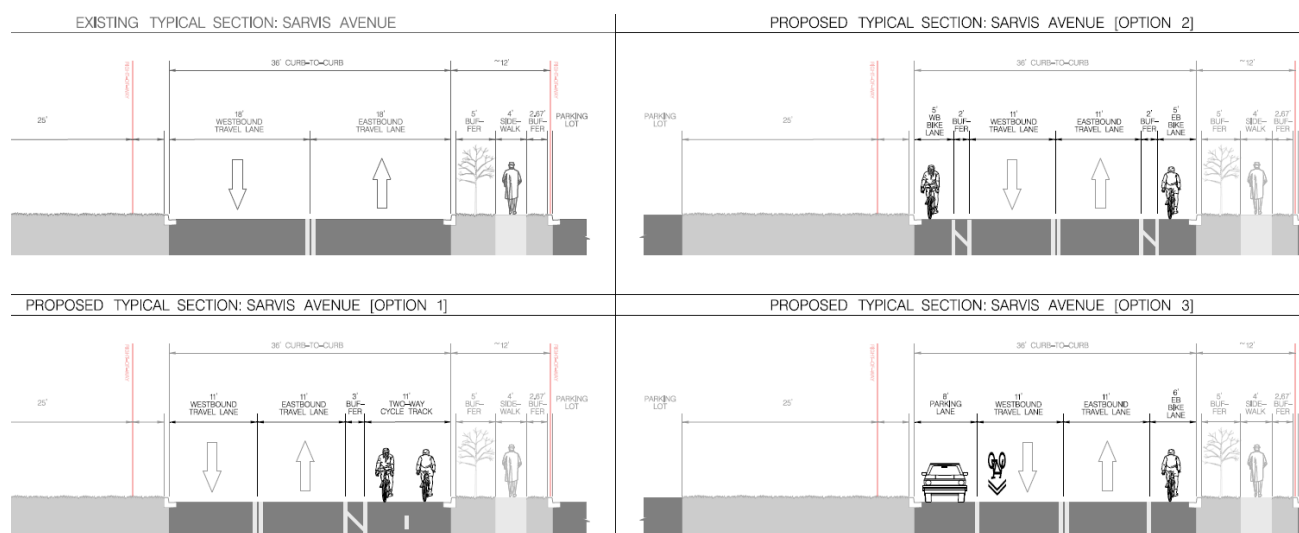


Figure 8: Existing cross-section and 3 alternative cross-sections for bike facilities along Sarvis Ave

East of Sarvis Ave, the proposed bikeway facility transitions to an on-road shared facility (as shown in Figure 9), with markings and signage along 60th Ave /Norman Ave. 60th Ave and Norman Ave are local residential roads with no through traffic to adjoining neighborhood

and terminate at William Wirt Middle School. Accordingly, these roads have very little traffic volume – particularly outside of school pickup/drop-off.

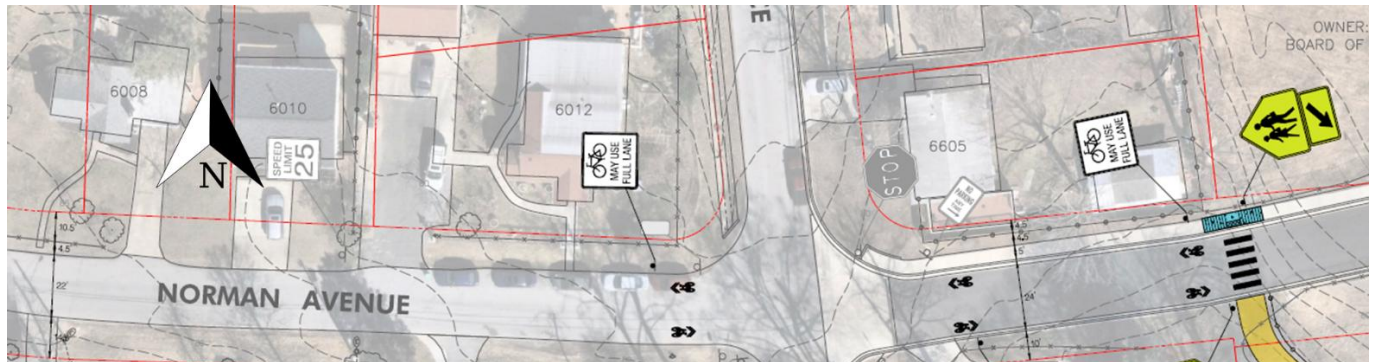


Figure 9: On-road bike facility along Norman Ave, just west of William Wirt Middle School

Figure 9 shows sharrows markings within the roadway; however, their precise spacing and location relative to the pavement edge will conform to County standards. Prior to the middle school property, the bike facility transitions to a shared use path along the southwest perimeter of the school site, located where a prior narrow pathway existed before the school's demolition and reconstruction last year.

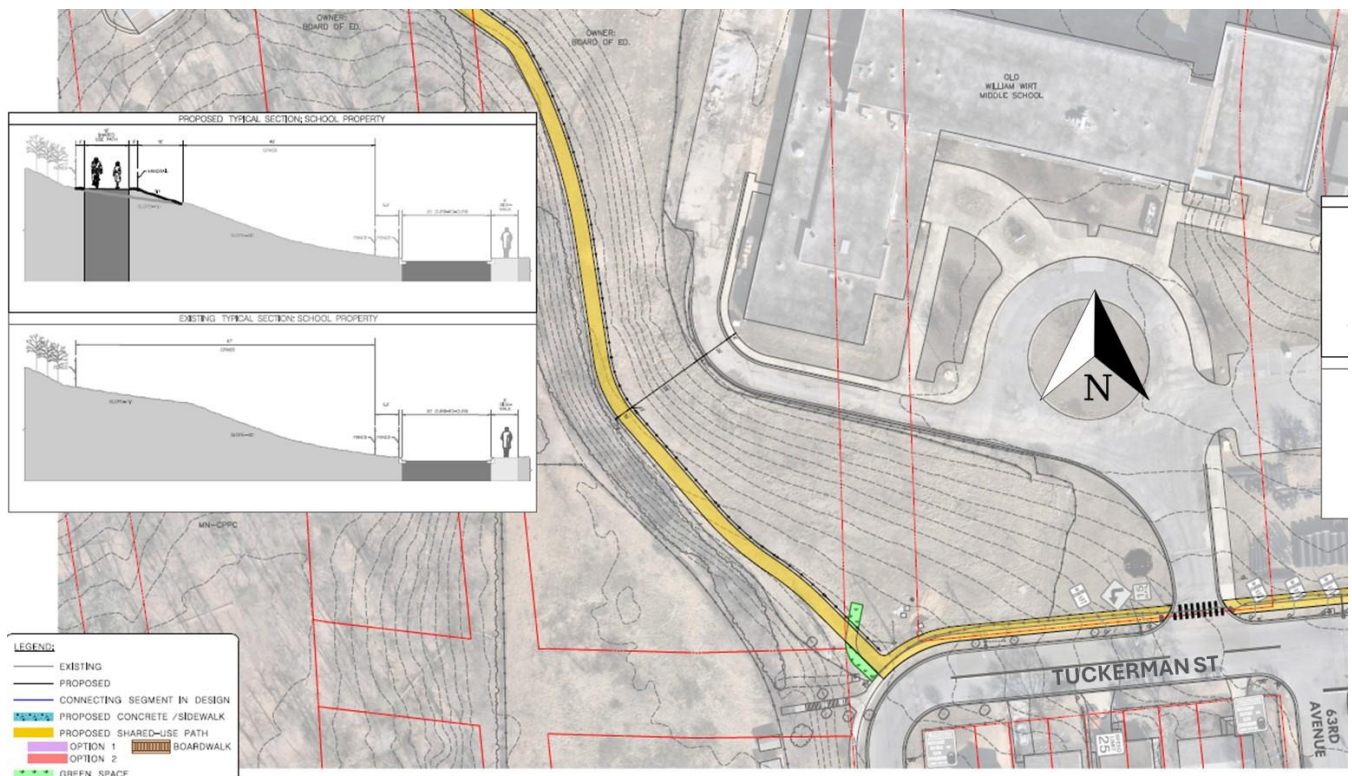


Figure 10: Proposed shared use path along the southwest perimeter of William Wirt Middle School and along the north side of Tuckerman St

Tuckerman Street is not a through street and terminates at 64th Ave, which is paper street – a roadway that is publicly owned and platted, but was never constructed. As shown in Figure 11, the proposed bike facility transitions from the shared use path along the street's north side, briefly into the roadway, before transitioning to an above-grade boardwalk along the 64th Ave paper street. This existing 64th Ave paper street, south of Tuckerman Street, is approximately 60 feet wide and is largely wooded, with some areas that appear to serve as stormwater drainage areas. The boardwalk is proposed to be 14 feet wide and have handrails. One potential option to reduce costs along Tuckerman Street would be to provide in-road two-way protected bike lanes, in lieu of a side path, along its north side between 62nd Ave and 63rd Ave; this option would remove curbside parking for residents and for pick-up and drop-off operations, if utilized.

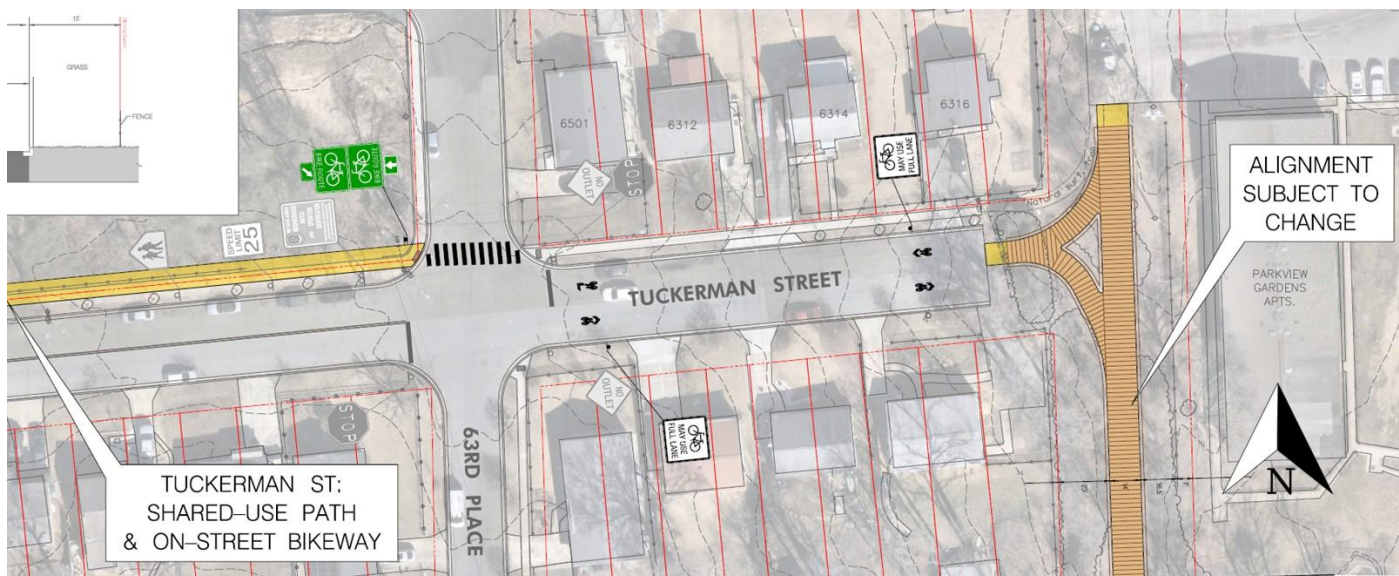


Figure 11: Proposed bike facility transition from Tuckerman St shared use path to 64th Ave boardwalk and connection to Parkview Garden apartments.

As shown in Figure 12, 64th Ave paper street transitions into a paved street, north of Riverdale Road, allowing access to both the Parkview Gardens apartments and River Park condominiums. At this transition, the proposed facility changes from a boardwalk to a shared use path that replaces the existing sidewalk along the east side of 64th Ave. While a boardwalk is proposed for 64th Ave paper street, the precise decking material should be evaluated for long term maintenance, including consideration of modular lightweight concrete sections for all, or portions of, the proposed boardwalk.

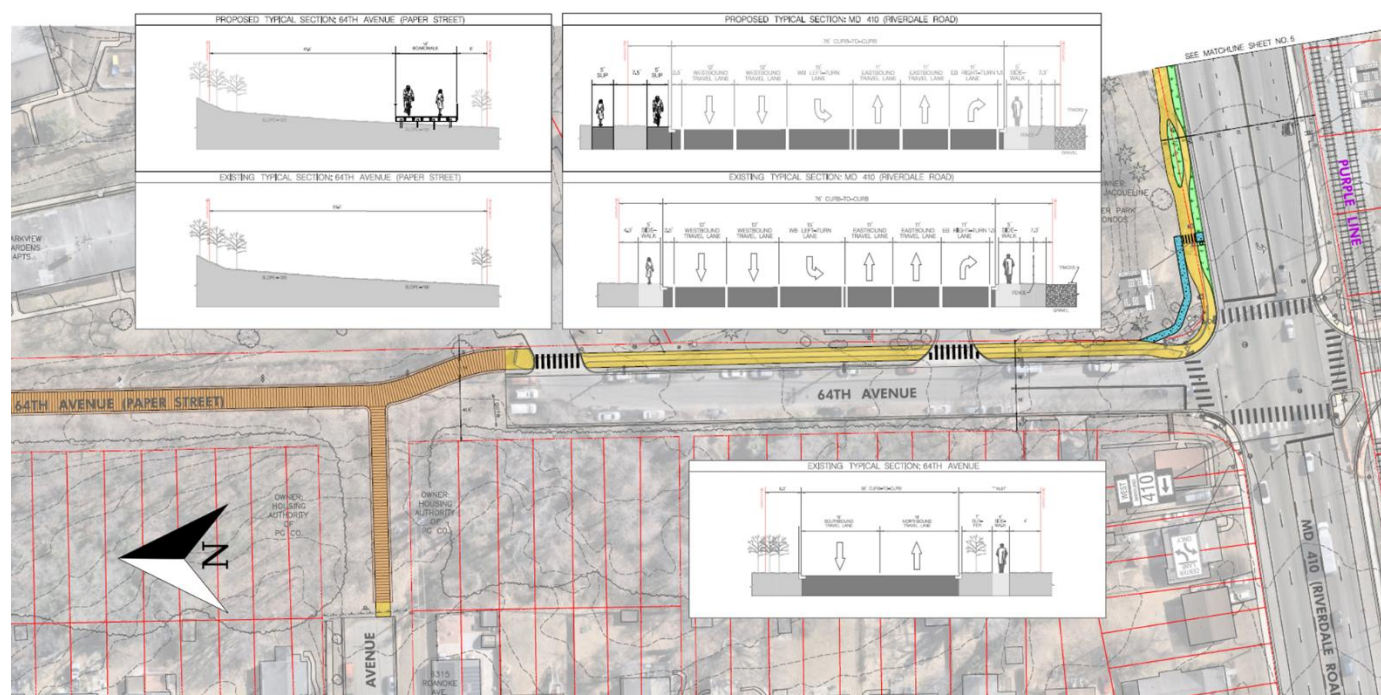


Figure 12: Proposed bike facility along 64th Ave, north of Riverdale Road

Figure 12 also shows branch connections from the proposed 64th Ave boardwalk to the neighborhood side streets – Roanoke Ave and Sheridan Street – via narrower 10-foot boardwalks, allowing direct neighborhood access to the study segment. Note, that while these connectors are also shown as boardwalks, the topography may allow for an ADA-compliant asphalt surface path that would reduce the cost of the project. Finally, both Roanoke Ave and Sheridan Street have sidewalk which should connect to the neighborhood branch paths either directly or via a curb cut at the end of the road terminus.

From 64th Ave to Auburn Ave, the proposed facility is a 10-foot wide shared used path, with 5-foot grass buffer, along the north side of Riverdale Road. This facility type retains this buffer the entire length with the exception of a short segment under the Baltimore-Washington Parkway overpass, but remains 10-feet wide, as shown in Figure 13.

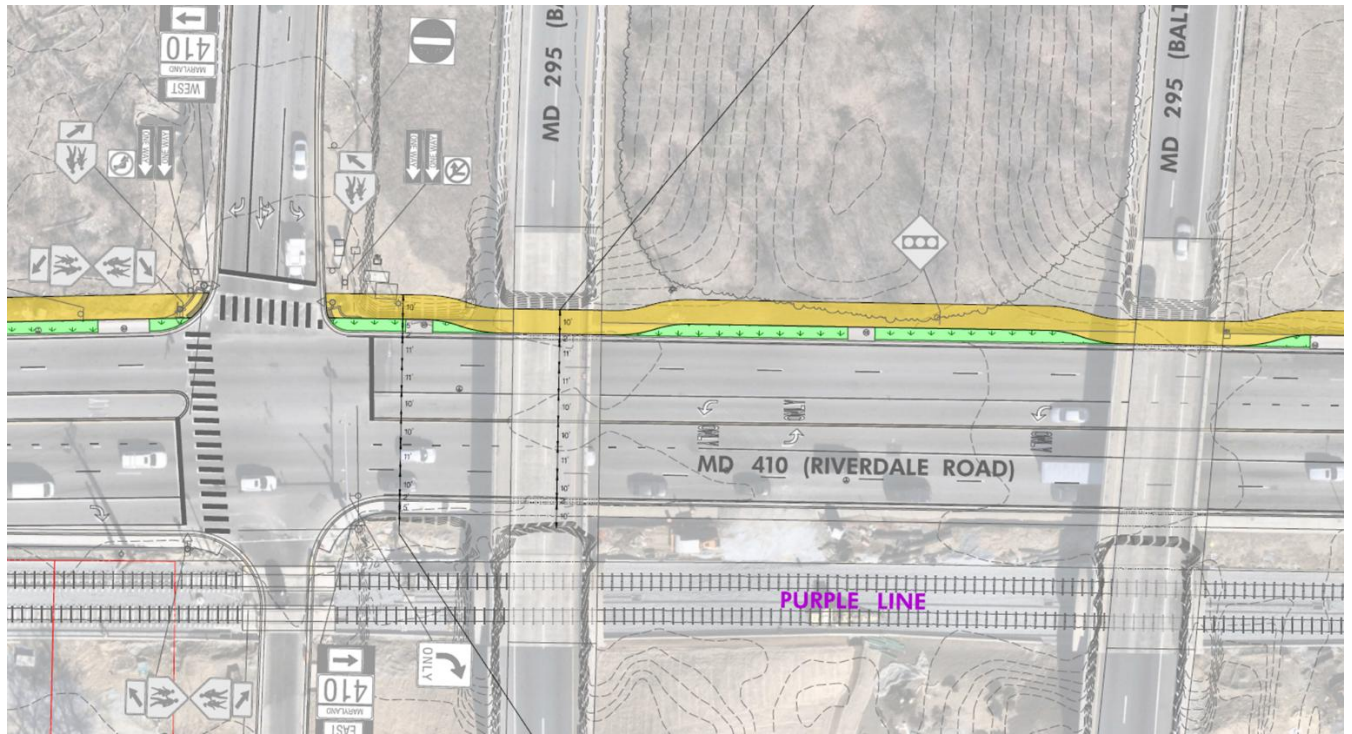


Figure 13: Proposed buffered shared use path along the north side of Riverdale Road.

East of the Baltimore-Washington Parkway overpass, the proposed shared use path crosses 67th Ave, where a signalized pedestrian crossing provides access to the Beacon Heights Purple Line station, currently under construction, as shown in Figure 14.

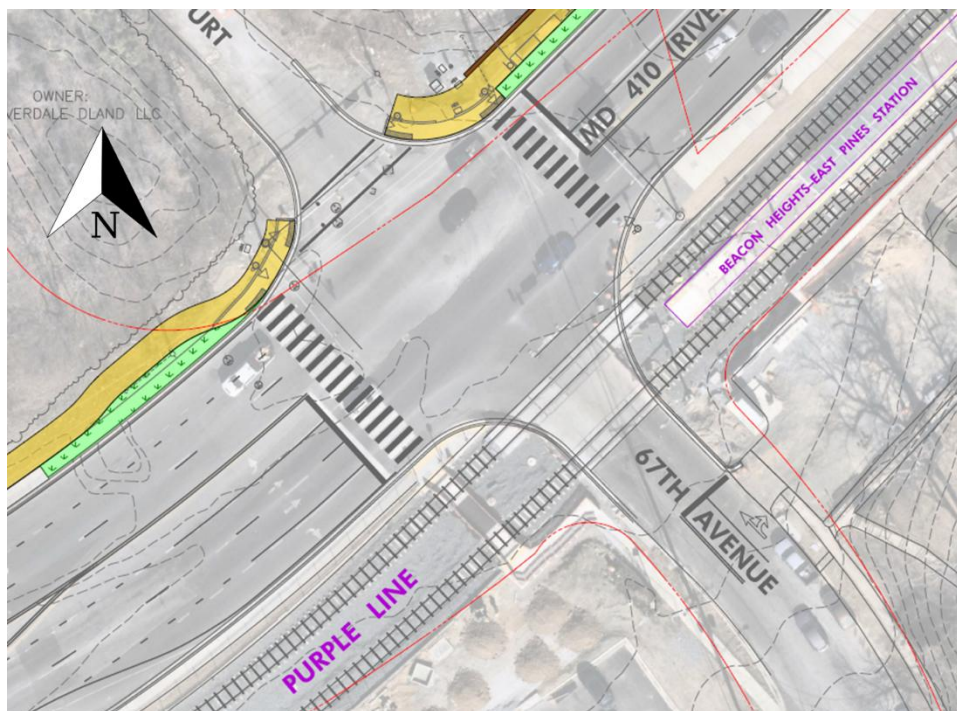


Figure 14: Proposed buffered shared use path opposite of the Beacon Heights Purple Lines Station

Traversing east, the shared use path is proposed with two options at Auburn Ave, as shown in Figure 15.

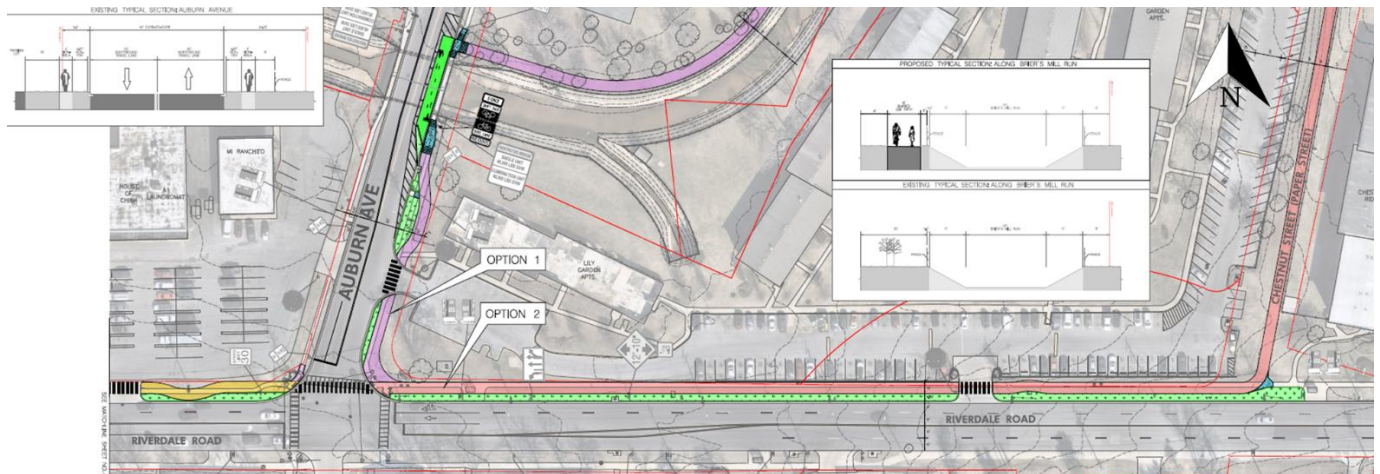


Figure 15: Proposed facility options from the intersection of Auburn Ave at Riverdale Road, heading toward Wildercroft local park

Figure 15 shows the side path with two options for alignments that head northeast toward Wildercroft local park. The first option utilizes existing right of way along Auburn Ave and the bridge over Brier's Mill Run; it then traverses along the north side of Brier's Mill Run along a mix of public and private properties. The second option continues along the north side of Riverdale Road before utilizing Chestnut Street – a 40-foot wide paper street that aligns north-south and is located between the Chestnut Ridge apartments and the Lily Garden apartments. Both options terminate at Wildercroft local park with access to Longbranch Drive, as shown in Figure 16.

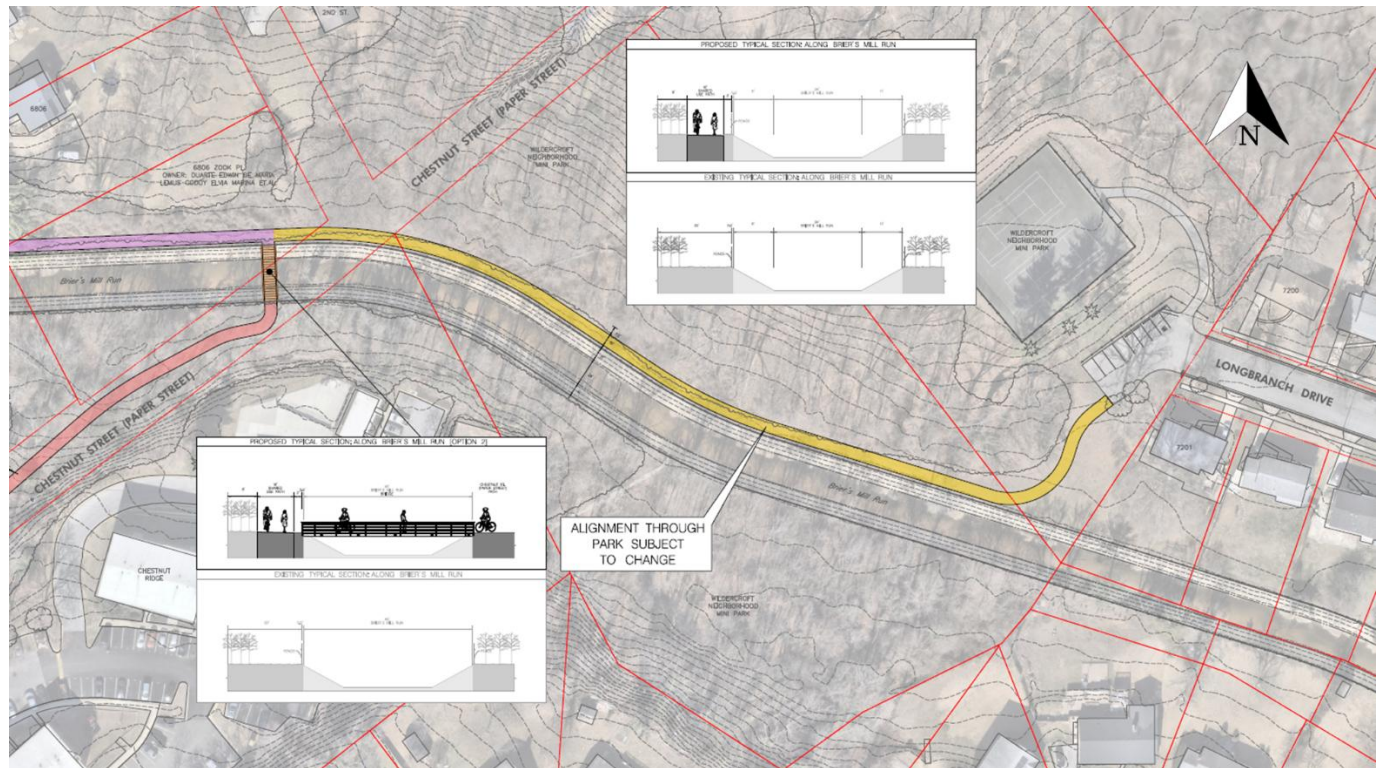


Figure 16: Proposed facility terminating at Wildercroft local park

The second option that utilizes Chestnut Street requires no private property takes; however, it does require a new pedestrian bridge crossing of Brier's Mill Run.

Finally, Auburn Ave is shown as having a shared use path and two-way protected bike lane combination along the east side of the road between Brier's Mill Run and Riverdale Road; two other options were also developed that provide biking facilities differently. As shown in Figure 17, Option 1 proposes a side path on the east side of Auburn Ave, north of Riverdale Road; Option 2 proposes a northbound protected bike lane and shared use path along the southbound side; and Option 3 proposes a northbound and southbound curbside bike lane.

PROPOSED TYPICAL SECTION: AUBURN AVENUE

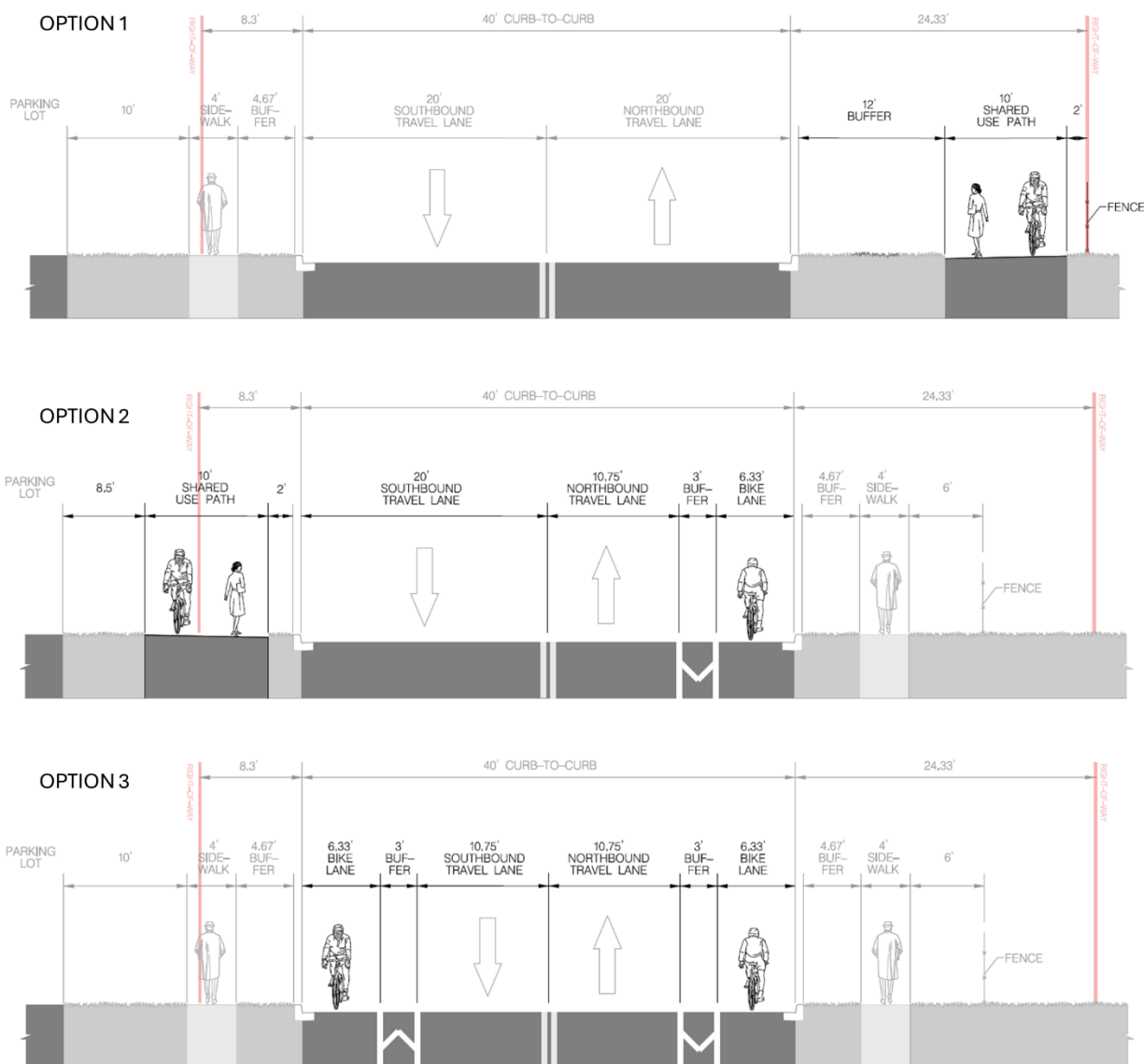


Figure 17: 3 proposed typical cross sections for Auburn Ave between Riverdale Road and Brier's Mill Run

Only Option 3 requires the removal of the southbound right turn lane along Auburn Ave at Riverdale Road. A traffic count and subsequent traffic analysis showed that removing the right turn lane would result in long vehicle queues upstream of Auburn beyond Brier's Mill Run in both the AM and PM peak commuting hours.

Stakeholder and Public Engagement

A public charrette was held on the evening of April 20, 2026, 6:00 pm to 8:00 pm, at the Prince George's County Department of Parks and Recreation auditorium located at 6600 Kenilworth Avenue, in Riverdale Park. The venue is located adjacent to the study corridor. At



this charrette, initial concepts were presented in a series of ten 8-foot long maps, representing the entire 2-mile study segment. A brief presentation was made highlighting the description of the overall project corridor, as well as a description of this specific study segment. This presentation can be found in **Appendix A**. Attendees were asked to provide general input on a comment sheet or directly to Project Team staff in attendance, while specific comments could be drawn or written directly on the referenced maps.

Members of the general public and the following agencies and advocacy groups were invited to the public charrette in order to provide input to assist the design team in identification of challenges and opportunities within the study corridor, user patterns of movement, and general design preferences.

Agencies:

- City of College Park
- City of New Carrollton
- College Park City University Partnership
- Maryland Department of Transportation-State Highway Administration
- Metropolitan Washington Council of Governments
- Prince George's County Council
- Prince George's County Department of Permitting, Inspections, and Enforcement
- Prince George's County Planning Department
- Prince George's County Department of Public Works
- Prince George's County Public Schools
- Town of Riverdale Park
- University of Maryland, College Park

Advocacy Groups:

- Active Transportation Advisory Group (ATAG)
- City of College Park Bicycle & Pedestrian Advisory Committee
- East Coast Greenway Alliance (ECGA)
- Washington Area Bicyclist Association (WABA)

Public Charrette Input

The design team provided an overview of the existing condition for each segment of the study corridor and recorded observations and concerns provided by those in attendance. A full list of public comments is included as **Appendix B**. The following is an overview of the comments received.

Western Terminus: River Road, west of Kenilworth Avenue:



Input focuses on safety of pedestrians and cyclists.

- Provide a mid-block crosswalk aligned with River Road for access to MNCPPC property and existing transit stops.
- Do not use bike box on River Road.
- Reconfigure eastbound River Road approach lanes, 2 left turn lanes and 1 shared through/right lane, to allow bike lane to extend to Kenilworth Avenue without a shared lane with vehicles.
- Consider additional signage and/or bike signal at Kenilworth Avenue and Sarvis Avenue.

Sarvis Avenue and Norman Avenue to 60th Avenue: Input focuses on consideration for the most appropriate facility type for the corridor segment and concern for conflicts with traffic generated by the school.

- Consider traffic volumes during peak hours for school pick-up/drop-off.
- Shared-use paths or two-way protected bike lanes are preferable over directional curbside bike lanes.
- Provide directional signage at transitions between streets.
- Consider adding sidewalk along 60th Avenue.

William Wirt Middle School perimeter and Tuckerman Street: Input focuses on bikeway alignment and accessibility.

- Use existing desire lines to inform bikeway alignment.
- Consult with PGCPs for agreement on bikeway alignment along perimeter of William Wirt School.
- Add sharrows, directional signage at transition from Tuckerman Street to 63rd Avenue.
- Provide curb cuts and curb ramps.

64th Avenue paper street: Input focuses on connectivity to adjacent residential development and facility maintenance.

- Consider design options for separation of bikeway from 64th Avenue.
- Agreement to provide connections from side streets and the adjacent apartment complex to the proposed bikeway.
- Use existing desire lines to inform bikeway alignment.
- Suggest ownership of paper street be transferred to MNCPPC for maintenance and upkeep.

Riverdale Road, East of 64th Avenue: Input focuses on safety.

- Consider designating a no right turn on red at MD 295 off ramp.
- Consider options for additional separation/protection to buffer from motor vehicles.
- Add continental crosswalk at 67th Avenue.

Riverdale Road, West of Auburn Avenue: Input focuses on safety.



- Improve pedestrian ramp connections at Veterans Parkway.
- Narrow curb radii at Fernwood Terrace and adjacent driveway.

Auburn Avenue/Riverdale Road, East of Auburn Avenue/ Brier's Mill Run: Three options were presented with differing opinions regarding the best option.

- Option A
 - Prefer path along Brier's Mill Run.
 - Prefer shared-use path for separation of users from motor vehicles.
 - Noted that Auburn Avenue is riskier than Chestnut Street paper street due to potential easement issues.
- Option B
 - Appreciation of retention of green space along Riverdale Road.
- Option C
 - Concern with bikeway being located in the floodplain.
 - Consider adding a mid-block crossing of Riverdale Road at Chestnut paper street.
 - Consider more narrow curb radii.

Eastern Terminus Brier's Mill Run and Wildercroft Park: Input focuses on cyclist maneuverability.

- Consider 8-foot wide sidewalks on Good Luck Road, Madison Hill subdivision to Auburn Avenue.
- Add turning radius where bikeway meets/crosses Brier's Mill Run pedestrian bridge.
- Confirm parcel ownership by MNCPPC.

Addressing Feedback in a Preferred Concept

The project team met to address the feedback and determine how each would be reflected in an updated and revised concept that would then be advanced into the next design stage. All comments were divided into 3 categories:

- Comments that require no response (e.g., satisfied with current design or a desire to see design constructed, etc.)
- Actionable comments to be reflected in an updated concept
- Comments to be noted and addressed in subsequent design phase

Comments reflected in updated concept

The following comments will be addressed in the next design phase

- General question about traffic volumes on Sarvis Avenue.
 - *Project Team follow-up:* Traffic count from June of 2025 shows peak hours coinciding with school drop-off and pick-up times (8:00 to 9:00 AM, and 3:00 to 4:00 PM, respectively). The midday hourly volume is approximately 150 cars per hour, combined for both eastbound and westbound directions of Sarvis Ave.



- Utilize existing goat path for alignment of proposed boardwalk.
 - *Project Team follow-up:* Boardwalk alignment will follow any existing goat paths where terrain is level, but will be designed to minimize steep longitudinal slopes
- Who will maintain the boardwalk?
 - *Project Team follow-up:* Prince George's County Department of Parks and Recreation would be the likely agency responsible for maintaining the boardwalk, but this has yet to be determined.
- Transfer ownership of paper lots along boardwalk to the entity that will own and maintain boardwalk to make maintenance and accessibility easier.
 - *Project Team follow-up:* County will explore transfer of property from Housing Authority to M-NCPPC Parks Department.
- Suggest no right turn on red for SB MD-295 off ramp.
 - *Project Team follow-up:* This is recommended to reduce right turn conflict with cyclists. Will advance request with MDOT and the National Park Service in the next design phase.
- Add protected infrastructure along Riverdale Road under the BW Pkwy overpasses to protect wide sidewalk from motor vehicles.
 - *Project Team follow-up:* Will evaluate opportunity for curb mounted hard or soft buffer options with MDOT in next design phase
- Consider midblock crossing of Riverdale at paper street (Chestnut St) to serve residents directly on the south side of Riverdale Road.
 - *Project Team follow-up:* This crossing will benefit all residents south of the proposed alignment if Option 2 is advanced in the next design phase. Project team will evaluate midblock crossing in next design phase with and without median pedestrian refuge and subsequent road diet (a median refuge is preferred in order to remove a multiple lane threat that would be created with a crosswalk across 4 continuous lanes of vehicle traffic.
- Check Parcel ownership of Option 1 versus Option 2 for eastern terminus
 - *Project Team follow-up:* Parcel ownership along Brier's Mill Run is known. Most of the property is publicly owned; however, there are some parcels that are private. If Option 1 is advanced, then County will have to negotiate for cost of property strip takes.

Comments incorporated into updated concept

- Add midblock crossing (of River Rd) for SUP option that goes through MNCPPC property (there are already bus stops there).
 - *Project Team follow-up:* Revised concept to include a proposed crosswalk and landing area at MNCPPC driveway across River Road to the bus stop, as shown in Figure 18. There is an opportunity for a HAWK signal at this location to be activated by walkers or cyclists.

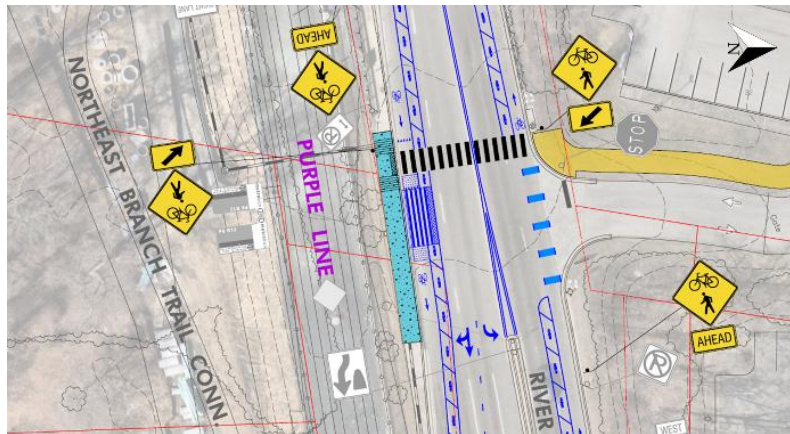


Figure 18: Proposed crosswalk across River Road

- Consider bike signal across MD 201 at Sarvis Ave
 - *Project Team follow-up:* The need for a bike signal will be evaluated in the next design phase; however, cyclists will be able to cross with the WALK signal.
- Add bike detection in Sarvis Ave bike lane
 - *Project Team follow-up:* Concept revised to include bike detection in conjunction with MUTCD-compliant “Bikes use pedestrian signal.” Alternatively, the traffic signal can be modified for pedestrian recall timing (e.g. WALK signal activates once per signal cycle *without* having to push a pedestrian call button).
- Increase pedestrian waiting area on southeast quadrant of intersection
 - *Project Team follow-up:* concept revised to increase pedestrian landing area at the southeast quadrant of intersection of MD 201 at Sarvis Ave.



Figure 19: Proposed curb radius change and increased pedestrian waiting area

- Signage needed where alignment turns from Sarvis Ave to 60th Ave and along 60th Ave between Sarvis Ave and the SUP at William Wirt Middle School and at the beginning of the William Wirt Middle School shared-use path.
 - *Project Team follow-up:* Concept revised to include Wayfinding Signage – MUTCD signage D11-1 sign with arrows, as shown in Figure 20. Proposed traffic calming speedhump added on 60th Ave, just north of Crestwood Ave.

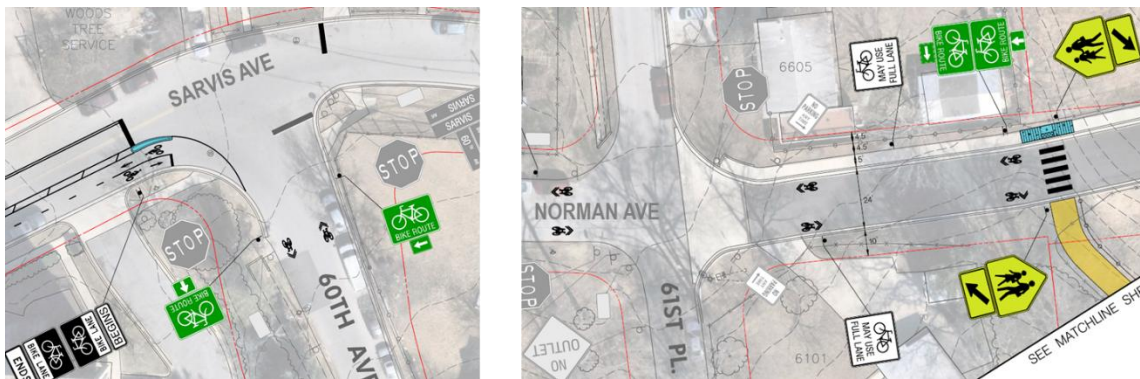


Figure 20: Proposed Bike Route wayfinding signage

- Add angled sharrows for the transition along Tuckerman St from SUP to on-road biking.
 - *Project Team follow-up:* Concept revised to include angled sharrows on Tuckerman Street for the short dead-end segment between the proposed Tuckerman Street shared use path and the proposed 64th Ave boardwalk. Additionally, a pedestrian ramp has been added to the northwest corner of the intersection of Tuckerman Street at 62nd Ave to allow path access from on-road cyclists along 62nd Avenue or along Tuckerman St. Incorporation of detectable directional warning strips are recommended along the sidewalk where the bike ramp crosses it, to warn blind or disabled pedestrians along the 62nd Ave sidewalk from entering the roadway via the bike ramp.
- Add another east connection to the Parkview Gardens apartment complex.
 - *Project Team follow-up:* Another access connection is recommended to the apartment complex from the boardwalk, and this connection will likely align with the complex's parking lot located opposite Sheridan Street. This will provide a third access connection from the complex to the boardwalk.
- Widen path beyond ten feet at the intersection of 64th Avenue and Riverdale Road. Consider barriers along the top of the curb to further delineate path from travel lane.
 - *Project Team follow-up:* This corner has been revised to include a secondary sidewalk parallel to the shared use path; this sidewalk follows the alignment of the existing "goat path" that travels from 64th Ave to the Riverdale Road bus stop as shown in Figure 21. This allows for separation of walkers to and from the bus stop with cyclists that may be traversing along the side path.



Figure 21: Existing goat path from 64th Ave to WMATA bus stop and proposed sidewalk and side path

- Apply continental crosswalk across trail crossing of 67th Ave
 - *Project Team follow-up:* Continental style crosswalks will be proposed for all shared use path crossings of driveways and roads.
- Is the crossing of Riverdale Road, at Veterans Pkwy, staying? If so, show the improved pedestrian ramp connection.
 - *Project Team follow-up:* Pedestrian ramp is modified in the conceptual drawings to provide access to the crosswalk from the shared use facility
- Narrow the curb radii at the trail crossing of Fernwood Terrace, as well as for the driveway immediately to the west of Fernwood Terrace.
 - *Project Team follow-up:* Curb radii at both locations are proposed to be narrowed. This geometric change will result in slower motor vehicle turns across the shared use path.
- Narrow the curb radius at the northwest quadrant of the intersection of Auburn Ave at Riverdale Road.
 - *Project Team follow-up:* Curb radii will be narrowed to induce slower right turn movements, from Auburn Ave, across the shared use path.
- Add a turning radius where side path meets and crosses Brier's Mill Run at the pedestrian bridge.
 - *Project Team follow-up:* The T-intersection of the proposed path with the pedestrian bridge over Brier's Mill Run will have a broad radius to accommodate easier turn movements by cyclists, as shown in Figure 22. However, the final design will likely only have a T-intersection if *both* the Chestnut Street alignment and the Brier's Mill Run alignment are constructed. Currently the proposed design assumes only one option will progress to construction.

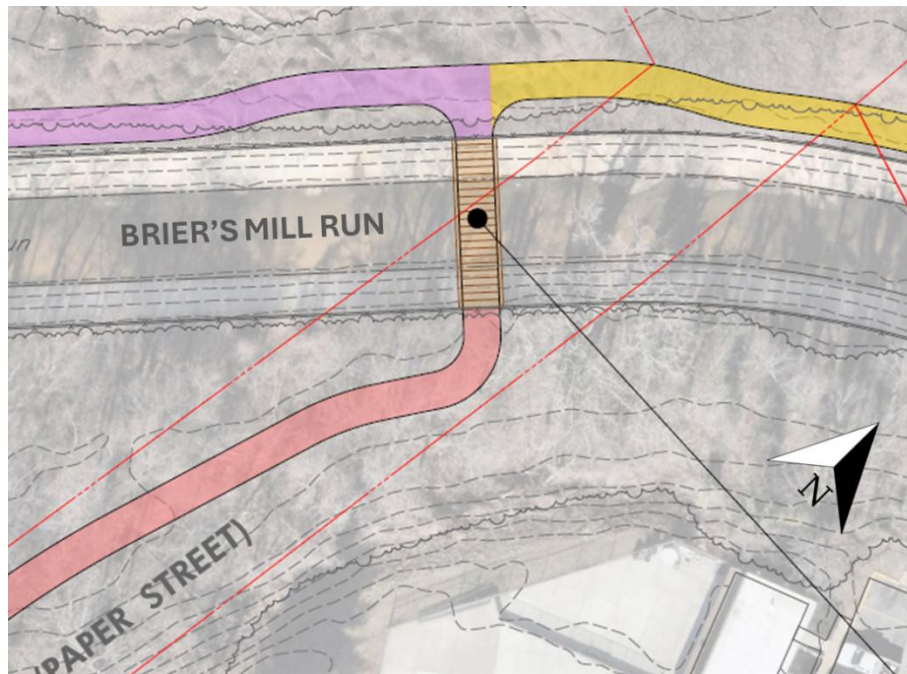


Figure 22: Shared use path T-intersection, north of Brier's Mill Run

Appendix D contains the proposed 10% design that incorporates all of the above changes. These plans will be advanced to the next design stage.

Wayfinding Signage

A wayfinding signage plan is integral to guide cyclists through a large regional bike network whose facilities can be both on-road and off-road. Like street signs, wayfinding signage at critical intersections tells cyclists the direction and distance to identified destinations such as transit stations, major shared use paths, and cultural/institutional amenities. Wayfinding serves as the glue to bind the different bike facilities together and makes them more attractive to casual users. An expandable wayfinding plan with bike route and destination plaque sign assemblies, consistent with the Maryland Manual of Uniform Traffic Control Devices, are critical elements for the NPGEWB. This helps leverage the growing number of transit, institutional, commercial, and recreational amenities within the County. Consistent wayfinding signage can guide users to:

- Employment hubs
- Retail hubs
- Community parks
- Cultural amenities
- Trail heads
- Transit stations
- Existing and future bikeshare stations



- Schools

The goal of a wayfinding signage standard and plan is to provide turn-by-turn guidance, with mileage markers, to key destinations. It is recommended that the next design stage incorporate a standard logo for the bikeway and list destinations to be identified with wayfinding signage in a manner similar to guide signage used on roadways.

Expected Permits and Additional Engineering Services

Once concepts are finalized for this project segment, the next step for most of the segment is preliminary design and then final design / construction documents; the on-road portions of this study segment can proceed directly to final design. There are several additional engineering services and permits that will be needed, depending on the complexity of the design and the funding sources.

Engineering Services

Preliminary and final design involve several engineering services related to final design including right of way acquisition, design stormwater management, designing for ADA compliance, and addressing existing utilities, topography, and landscaping needs. While not every phase of the study segment will need the same level of engineering services, some expected needs are:

- *Lighting Design:* Where needed, lighting design and photometric analysis will be required if new street lighting or pedestrian-scale lighting is added to any phase of the study segment.
- *Landscaping Design:* needed for new street streets or to replace removed trees as mitigation.
- *Structures:* Structural analysis and design will be needed for the boardwalk portion of the proposed facility and if pedestrian bridge is required near the eastern terminus.
- *Utility Designation:* Most utility designation will be non-invasive using specific equipment to locate conductive utilities; or utilizing as-built recordings. Vertical depth and horizontal location of all utilities is needed typically for construction of stormwater facilities and boardwalk supports and potentially some shared used paths.
 - *Test Pits* may be required when a designer has to verify a given buried utility's precise location and depth below the surface.
- *Boundary Survey:* Where property lot lines are in dispute, there will be a need for a boundary survey and preparation of right-of-way fee simple acquisition plats or easement plats.
- *Topographic Survey:* Survey will be needed for all off-road facilities. Survey typically depicts 1' contour intervals and spot elevations, as well as horizontal/planimetric location of all buildings and structures, utility poles, conduits, structures, overhead lines, manholes, water and sewer mains, hydrants, meters, fences, edge of paving, curb and gutter, and tree lines. In areas of proposed disturbance, topographic survey also entails all stand-alone



individual trees (type and size), hedges, shrubs, landscape beds, storm drain pipes and drainage facilities, streams, non-tidal wetlands,

- *Soil borings:* The two purposes of soil borings for this project segment will be to determine the foundation needed for boardwalk pilings and the infiltration properties for a stormwater treatment facility.
- *Stormwater analysis and design:* The addition of shared use path and boardwalk facilities will alter runoff patterns and impervious surface areas, triggering requirements under the Maryland Department of the Environment's (MDE) Erosion and Sediment Control (ESC) and Stormwater Management (SWM) regulations. Traditional on-site Environmental Site Designs facilities may not be feasible due to constrained geometry of a built-up urban environment and may require employing innovative retrofit drainage strategies—such as tree box filters, permeable surface zones, and modular micro-bioretenment units—that meet MDE performance standards while preserving constructability. SWM and drainage analysis for the shared use paths adjacent to roadways should explore using green streets practices such as rain gardens, micro-bioretenment, and grass swales.

Permits

Permits and approvals needed for the project segment will typically be granted by either MDE or Prince Georges Department of Permitting, Inspections and Enforcement (DPIE). However, the permits needed will be dependent on the phase of the study segment and its final design. Typical permits that can be expected during final design of the study segment include:

- *Grading permit and Sediment & Erosion Control Permit:* submitted to DPIE and Prince Georges Soil Conservation District, respectively, for approval.
- *Drainage permit:* submitted to DPIE for approval.
- *Stormwater Approval permit:* submitted to DPIE for approval
- *Flood Plain Approval / Joint Permit Application (JPA):* submitted to both MDE and DPIE
- *National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Discharge Permit:* submitted to MDE but only needed for projects with a limit of disturbance exceeding one acre.
- *Forest Conservation:* submitted to DPIE for approval. A natural resources inventory (NRI) and forest stand delineation (FSD) will be needed for phases that involve tree removal. Forest Conservation Plans are required, and tree save plans (TSP) will be needed, where mitigation is required or desired. Additional Roadside Tree Permit or Reforestation Permit may be needed for new street trees.
- *NEPA:* Federally funded projects will require a National Environmental Policy Act (NEPA) review and approval process, ensuring full compliance with Maryland State Highway Administration (SHA) and Federal Highway Administration (FHWA) requirements. However, all project phases will likely be eligible for a Categorical Exclusion (CE2) under 23 CFR 771.117, based on its limited scope and minimal environmental impacts.
- *Concurrence for utility relocations:* Utility relocations or reconfigurations are dependent on final design, but may include Washington Gas, BGE, and or WSSC.



Project Phasing and Construction Cost

The project segment is approximately two miles long and can be divided into six separate phases of construction, based on differences in engineering needs or complexity or cost:

1. Phase 1: Shared use path between Sarvis Ave and River Road.
 - a. The precise alignment of this path from Sarvis to River Road is still to be determined; options include the entire west side of Kenilworth Ave from Sarvis Ave to River Road; alternatively, the shared use path can traverse through M-NCPPC-owned property using either existing drive aisles or new paths or potentially a combination of both.
2. Phase 2: On-road bike lane and signing and marking along Sarvis Ave, 60th Ave, and Norman Ave.
3. Phase 3: Shared use path along the eastern and southern perimeter of William Wirt Middle School, including the north side of Tuckerman Street.
4. Phase 4: Boardwalk along 64th Ave paper street.
5. Phase 5: Shared use path along existing block of 64th Ave and Riverdale Road east to Auburn Ave.
6. Phase 6: Shared use path from Auburn Ave to Wildercroft neighborhood park

Construction cost estimates were developed for each of these phases, under the assumption that the entire 2-mile segment will not be funded for construction all at once. The following table highlights the permitting needs and estimated construction and design costs for each phase. The construction costs are estimated based on the recommended planning-level designs. Cost development spreadsheets² are provided in **Appendix C**.

² Bikeways Project Cost Estimator: a planning level cost estimating tool, developed by the Maryland Department of Transportation and the Baltimore Regional Transportation Board's Bicycle and Pedestrian Advisory Group.



Table 1: Estimated Construction costs, engineering services needed during design, and expected permits for each segment phase

Segment Phase		Construction and Design Cost Estimate	Engineering Services	Expected Permitting Needs
1	Shared use path between Sarvis Ave and River Road (assumes path through M-NCPPC property)	\$ 550,000	Utility Designation; Boundary Survey; Topographic Survey; Stormwater Analysis	Grading permit; drainage permit; stormwater approval; (NEPA if federally funded)
2	On-road bike lane and signing and marking along Sarvis Ave, 60th Ave, and Norman Ave	\$ 100,000	None	None
3	Shared use path along the eastern and southern perimeter of William Wirt Middle School, including the north side of Tuckerman Street.	\$ 900,000	Utility Designation; Boundary Survey; Topographic Survey; Stormwater Analysis; soil borings; lighting design; landscaping design	Grading permit; drainage permit; stormwater approval; (NEPA if federally funded)
4	Boardwalk along 64th Ave Paper Street	\$ 5,700,000	Utility Designation; Boundary Survey; Topographic Survey; Stormwater Analysis; Structures Analysis; soil borings; lighting design	Grading permit; drainage permit; stormwater approval; Flood Plain Approval; (NEPA if federally funded)
5	Shared use path along existing block of 64th Ave and Riverdale Road east to Auburn Ave	\$ 1,600,000	Utility Designation; Boundary Survey; Topographic Survey; Stormwater Analysis	Grading permit; drainage permit; stormwater approval; (NEPA if federally funded)
6, Option 1	Shared use path from Auburn Ave to Wildercroft neighborhood park	\$ 1,600,000	Utility Designation; Boundary Survey; Topographic Survey; Stormwater Analysis; soil borings; lighting design; landscaping design	Grading permit; drainage permit; stormwater approval; Flood Plain Approval; (NEPA if federally funded)
6, Option 2	Shared use path from Auburn Ave to Wildercroft neighborhood park	\$ 2,800,000	Utility Designation; Boundary Survey; Topographic Survey; Stormwater Analysis; Structures Analysis; soil borings; lighting design; landscaping design	Grading permit; drainage permit; stormwater approval; Flood Plain Approval; (NEPA if federally funded)
Total Study Segment cost (with Option 1)		\$ 10,450,000		
Total Study Segment cost (with Option 2)		\$ 11,650,000		

Note: Phase 1 and Phases 3-6 could also potentially need utility relocation or tree save plans

Funding Sources

There are multiple grant opportunities for various design phases or for construction.

- TAP (Transportation Alternatives Program)
 - TAP is a reimbursable federal-aid funding program (80% reimbursable with 20% required as match). Pedestrian and bike related projects such as trails and



boardwalks are eligible projects. Funding is eligible for a feasibility study, design or construction. Each state receives federal funds designated for each Fiscal Year. TAP funds are allocated between the major local Metropolitan Planning Organizations with the remaining are State-Flex funds that can be obligated to any area of the State. All construction projects must comply with state and federal regulations such as the Americans with Disabilities Act (ADA) and National Environmental Policy Act (NEPA). TAP applications are typically open during April, with notice of award in the Fall of the same year.

- RTP (Recreational Trails Program)
 - RTP provides Federal funds to States to develop and maintain land and water-based recreational trails and trail-related facilities for motorized and non-motorized recreational trail uses, which can be hard-surface trails. MDOT manages about one million dollars per year in RTP funds. RTP may reimburse up to 80% of the project's total eligible costs back to the jurisdiction. Eligible Project Types include maintenance and construction of recreational trails, bridges, and boardwalks; Acquisition of easements and property; and trail signage. RTP projects must conform to ADA and NEPA requirements, among other federal requirements, such as the Clean Water Act and the Endangered Species Act. RTP applications are typically open during April, with notice of award in the Fall of the same year.
- MDOT's Kim Lamphier Bikeways Network Program (Bikeways)
 - The Bikeways grant funds the design and building of bicycle routes across Maryland, including projects that fill gaps in the state's bicycle network and completes connections to work, school, shopping and transit. It provide up to \$400K for up to 65% design, including survey. Additionally, bikeways grants can serve as the local match to certain federal grants, including TAP. Bikeways projects must adhere to SHA's Bicycle Policy and Design Guidelines. Bikeways applications are typically open during the April through May timeframe, with notice of award in the Fall of the same year.
- Metropolitan Washington Council of Governments (MWCOC) Transportation Land Use Connections (TLC) Program
 - The TLC Program provides short-term (6 to 9 month) consultant services to local jurisdictions (MWCOC members) for small planning projects that promote mixed-use, walkable communities. Funding for consultant assistance is up to \$80,000 for planning projects and \$100,000 for design or preliminary engineering service (up to 30% design level). There are no matching funds required by the local jurisdiction. MWCOC opens the application process for TLC technical assistance grants in January/February of every year, with the award notices typically in May, and with technical consultants beginning work in September. Applications are open to MWCOC jurisdictional members.
- Metropolitan Washington Council of Governments (MWCOC) Transit withing Reach (TWR) Program
 - The TWR Program funds design and preliminary engineering projects (up to 30% design level) to help improve bike and walk connections to existing high-capacity transit stations or stations that will be open to riders by 2030. Example projects



include sidewalks, trails, shared-use paths providing access to transit stops. TWR funds can be up to \$100,000 for consulting design services. Consultant services are typically a one-year timeframe. Eligible projects have already had some local planning process undertaken. There are no matching funds required by the local jurisdiction. MWCOG opens the application process for TWR technical assistance in January/February, with the award notices typically in May, and with technical consultants beginning work in September. TWR grants are awarded every two years. Applications are open to MWCOG jurisdictional members.

Recommendations and Next Steps

Advancing the conceptual designs into preliminary design and then into final design and construction documents is best accomplished by breaking the study segment into the 6 phases discussed previously, and then obtaining funding for each separately, with the understanding that both design and construction costs will vary widely.

- Phase 1, Shared use path from River Road to Sarvis Ave:
 - Two path alignments have been identified – one that ties directly into the future River Road bike lanes project at the intersection of Kenilworth at River and another alignment that traverses through existing M-NCCPC property. The former alignment has difficulties with existing power poles and short building setbacks at 6504 and 6510 Kenilworth Ave. Both obstacles make installing a 10-foot wide path and any accompanying SWM facility difficult and expensive to construct. The M-NCCPC property has vast level green space that could serve as non-rooftop disconnect to accommodate SWM. Alternatively, the egress driveway is 26 feet, of which 10 to 12 feet could be restriped as a separated bike path, limiting the construction cost significantly. The option to utilize M-NCCPC property at 6600 Kenilworth Ave for the Phase 1 alignment is recommended – either for newly constructed paths next to green space; repurposing of wide egress drive aisles, or some combination of both.
 - A boundary survey is recommended for 6700 Kenilworth Ave to determine how much, if any, private right of way is needed to expand the existing unbuffered sidewalk into a buffered 10-foot wide side path.
- Phase 2, Sarvis Ave bike lane and Norman Ave / 60th Ave shared street:
 - Three options were for bike lanes on Sarvis Ave. The two-way protected bike lanes on the south side of Sarvis Ave are the recommended option, as they allow continuous movement from the crosswalk at Kenilworth to 60th Ave without having to cross Sarvis Ave. This option also allows for a wide buffer from vehicle traffic when compared against curbside bike lanes on the north and south sides of Sarvis Ave. This recommended option removes free curbside parking along Sarvis, however there are two large surface lots that serve the adjacent properties; and current curbside parking utilization may simply be a matter of convenience rather than necessity. A mid-day parking utilization study can confirm the necessity for curbside parking.



- Pedestrians that want to cross Kenilworth Ave at Sarvis have to press a pedestrian call button and wait for the WALK indication. Westbound cyclists stopped in the Sarvis Ave bike lane won't have that option. Accordingly, the recommended concept shows a standard bike detector in that lane to trigger the WALK indication. However, a simpler adjustment would be to alter the signal phasing for pedestrian recall – to eliminate the need to call for the WALK signal (which activates every signal cycle, coincident with the Sarvis Ave green light). Pedestrian recall is recommended over bike detection.
- Prior to installation of traffic calming along Norman Ave / 60th Ave, a speed study is recommended. A speed study will also confirm that both streets have very low vehicle volumes and are therefore suitable as a shared street bikeway.
- Phase 3: Shared use path along William Wirt MS perimeter and along Tuckerman Street:
 - William Wirt MS is currently under construction, with the old building being replaced with playing fields. Prior to its reconstruction, WWMS property had a path along the southwestern perimeter – which the recommended shared use path replaces. The proposed path is wider and will likely result in the need for handrails, due to the moderate lateral downhill slope between the proposed path and the future playing fields.
 - Given that the future playing fields at William Wirt MS have not been constructed yet, the County should coordinate with PGCPs on a plan revision to include the proposed side path along the perimeter and along Tuckerman Street.
 - Lighting is recommended along the portion of the proposed side path adjacent to woodlands.
- Phase 4: 64th Ave paper street boardwalk:
 - The boardwalk should be 14 feet wide and include handrails.
 - This paper street is a mix of level and rolling topography that is subject to stormwater runoff from adjacent properties. Accordingly, it is suitable for a raised above-grade boardwalk. However, there may be portions – particularly on the northern end (north of Sheridan St) that are level enough to can accommodate a shared use path. This can significantly reduce the cost of the proposed facility. Additionally, to address the long term maintenance costs of wooden boardwalks, alternative materials should be explored including modular lightweight concrete sections for all or part of the boardwalk.
 - There are several privately-owned structures located within the paper street – fences, parking lots, and signs – that can be relocated or removed as needed. While a topographic survey and utility designation is needed for design purposes for the entire paper street, a boundary survey will also be needed for select areas where private construction has intruded into the paper street *and* where a design cannot be accommodated without removing such intrusions.
 - The boardwalk is shown as having direct connections to Tuckerman Street, Sheridan Street and Roanoke Ave. Additionally, there are proposed connections to Parkside Gardens Apartments at two locations, on the east side – opposite of Tuckerman Street and at the complex driveway, where the paper street become an existing street. For convenience, a third access point from Parkview Gardens is



- recommended at a location 500 feet north of the complex driveway, where an existing private parking lot overlaps with the paper street.
- There are electric utility poles traversing the length of the paper street; these poles are recommended to include downward facing luminaires to provide lighting for the boardwalk or shared use path.
 - The existing portion of 64th Ave that provides access to Parkview Gardens and to River Park condominiums has a sidewalk along the east side. This sidewalk has ample buffer in the public right of way to be widened as a 10-foot wide buffered shared use facility from the paper street to the intersection of 64th Ave at Riverdale Road.
 - At the intersection of 64th Ave at Riverdale Road, a worn goat path leading from the bus stop, sidewalk, along with several above ground constraints – signal poles, utility poles with a guy wire, trees, a pedestrian pole, and an electric meter. This intersection is the location of both a school bus stop and a WMATA bus stop, resulting in high pedestrian activity. The recommended proposed concept for this intersection retains a 10-wide side path but also formalizes the existing goat path to provide a direct connection to the transit stop for bus riders. This additional pedestrian space removes some of the demand that is expected along the path at this intersection. The proposed sidewalk should be constructed above ground level so as not to impact existing tree roots adjacent to the goat path.
 - The Housing Authority of Prince George's County owns undeveloped wooded land adjacent to the 64th Ave paper street. It is recommended that this land be transferred to the ownership of M-NCPPC to allow for recurring maintenance.
- Phase 5: Shared use path along Riverdale Road from 64th Ave to Auburn Ave:
 - This portion of the study segment has existing sidewalk, unbuffered from Riverdale Road vehicle traffic. The proposed concept recommends replacing this sidewalk with a ten-foot wide shared use path and a 5-foot buffer (to be used for street trees, roadway signage bus stop landing areas, etc.)
 - The recommended 5-foot buffer is shown as eliminated only for the sections of the path under the Baltimore-Washington parkway dual overpasses. A 10-foot wide level sidewalk is currently constructed at these locations and is proposed to remain.
 - The terrain along this phase is mostly level and does not require additional structural elements – like retaining walls – except for a 600-foot segment between 67th Court and Fernwood Terrace. This segment (the 6700 block of Riverdale Road) abuts property owned by the County and is expected to ultimately be redeveloped, given its location across the street from the Beacon Heights Purple Line light rail station. Redevelopment of this property should coincide with frontage improvements that align with the proposed typical cross section of the remainder of this phase. A potential option to address the steep terrain is to employ a cantilevered boardwalk to eliminate the need for retaining structures. Another option to reduce costs associated with retaining structures is to narrow the typical section path down to 8 feet and reduce/eliminate the buffer for this 600-foot segment. Both options should be explored to reduce construction costs associated with a retaining wall, if the cantilevered path option is not chosen.



- Topographic survey will be required for this segment as part of the design phase, and a boundary survey is also expected. However, coordination with MDOT SHA is required given that Riverdale Road is state-owned and several parcels abutting Riverdale Road impacted are State-owned.
 - Southbound right turns are recommended to be prohibited on red at the intersection of the southbound MD-295 off ramp with Riverdale Road. A traffic study is recommended to evaluate the number of vehicles that currently make a right turn on red and the impact of preventing these vehicles on upstream queuing along the southbound MD-295 ramp.
- Phase 6 – Option 1: Shared use path from the intersection of Auburn Ave at Riverdale Rd to Wildercroft Park, via Brier's Mill Run:
 - The concept for this phase is a buffered shared use path along Brier's Mill Run and along the east side of Auburn Ave, with the exception of a short segment over Brier's Mill Run, where on-road protected two-way bike lanes are recommended.
 - If advanced, a small concrete chicane is recommended that protects the protected two-way bike lanes from the northbound bus stop along Auburn Ave.
 - Most of the property along the north side of Brier's Mill Run is publicly owned, with the exception of two properties. If this option is chosen to be advanced, then negotiations with property owners should be the first step. A boundary survey and development of plats will be required for transfer of property or for perpetual easements.
- Phase 6 – Option 2: Shared use path from the intersection of Auburn Ave at Riverdale Rd to Wildercroft Park via Chestnut St paper street:
 - The concept for this phase is a buffered shared use path along Riverdale Road, east of Auburn Ave, until it reaches Chestnut Street paper street, located between the Lily Garden apartments and the Chestnut Ridge apartments. This option then proceeds along the Chestnut Street paper street, then crosses the Brier's Mill Run with a proposed new pedestrian bridge, before continuing east along the north side Brier's Mill Run, to Wildercroft Park.
 - While this option provides a more direct route between Wildercroft Park and Riverdale Road, when compared to Auburn Ave, the development of this option requires both retaining walls along Chestnut Street paper street and a new pedestrian bridge over Brier's Mill Run. These elements increase the design and construction cost significantly.
 - The Lily Garden apartments also appear to have constructed parking facilities that encroach into the paper street; this may complicate the design of the retaining wall and the ability to address stormwater run-off.
- The advantage of Phase 6 Option 1 over Option 2 is estimated cost, given that no bridge over Brier's Mill Run is needed and no retaining walls are needed along Chestnut Street to support the shared use path. Option 1 is also likely to have shorter design timeframe and less design cost when compared to Option 2. The downside to Option 1 is that it is a less-intuitive alignment when compared to Chestnut St paper street which provides more direct linear connection to Riverdale Road. Additionally, some private property strip takes are required for Option 2.



- Both options provide direct access to the proposed bike facility from the Lily Garden Apartments and from the Auburn Manor apartments to the south, but only Option 2 provides direct access to the facility from the Chestnut Ridge apartments.
- Option 1 for phase 6 is recommended for advancing into preliminary design, and negotiations with private property owners should be the first step in this process. The designer of the facility will develop conceptual stormwater plans during preliminary design in order to determine how much property, beyond the typical shared use path width, is required. Additionally, the shared use path should be designed to accommodate motor vehicle access, needed for channel maintenance of Brier's Mill Run.
- General recommendations for all phases of the study segment include:
 - Replacing all crosswalks across the shared use path with continental style crosswalks is recommended. Additionally, a WALK pedestrian signal is recommended where the shared use path crosses a driveway, street, or on/off-ramp at a signalized intersection.
 - Evaluate all driveway and intersection crossings of the shared use path for curb radius reductions in order to promote slower vehicle turn movements across the shared use path.
 - Each phase project segment has differing design timeframes and construction costs/timeframes. Phases that currently have no sidewalk or alternative means for progression should be advanced first. Phase 3 and phase 6 will require the least amount of design costs and will require the least amount of time to construct. Additionally, some of the less expensive phases (phase 1 and 2) can begin preliminary design. Funding requests should be initiated for the most expensive phases – 4 and 5 and 6. These will take the longest to design and construct and are good candidate for federal funding requests – TAP and RTP.
 - Landscaping plans should be a part of final design and will be needed where Tree Save Plans are required and where street tree plans are designed to provide shade along the facility. The shared use path and boardwalk sections should meander, as needed, to avoid tree removal.
 - Exploration of potential locations for trailheads is recommended, though not critical for the application of the study segment as a commuter and recreational facility.
 - Lighting is recommended in all areas that are not served by ambient streetlights.
 - A wayfinding signage plan is recommended for Final Design. The NPGEWB should have a distinct logo - similar to the Trolley Trail and the Metropolitan Branch Trail.
 - The stormwater mitigation chosen will be a deciding factor in the design of each phase of the facility and is often a critical design factor when retrofitting public space with new shared use paths, as available space for such Environmental Site Design (ESD) facilities is often constrained. The most common space-saving designs include linear grass swales, linear bioswale, non-rooftop disconnect, pervious pavement, and water quality inlets (e.g., Filterra™). These treatments should be pursued during preliminary design.
 - While this report covers a two-mile segment with an eastern terminus at Wildercroft Park, it is recommended that the County apply for TLC and/or TWR grants to begin



planning for the final eastern segment of the overall project corridor – from Wildercroft Park to the WB&A trail, with an emphasis on providing a safe connection under or over I-495.

- The study segment covers ownership across five public agencies – DPW&T, Maryland SHA; M-NCPPC property, County Board of Education property; and County Housing Authority property. Coordination between these entities in the design and construction phases will be required. Additionally, an understanding of ownership and maintenance responsibilities should be defined prior to construction.