Congressional Lane Complete Streets Study

Final Report

June 2025

Prepared For

National Capital Region
Transportation Planning Board

CITY OF ROCKVILLE
EST. 1860

Funded by the Transportation Land-Use Connections (TLC) program of the National Capital Region Transportation Planning Board at the Metropolitan Washington Council of Governments. The TLC program supports local jurisdictions in promoting mixed-use, walkable communities and a variety of transportation alternatives.

Table of Contents

INTRODUCTION

MWCOG's Transportation Land Use Connections (TLC) technical assistance program (2024-2025 grant year cycle) funded the City of Rockville's project to evaluate the feasibility of constructing complete streets facilities along Congressional Lane.

This study presents a range of options for bicycle facilities and pedestrian improvements along Congressional Lane between Rockville Pike (MD 355) and Rollins Avenue. Following the 2017 City of Rockville Bikeway Master Plan's vison of providing a "safe, practical and efficient bikeway network", and the 2023 Pedestrian Master Plan's goal to make Rockville the most walkable city in Maryland, the City of Rockville is advancing improved multimodal facilities along Congressional Lane.

In the 2017 Plan, Congressional Lane is shown as a shared route, although bike signage and markings along the route are limited today. However, in recent years it has become best practice to provide the most protected facilities possible for Vulnerable Road Users (VRU's) which includes pedestrians and cyclists. An existing conditions assessment was performed with a specific focus on the traffic and land-use variables that would be affected by the installation of protected bicycle facilities. Existing information including physical site conditions and roadway configuration, adjacent land use context, user type and patterns of use, traffic analysis for level of services, level of stress, and crash history is documented in the *Congressional Lane Complete Streets Study Existing Condition Report*.

A total of three concept plans were developed depicting options for roadway configurations that integrate traffic calming measures, adjust curbs and crosswalks to increase pedestrian safety, introduce dedicated bicycle facilities, and adjust on-street parking to implement a complete streets concept.

Project Needs and Goals

The City of Rockville seeks to explore options to accommodate all corridor users and improve safety. This feasibility study explores potential options for dedicated bicycle facilities buffered or separated from vehicle traffic and analyzes the impacts, benefits, and constructability of each option. All options maintain the existing curb and overall roadway widths. The study focuses on bicycle facilities as a conduit for better safety outcomes for all, as improved bicycle facilities also provide other benefits, including a wider buffer for pedestrians, increased visibility, and traffic calming.

Goals

Primary goals for the proposed projects include:

- Improve safety for all roadway users, especially VRUs such as pedestrians and cyclists.
- Provide separated facilities for pedestrians and cyclists.
- Increase level of comfort accommodating a wider spectrum of cyclists.
- Reduce vehicle speeds.
- Reduce vehicle miles traveled for short trips.
- Provide proof of concept design (e.g., no fatal flaws, minimized traffic impacts, constructable).

PROJECT INFLUENCES AND PRIOR PLANNING EFFORTS

The City of Rockville's 2017 Bikeway Master Plan and 2023 Pedestrian Master Plan identify Congressional Lane as an important connection in the overall bicycle and pedestrian networks. Providing convenient multimodal access to- and between- residential, recreational, and commercial land uses is important to facilitate safe travel for vulnerable roadway users, support local businesses, and provide opportunities for more sustainable transportation.

Turning movement count data was collected by the City of Rockville at the intersections of Congressional Lane at E. Jefferson Street and Congressional Lane at Rollins Avenue in October of 2024. Turning movement count data for the intersection of MD 355 at Congressional Lane was sourced from MCDOT signal timing optimization efforts and collected in September of 2022.

Parking utilization surveys were conducted by the project consultant in November 2024 identifying parking occupied and distribution through the corridor. The surveys were conducted at three peak hour intervals: weekday mid-day, weekday evening, weekend mid-day.

Additional City directives that drove the conceptual designs include:

- Maintain curb-to-curb dimensions.
- Minimize new impervious surfaces and existing utility relocations.
- Curbside *unprotected* bicycle lanes are undesirable.
- Separate pedestrian and bicycle facilities are desirable; mixing of pedestrians and cyclists on existing sidewalks occurs, primarily by vulnerable roadway users, along the corridor.

Stakeholders

While the City of Rockville is the project originator, other government representatives and organizations that are stakeholders include:

- City of Rockville Department of Public Works
- Rockville Bicycle Advisory Committee (RBAC) / Rockville Pedestrian Advocacy Committee (RPAC)
- Montgomery County Department of Transportation
- Maryland Department of Transportation State Highway Administration
- Ride On Bus Service – Montgomery County
- Metrobus Bus Service – Washington Metropolitan Area Transit Authority (WMATA)
- Capitol Bikeshare

CONCEPT DEVELOPMENT

Opportunities and Constraints

Congressional Lane is a two-lane local roadway with two distinct land use patterns along the corridor. Between Rockville Pike (MD 355) and E. Jefferson Street the corridor is mixed-use with a combination of strip retail, multi-story commercial and a multi-story apartment building; parking for these uses includes surface lots, parking garages, and on-street parking. Between E. Jefferson Street and Rollins Street the corridor is medium-density residential with the Rollins Park Apartment and Congressional Towers complexes located on both sides of the roadway and Montrose Park which includes athletic fields, tennis courts, a playground, and a community center providing day care services; parking is provided in private

surface lots for residents and on-street parking accommodates park users. Furthermore, located adjacent and west of Montrose Park is Rollins Congressional Club which is a community center and pool facility that serves both apartment communities. Considering these recreational amenities as a destination and their proximity within a quarter-mile walkshed for residents in the corridor is a reason to encourage pedestrian and bicycle traffic as an alternative to short vehicular trips. A map of the study area is shown below in Figure 1.

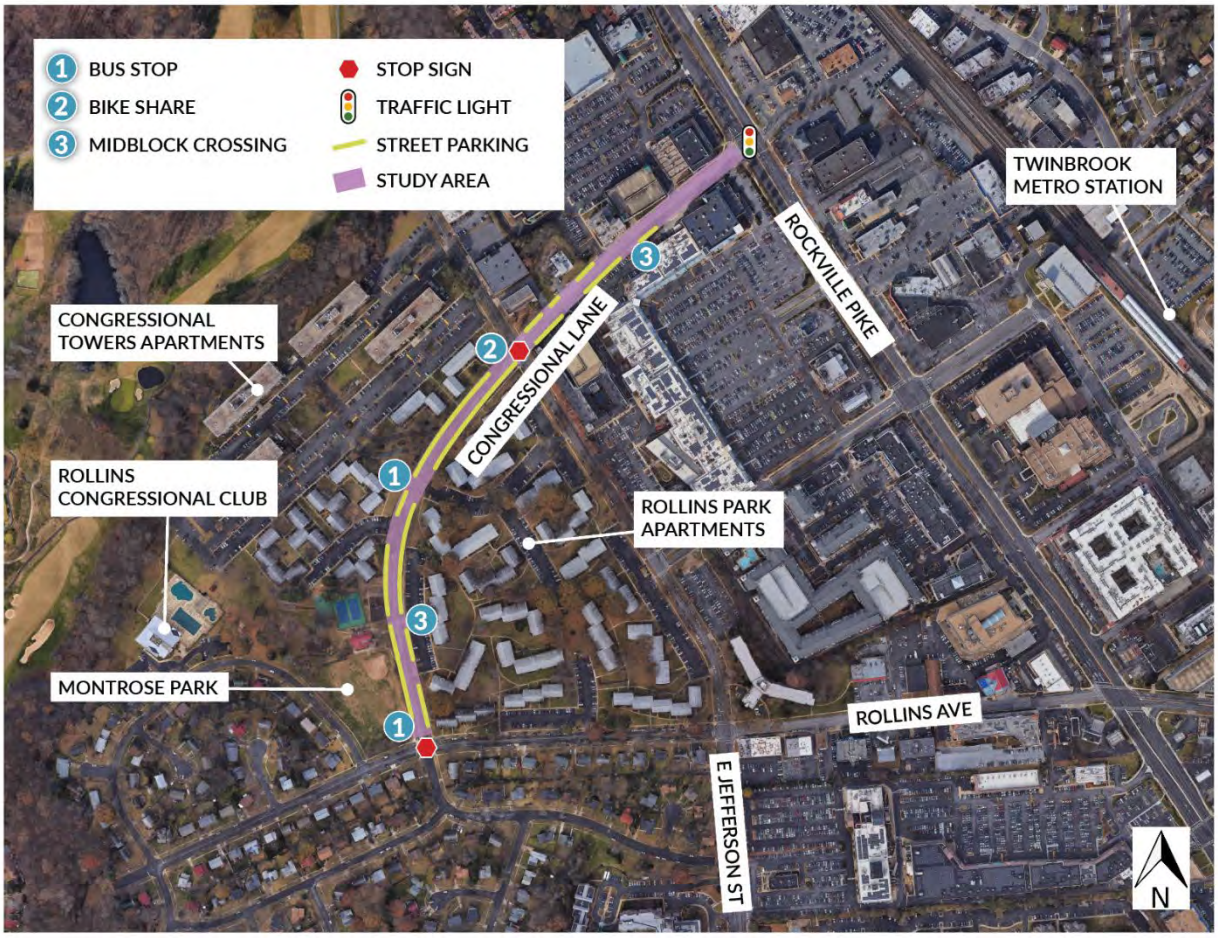

Figure 1 Map of the study area and surrounding context.

Parking surveys indicated moderate usage of on-street parking with a 34%-66% level of usage.

Congressional Lane is serviced by Metrobus and Ride On with two bus stops between E. Jefferson Street and Rollins Avenue (Figure 2). The site is largely within a half-mile radius to the Twinbrook Metro Station. Access to transit has potential to elevate pedestrian and cyclist use through the corridor.

The existing corridor provides sidewalks on both sides of the roadway for the entire length and marked crossings at all intersections (Figure 3).

Figure 2. Ride On bus stop at the intersection of Rollins Avenue and Congressional Lane (Credit: Floura Teeter).

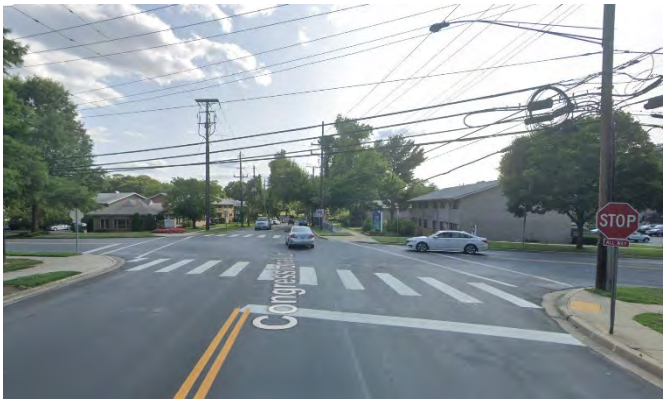

Figure 3. Intersection of E. Jefferson Street and Congressional Lane. (Credit: Street View image from Google Maps.)

Figure 4. Capitol Bikeshare station at the intersection of E. Jefferson Street and Congressional Lane. Both electric and classic bikes are available for rent. (Credit: Floura Teeter).

A Capitol Bikeshare station is located at the E. Jefferson Street intersection at the center point of the corridor; both electric bikes and classic bikes are available for rent (Figure 4).

However, in the current condition, the corridor does not provide a dedicated bicycle facility. Cyclists are allowed to ride in the roadway. Although not a major thoroughfare, moderate traffic volumes combined with wide undefined travel/parking lanes result in discomfort for cyclists leaving multi modal facility improvements to be desired.

Challenges identified during initial assessments of the existing condition include:

- Right-of-way is limited and existing overhead utility lines are located throughout the corridor leaving no space to accommodate a dedicated bicycle facility or shared use path behind the curb. Adjacent properties are developed with a built footprint that extends to the right-of-way in most cases. It is not feasible to acquire easements or additional right-of-way.

- Between E. Jefferson Street and Rollins Avenue, travel lanes are narrow (11 feet) with just one lane in each direction and curbside on-street parking is located on both sides of the roadway. This configuration combined with the limited curb-to-curb width will require a trade-off to remove on-street parking to accommodate a dedicated bicycle facility.

Figure 5 Midblock crossing near Montrose Park. (Credit: Street View image from Google Maps.)

Figure 6 Midblock crossing near E. Jefferson Street. (Credit: Street View image from Google Maps.)

Figure 7 Outdoor seating area at Mykonos Grill encroaches into the ADA curb ramp landing area. (Credit: Street View image from Google Maps.)

- Two mid-block crossings are located in the corridor and present a conflict between vehicles, pedestrians and cyclists (Figure 5 and Figure 6).

- Between MD 355 and E. Jefferson Street, on the north side of the street, there is a signed loading area adjacent to Mykonos Grill; on the south side of the street, there is a curb opening approximately 150-feet in length for loading access to the Congressional Plaza Shopping Center.

Design Process & Study Methodology

Developing alternative concepts began with an extensive field review and CAD base mapping effort. County-level GIS data was supplemented with in-the-field data collection. The field survey allowed for verification of existing mapping libraries and to note sight distance or ADA compliance issues (Figure 7). It also allowed for determining potential construction impacts that can be significant cost drivers – such as utility pole relocation. The base mapping included all existing sidewalk, curb and gutter, utility poles, driveways, and large trees. To this, all public right-of-way information and lot lines were added, in addition to pavement markings, street signs and dimensions. Concept designs were developed using the following design standards and guidelines:

- AASHTO
- NACTO
- PROWAG
- MUTCD
- ADAAG
- MDOT SHA
- Montgomery County DOT Standards

Existing traffic and safety conditions were evaluated by reviewing crash history from 2019-2023. Of note, five pedestrian crashes occurred in the section of the corridor between MD 355 and E. Jefferson Street.

Intersection capacity analyses were performed using peak hour traffic counts and turning movement data collected by the City of Rockville in 2024. All study intersections operate at a LOS C or better. The overall intersection results generally indicate acceptable operations; however, the more detailed movement-level Synchro HCM and SimTraffic queueing results indicate that the following movements within the study area are experiencing LOS E or F, or have 95th percentile queue lengths that exceed the available turn bay storage length distance:

- The eastbound and westbound approaches of Congressional Lane at MD 355 operate at a LOS E in the AM and PM peak hours due to signal delay from the long cycle length and not capacity constraints.
- The northbound left queue on Congressional Lane at MD 355 exceeds the available storage length in the PM peak hour consistent with field observations.

Refer to the *Congressional Lane Complete Streets Study Existing Condition Report* for additional information on analysis of existing traffic and safety conditions.

Field Observations:

Field observations were conducted in October 2024. The following observations were made:

MD 355 to E. Jefferson Street Observations:

- Roadway section ~46-feet width
- Wide roadway seems to encourage speeding in this section and is likely exacerbated by the downhill grade from MD 355.
- Sidewalk at back of curb (south side), there are portions of sidewalk with some separation (north side)
- Mid-block crossing with pedestrian beacons (RRFB's) and Hi-Viz ladder-style crosswalk, but no refuge or other traffic calming
- Standard at-grade inlets that are equipped with bicycle-safe inlet grates
- Lightly used parking on both sides of the street
- Has steep grade from MD 355 to the intersection with E. Jefferson Street
- Vehicle scale streetlighting
- Bus stops located on MD 355, far side serving southbound travel, with the near side serving northbound travel. Both Ride On and Metrobus users were seen utilizing the stops during observation. Use was moderate but consistent.

E. Jefferson Street to Rollins Avenue Observations:

- Roadway section ~35-feet width
- Well-separated sidewalk from roadway, at least 10-feet in most cases
- Mid-block crossing at Montrose Park, however it slightly obscured when approaching from E. Jefferson Street, grade and vegetation obstructing signage make it difficult to see in advance
- SHA-style Type NR Open Throat inlets. While there are no grates, this type of inlet is equipped with a gutter that reverse slopes into the inlet throat steeply, potentially creating an obstruction in a narrow bikeway
- Heavily utilized parking on both sides of the street

- Capital Bikeshare Station located at corner of Congressional Lane/E. Jefferson Street
- Two bus stops with shelters along the corridors, one at Montrose Park, the other halfway between E. Jefferson Streer and Rollins Avenue
- Generally, a gentle grade from E. Jefferson Street toward Rollins Avenue, but a slight rise near Montrose Park makes an existing mid-block crossing difficult to see
- Vehicle scale streetlighting

Recommended Concepts

This section of the report describes each of the three potential concept alternatives for consideration and provides an analysis of impacts and overall construction feasibility. Impact analysis generally relates to safety for all roadway users, traffic operations, cost, permitting needs, as well as any parking gains/loss.

A Concept Plan for each potential concept alternative is presented in Appendix E. Generally, there are three bicycle facility types presented. For concepts where the same bicycle facility type is shown across two concepts, variations or options for individual components are presented. For example, Concept 1 and Concept 2 both propose buffered bicycle lanes for the corridor section between E. Jefferson Street and MD 355; the variation is in how the bicycle buffer is implemented. In Concept 1 a painted buffer with flex post delineators is proposed; in Concept 2 a painted buffer with precast concrete curb is proposed. This example and other similar design details are considerations that are interchangeable across concept alternatives with implications for visual aesthetics, safety, maintenance, and construction cost. When City Staff select a preferred concept alternative additional consideration for design detail options that address traffic calming and increased bicycle and pedestrian safety are recommended. Furthermore, sidewalk and curb ramp conditions that are not up to date with the latest Public Right-of-Way Access Guidelines (PROWAG) standards should be replaced with this project. Generally, about 50% of the curb ramps along the corridor are not compliant and repairs are needed to the sidewalk to resolve broken or upheaval caused by adjacent trees; installation of root barrier to protect replaced sidewalk adjacent to existing trees is recommended.

The feasibility study is for Congressional Lane between MD 355 Rockville Pike and Rollins Avenue. Three concept alternatives were developed in coordination with City Staff and presented to stakeholders for input:

Concept 1 – Buffered Bicycle Lanes:

Install buffered bicycle lanes from MD 355 to Rollins Avenue

Concept 2 – Shared Roadway and Bicycle Lanes:

Maintain the current lane and parking configuration with new sharrow pavement markings and installation of traffic calming features from E. Jefferson Street to Rollins Avenue; install protected bicycle lanes from MD 355 to E. Jefferson Street.

Concept 3 – Cycletrack:

Install a two-way cycletrack along the south side of Congressional Lane from MD 355 to Rollins Avenue.

Similarities across all three concept alternatives include:

- Maintain the existing curb to curb dimensions of the roadway.
- No temporary or permanent construction encroachment outside of the existing right-of-way.
- No impacts to underground or aboveground utilities.
- No tree removals are required.
- Maintain the existing sidewalks with improvements to curb ramps in accordance with ADA accessibility requirements and PROWAG standards at intersections and access roads.
- Proposed safety enhancements to both existing midblock crossings.
- Proposed bicycle facilities transition to a shared roadway (sharrows) at the approach to MD 355.
- In locations where bicycle facilities cross access roads, intersections, or transit stops, green skips are proposed in the bicycle facility to signal conflict areas.
- Parking signs will be replaced to convey where parking is allowed or not allowed.
- Bicycle Lane signage will be added to the corridor.

Perspective renderings depicting the proposed roadway configuration associated with each concept alternative were prepared to convey how the proposed changes integrate into the corridor context. The existing condition is shown below for comparison.

Existing Condition

Figure 8 Residential context, existing condition.

Figure 9 Commercial context, existing condition.

Concept Alternative 1 – Buffered Bicycle Lanes

Figure 10. Residential context, concept 1.

Figure 11. Commercial context, concept 1.

Concept Alternative 2 - Shared Roadway and Bicycle Lanes

Figure 12. Residential context, concept 2.

Figure 13. Commercial context, concept 2.

Concept Alternative 3 - Cycletrack

Figure 14. Residential context, concept 3.

Figure 15. Commercial context, concept 3.

Concept 1: Buffered Bicycle Lanes

Definition: A buffered bicycle lane is a dedicated lane for cyclists, typically located between the curb and the vehicular travel lane with a painted or physical barrier such as concrete curb or flex post delineators providing separation from the vehicle travel lane. Bicycle lanes flow in the same direction as the vehicle travel lane.

Figure 16. Example image of a buffered bike lane. (Credit: Frederick County)

Figure 17. Example image of a buffered bike lane with parking. (Credit: The WashCycle)

Benefits: Increases cyclist comfort and confidence on busy streets by creating separation from motor vehicles; increases predictability of cyclists and motorist positioning and interaction; increases buffer between motorists and pedestrians; minimizes or removes conflict of cyclists using sidewalk/pedestrian facility.

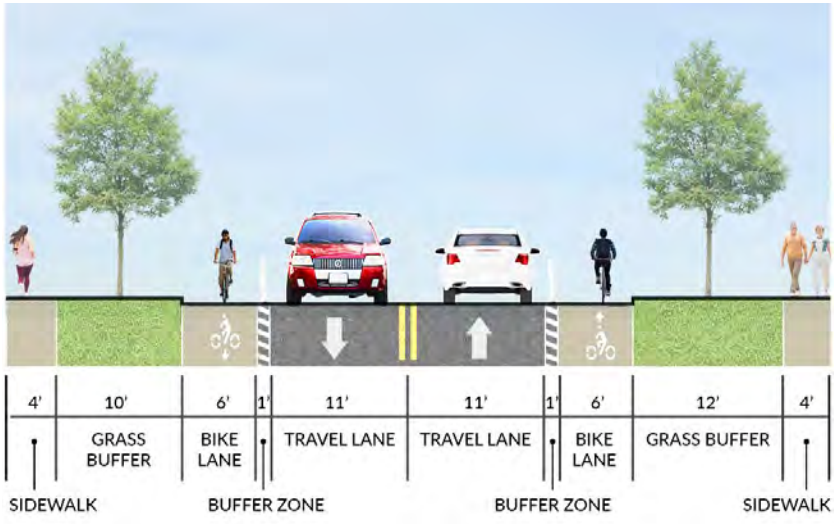

Figure 18. Section diagram of residential context, concept 1.

Concept 1 proposes to install buffered bicycle lanes from MD 355 to Rollins Avenue. Five-foot bicycle lanes will be installed at the curb on either side of the road section with a one-foot painted buffer and flex post delineators, spaced every 20-feet, as a physical buffer to 11-foot wide travel lanes. To accommodate the buffered bicycle lanes, all on-street parking is removed.

As shown in Figure 19, the buffered bicycle lanes will start at the Rollins Avenue and Congressional Lane intersection which is a four-way stop condition where cyclists will transition to a shared roadway facility in all directions. Moving east along Congressional

Lane, in locations where bus access is needed to serve passengers at transit stops and in locations where driveway access crosses the bicycle lanes, green pavement markings, or skips, are painted in the bicycle lanes.

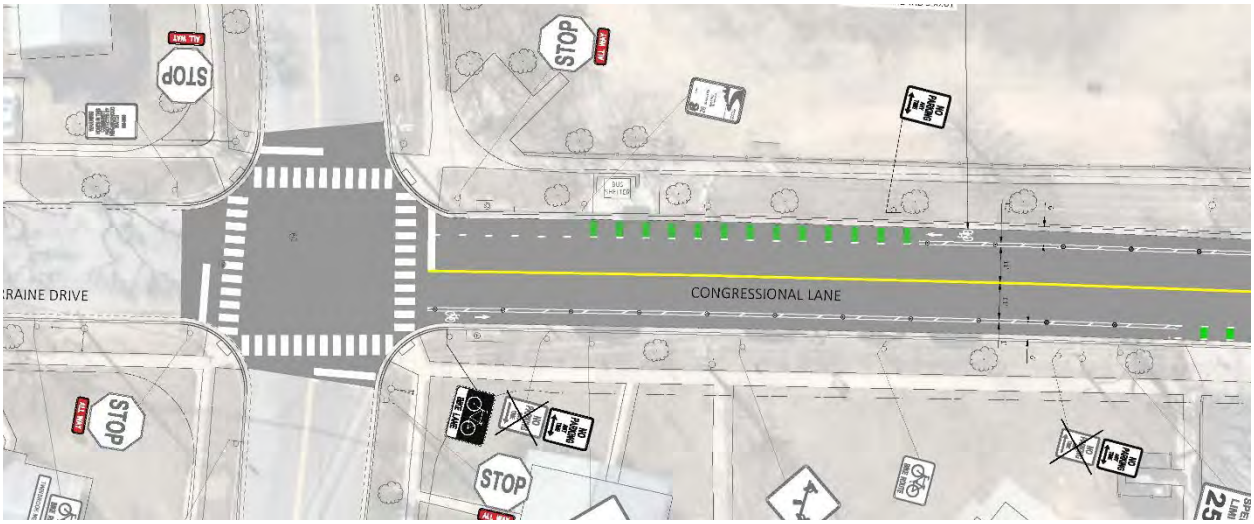

Figure 19. Buffered bicycle lanes start at the Rollins Avenue and Congressional Lane intersection (Concept 1, sheet 1).

The midblock crossing at Montrose Park will be improved as a raised crosswalk through the entire width of the roadway and bicycle lanes, painted as a ladder crosswalk, and replacement of curb ramps on both sides (Figure 20).

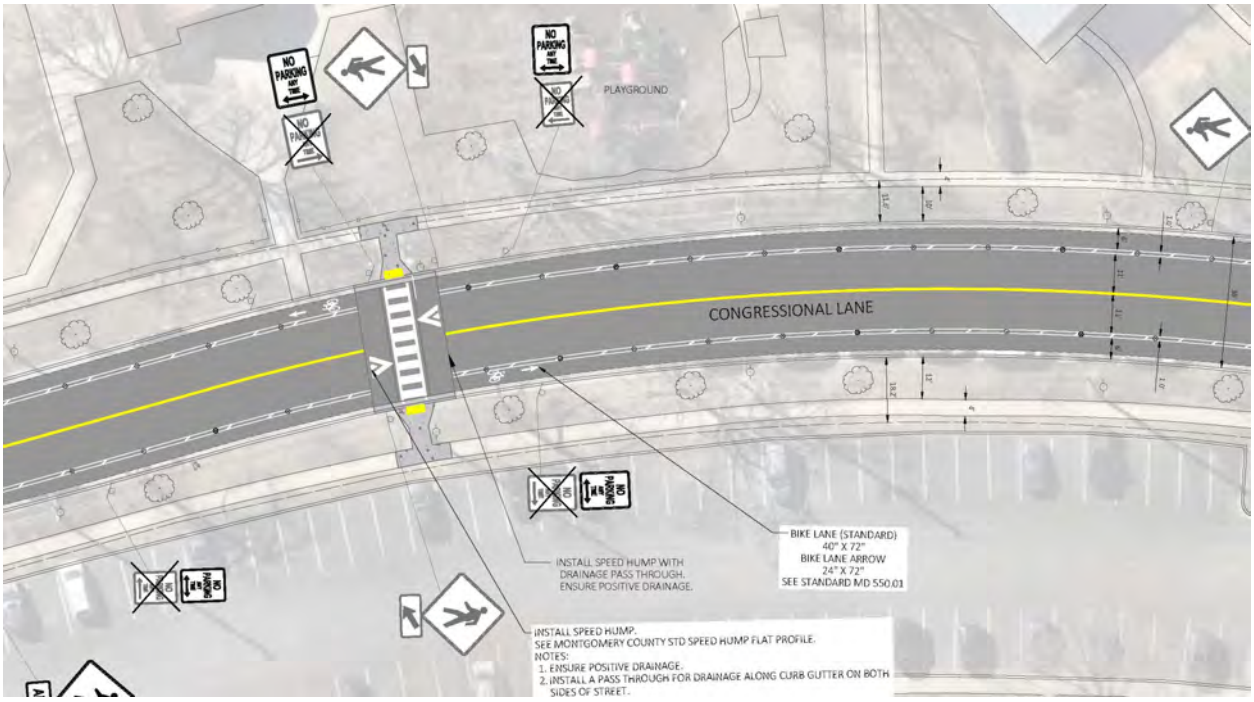

Figure 20. Improved midblock crossing at Montrose Park (Concept 1, sheet 2).

The intersection of E. Jefferson Street and Congressional Lane will be modified to relocate pedestrian crossings to align with replaced curb ramps on each corner and repainted as continental crosswalks. Bicycle lanes will continue through the intersection as painted green skips (Figure 21).

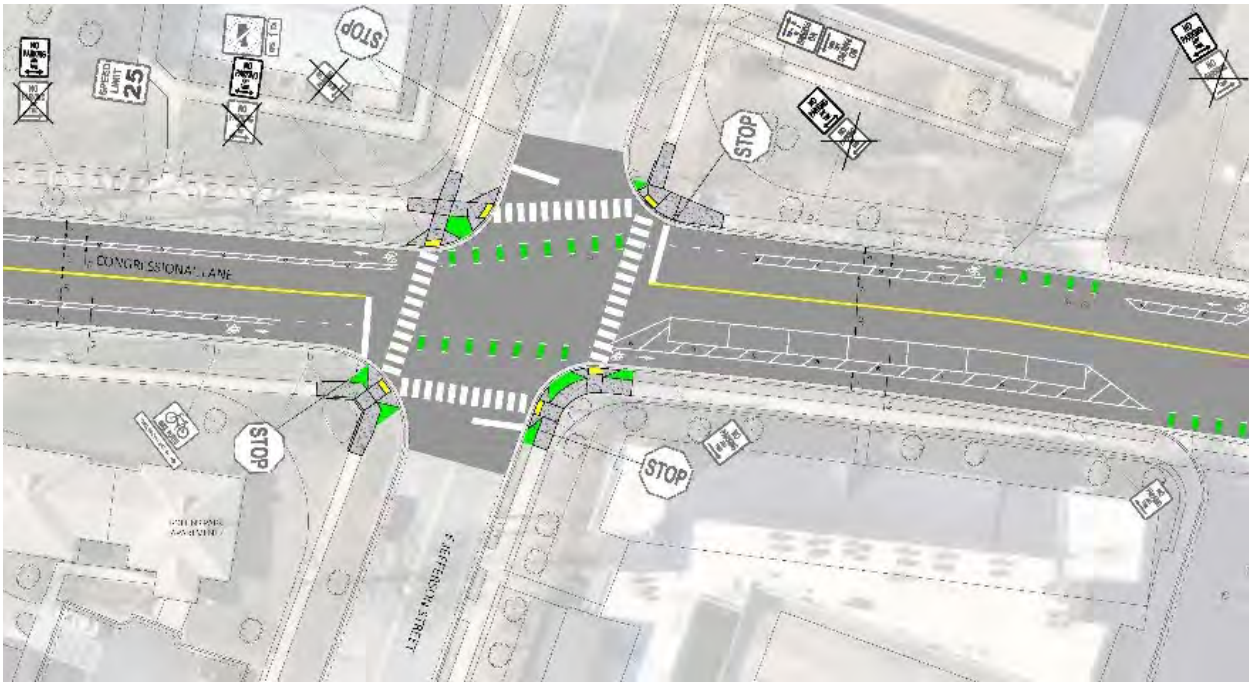

Figure 21. Modified E. Jefferson Street and Congressional Lane intersection (Concept 1, sheet 4).

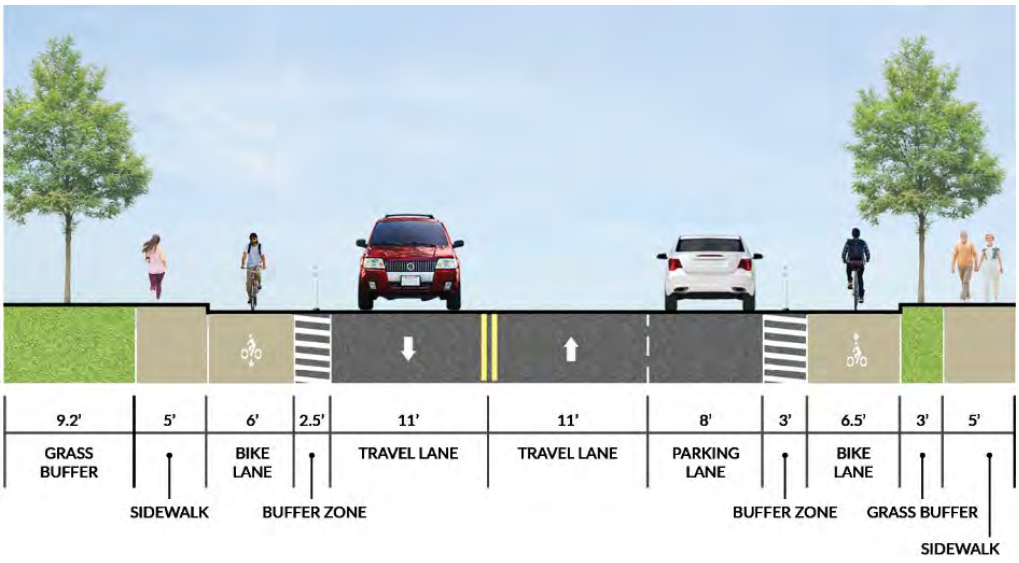

Figure 22. Section diagram of commercial context, concept 1.

East of E. Jefferson Street the existing curb-to-curb width is slightly wider resulting in an increase in the bicycle lane widths and buffers. The vocabulary of flex post delineators within the buffer and painted green skips at conflict zones is continued. On-street parking is accommodated on the south side of the

roadway along the frontage of the multi-story residential building and strip retail for a total of 14 parking spots, as shown in plan (Figure 21) and in the section diagram (Figure 22).
Traffic calming and pedestrian safety measures are integrated into a modification to the midblock crossing between E. Jefferson Street and MD 355. Travel lanes will be reduced in width to 11-foot lanes accommodating a new pedestrian refuge island between the travel lanes and curb ramp replacement on both sides (Figure 23). East of the midblock crossing bicycle lanes transition to shared road facility on both sides of the roadway with no changes to the lane configuration at MD 355 (Figure 24).

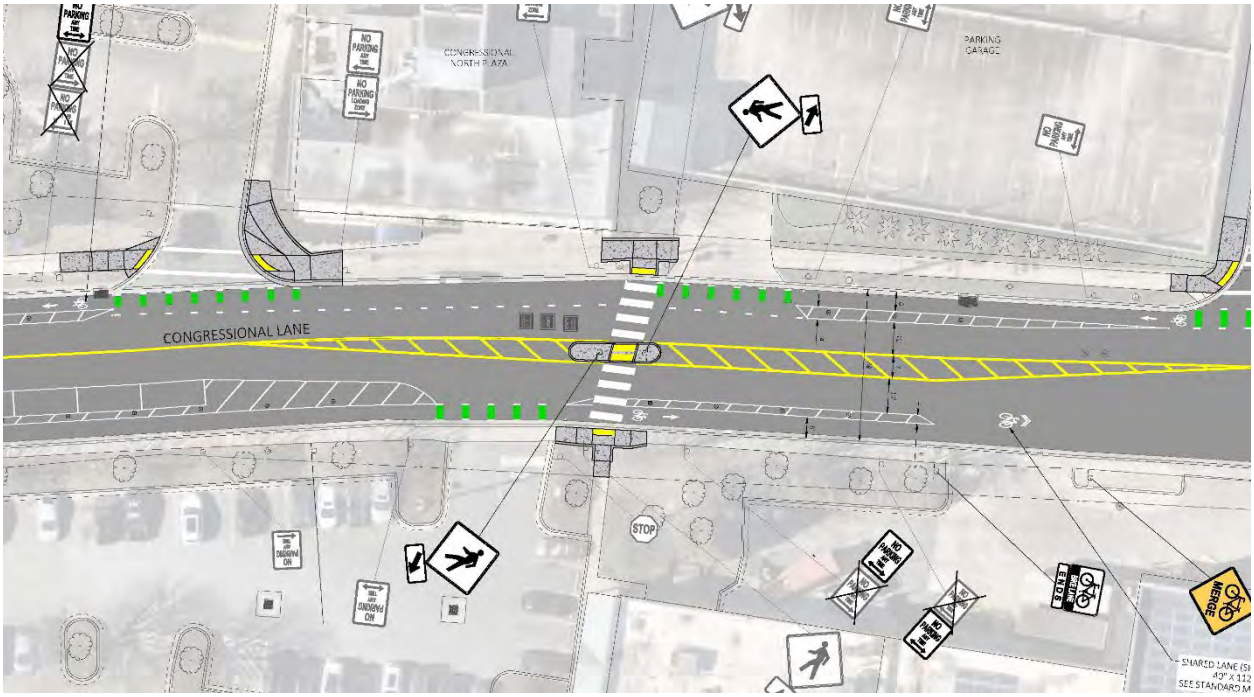

Figure 23. Travel lane width is reduced to accommodate a new pedestrian refuge island (Concept 1, sheet 5).

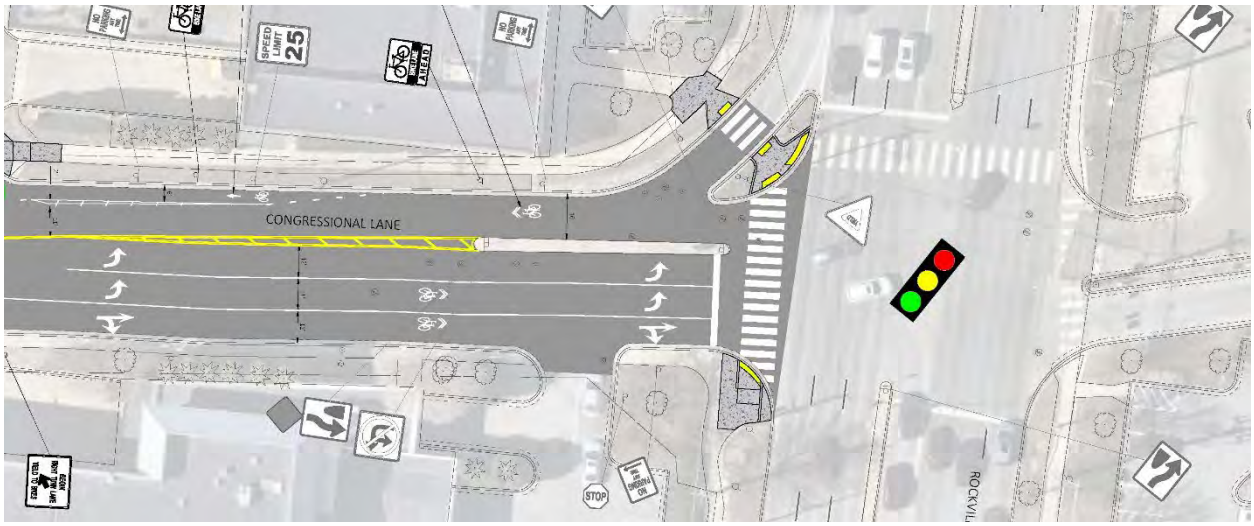

Figure 24. No changes to the lane configuration approaching MD 355 (Concept 1, sheet 6).

Concept 2: Shared Roadway and Bicycle Lanes

Definition: A shared roadway consists of pavement markings that indicate that the travel lane is shared by both motor vehicles and cyclists.

Figure 25. Example image of a shared roadway demarcated by a sharrow. (Credit: Nicholas Ferenchak)

Benefits: A visual indication that reinforces the legitimacy of cyclists using the travel lanes and alerts drivers to the potential presence of cyclists; suggests proper cyclist positioning within the travel lane.

Concept 2 proposes to maintain the current lane and parking configuration with new shared roadway pavement markings (sharrows) and installation of traffic calming features from E. Jefferson Street to Rollins Avenue. The lane configuration will remain with the addition of traffic calming measures and adjusted pavement markings to encourage traffic to move at a slower speed (Figure 26).

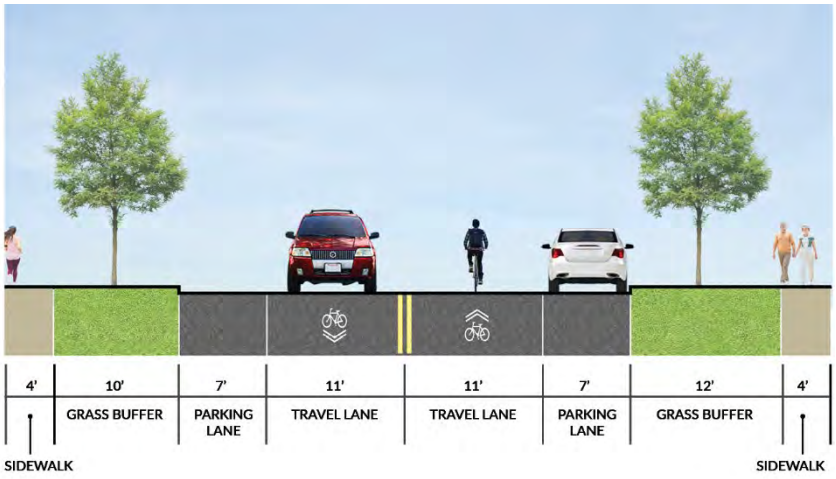

Figure 26. Section diagram of residential context, concept 2.

Starting at the Rollins Avenue and Congressional Lane intersection and moving east along Congressional Lane to E. Jefferson Street, the existing travel lane and parking configuration will be maintained with the addition of sharrows to indicate a shared roadway facility, as shown in the section diagram (Figure 26). The midblock crossing at Montrose Park will be improved with curb bump outs that define the on-street parking and reduce the length of the crossing, the crossing will be raised and painted as a ladder crossing, curb ramps will be replaced. A few parking spaces will be removed to accommodate this traffic calming and pedestrian safety improvement (Figure 27). One additional speed hump will be installed between the midblock crossing and E. Jefferson Street.

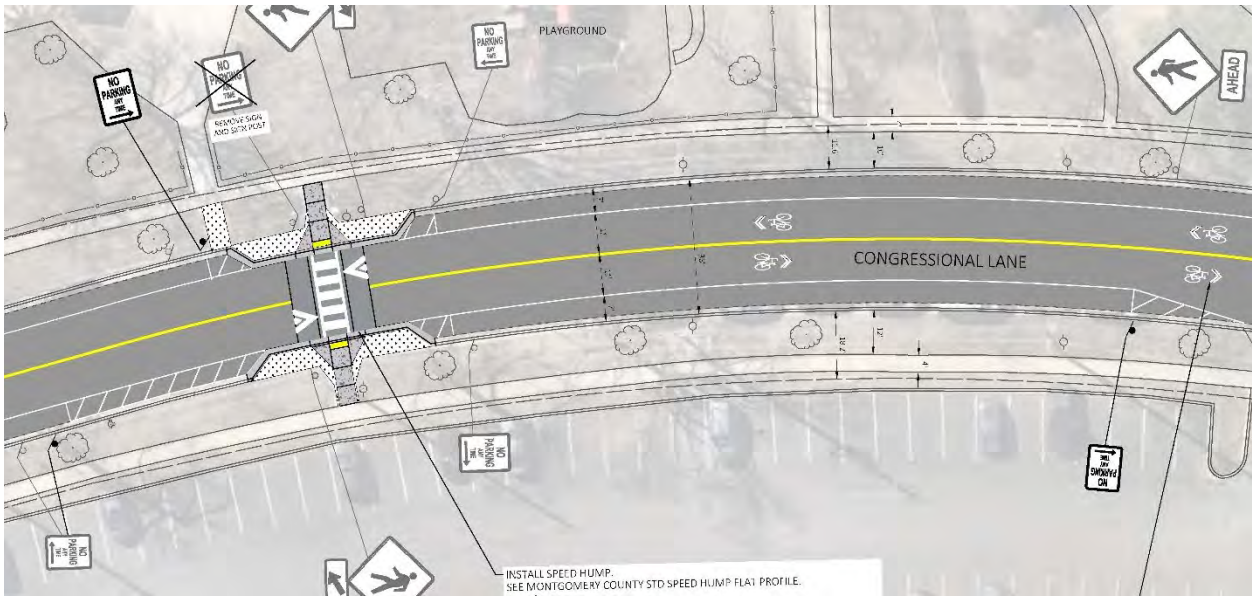

Figure 27. Raised crosswalk and replaced curb ramps at the Montrose Park midblock crossing (Concept 2, sheet 2).

The intersection of E. Jefferson Street and Congressional Lane will be modified to relocate pedestrian crossings to align with replaced curb ramps on each corner and repainted as continental crosswalks (Figure 28).

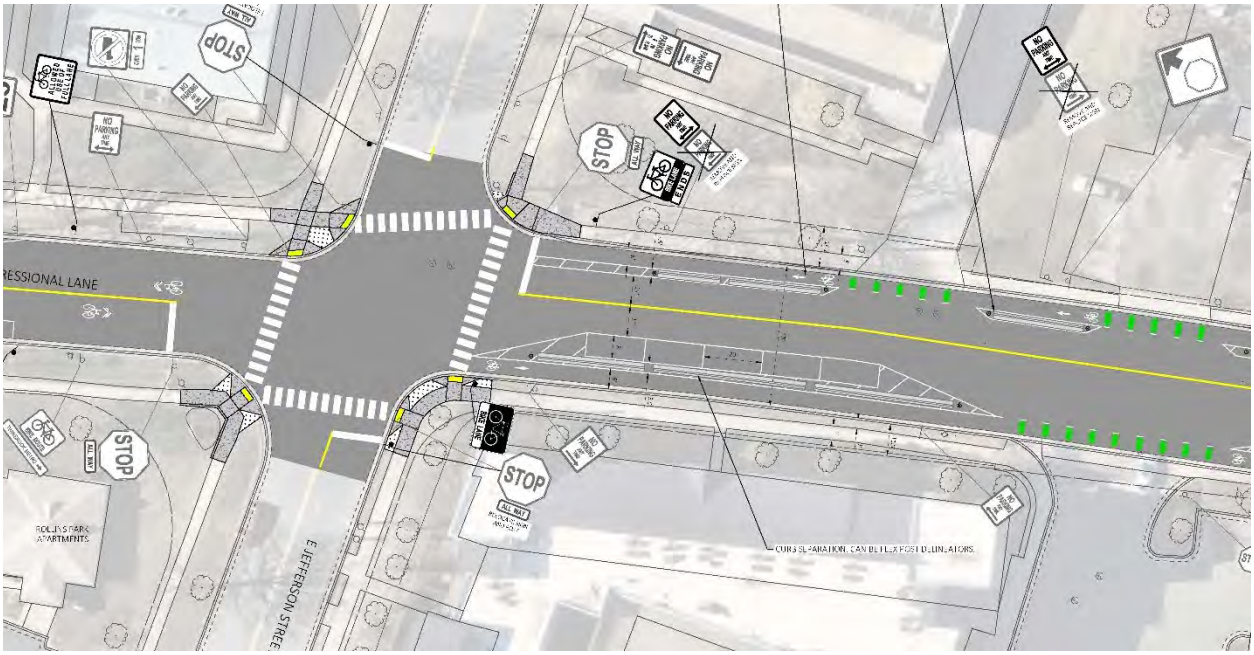

Figure 28. Modified pedestrian crossings at the intersection of E. Jefferson Street and Congressional Lane (Concept 2, sheet 4).

Congressional Lane between E. Jefferson Street and MD 355 is proposed as a buffered bicycle lane as shown in Concept 1, but includes a precast concrete curb rather than flex post delineators as the vertical barrier between the bicycle lanes and the travel lanes (Figure 29).

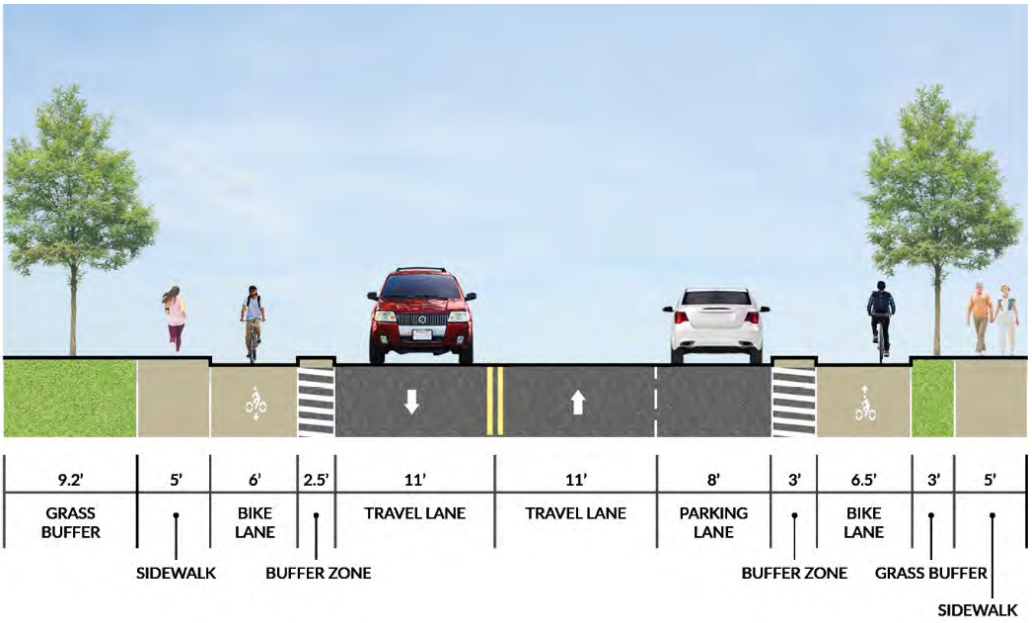

Figure 29. Section diagram of commercial context, concept 2.

Concept 3: Cycletrack

Definition: A cycletrack has many of the same design qualities as a buffered bicycle lane. However, a cycletrack combines both directions of bicycle travel to one side of the roadway.

Figure 30. Example image of a cycletrack. (Credit: Broken Sidewalk)

Benefits: Increases cyclist comfort and confidence levels by creating separation from motor vehicles and is more appealing to a wider range of ages and abilities compared to bicycle lanes; increases predictability of cyclists and motorist positioning and interaction; minimizes or removes conflict of cyclists using sidewalk/pedestrian facility.

Concept 3 proposes to install a two-way cycletrack along the south side of Congressional Lane for the entire length from MD 355 to Rollins Avenue. The cycletrack is a total of 11-feet wide with a 2-foot painted buffer and flex post delineators, spaced every 20-feet, as a physical buffer to 11-foot wide travel lanes which are shifted to the north side of the roadway (Figure 31).

A two-way cycletrack will start at the Rollins Avenue and Congressional Lane intersection which is a four-way stop condition where cyclists will transition to a shared roadway facility in all directions. Locating the cycletrack on the south side avoids any conflicts with transit stops located on the opposite, north side of Congressional Lane throughout the corridor. Moving east along Congressional Lane, in locations where driveway access crosses the cycletrack, green skips are painted in the bicycle lanes (Figure 32).

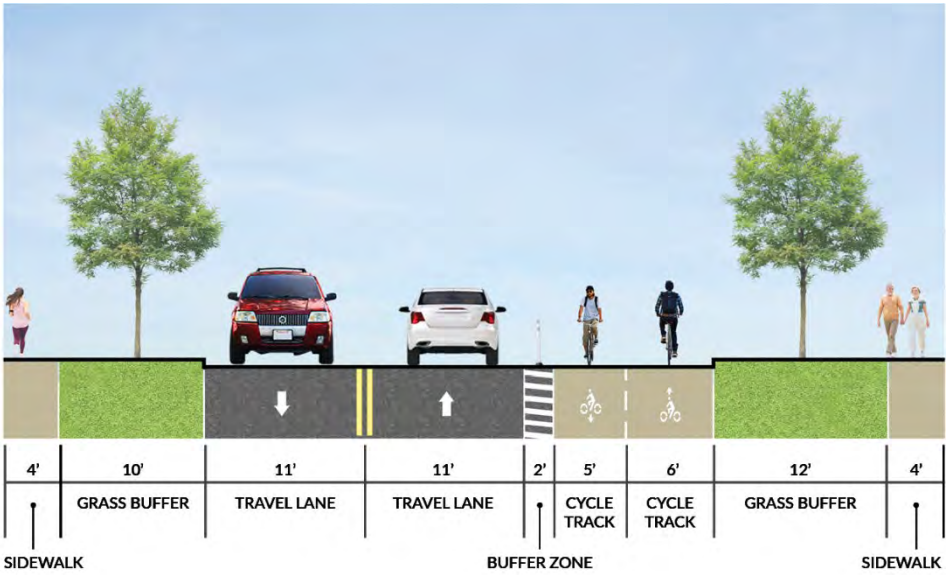

Figure 31. Section diagram of residential context, concept 3.

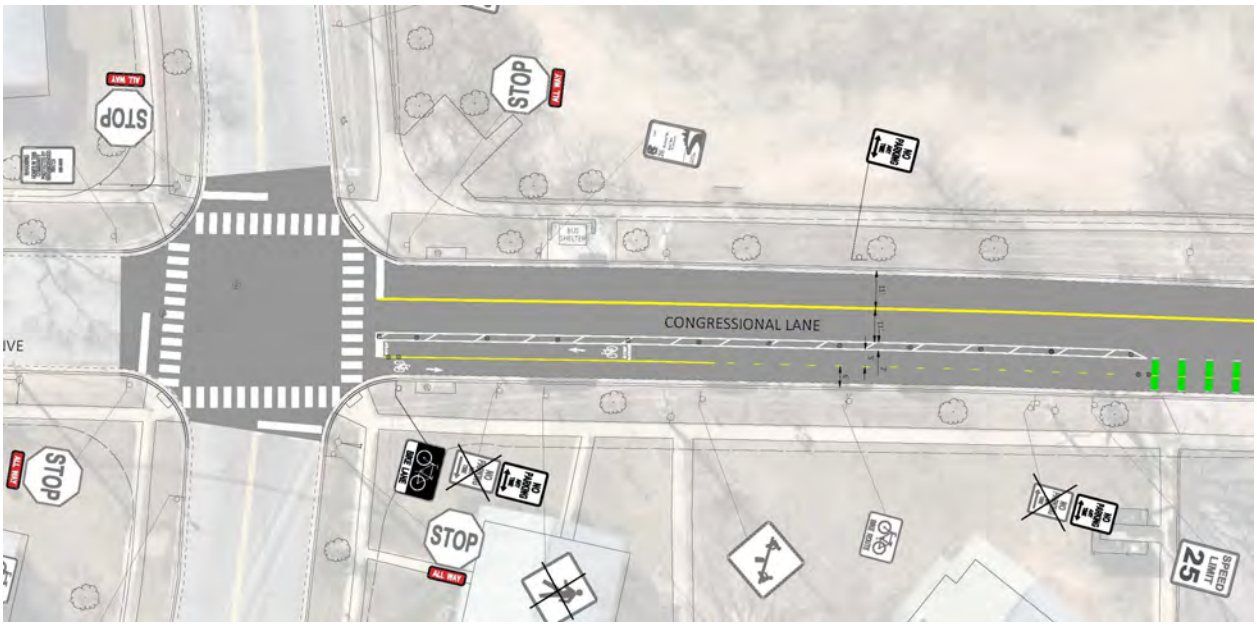

Figure 32. Cycletrack begins on the south side of the Rollins Avenue and Congressional Lane intersection (Concept 3, sheet 1).

The midblock crossing at Montrose Park will be improved as a raised crosswalk through the entire width of the roadway and cycletrack, painted as a ladder crosswalk, and replacement of curb ramps on both sides (Figure 33).

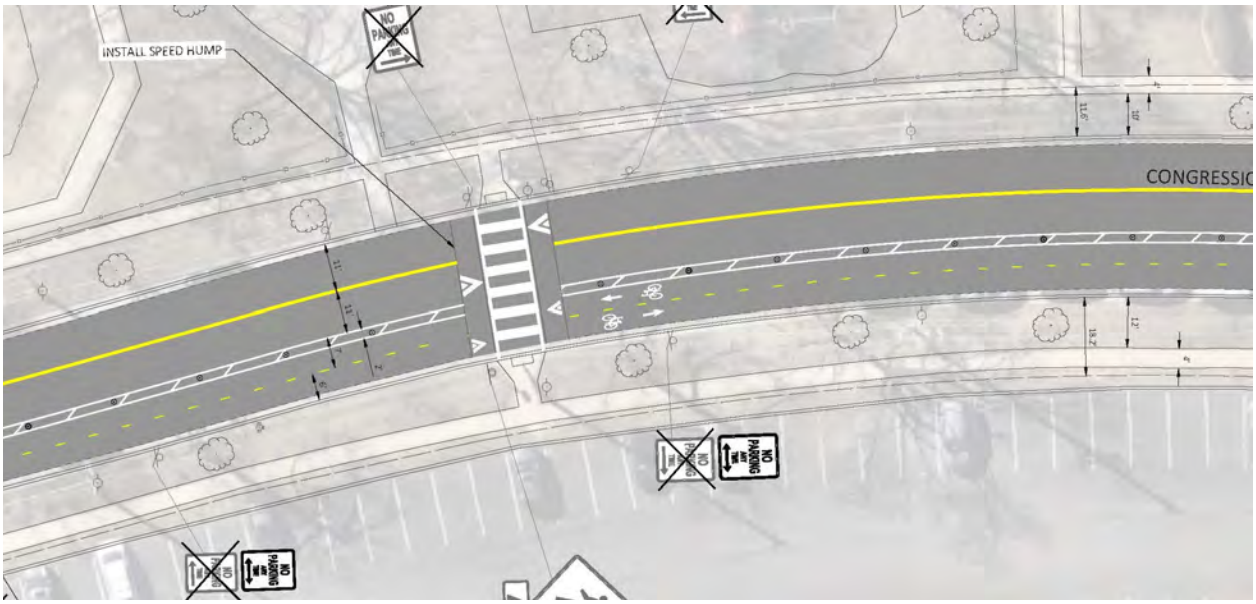

Figure 33. Improved midblock crossing at Montrose Park (Concept 3, sheet 2).

The intersection of E. Jefferson Street and Congressional Lane will be modified to relocate pedestrian crossings to align with replaced curb ramps on each corner and repainted as continental crosswalks. The cycletrack will continue through the intersection as painted green skips (Figure 34).

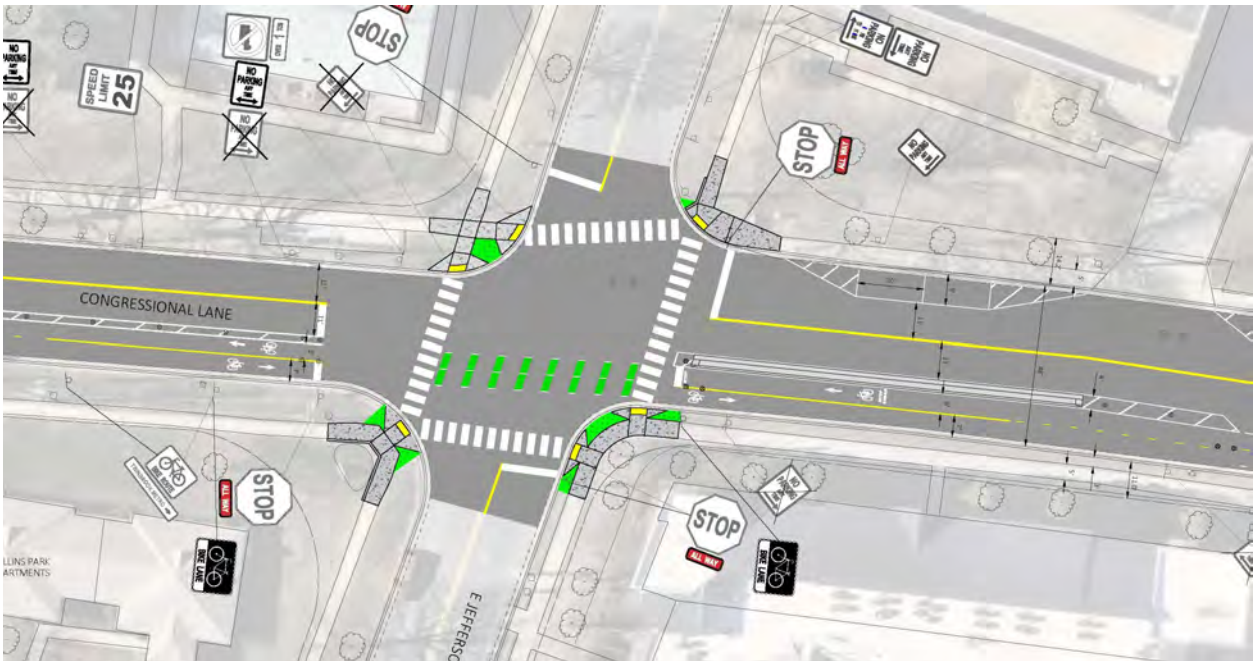

Figure 34. Modified pedestrian crossings at the intersection of E. Jefferson Street and Congressional Lane (Concept 3, sheet 4).

East of E. Jefferson Street the existing curb-to-curb width is slightly wider resulting in an increase in a 4-foot buffer with a precast concrete curb integrated as vertical barriers within the buffer (Figure 35). The vocabulary of painted green skips at conflict zones is continued. On-street parking is shifted to the north side of the roadway with a total of nine parking spots provided.

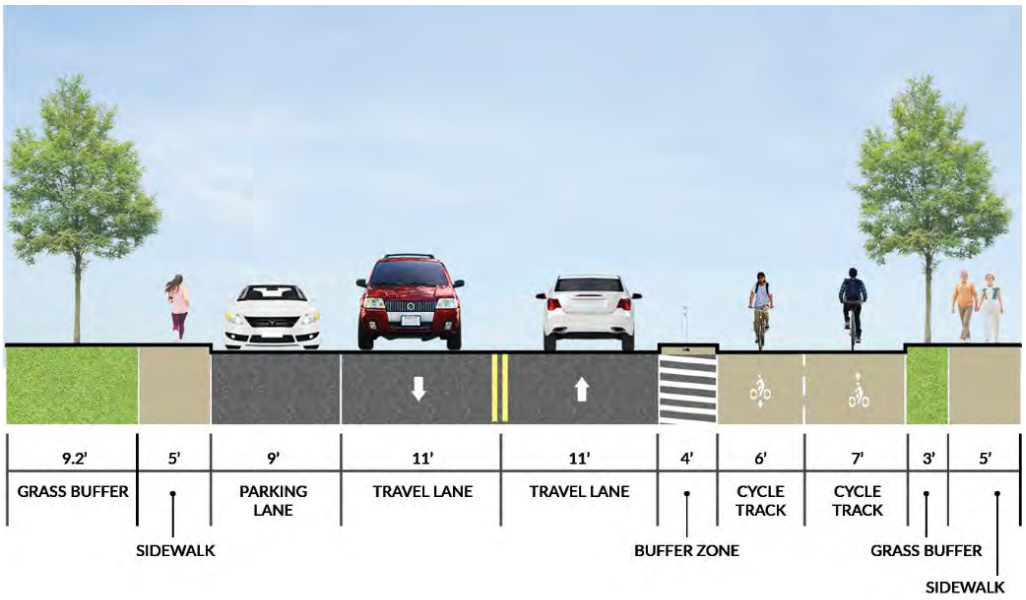

Figure 35. Section diagram of commercial context, concept 3.

The midblock crossing between E. Jefferson Street and MD 355 is modified to provide parallel crossings for pedestrians as a continental crossing and cyclist as painted green skips. The cycletrack transitions to bicycle lanes on either edge of the roadway at the midblock crossing. Travel lanes will be reduced in width to 11-foot lanes and curb ramp replacement on both sides (Figure 36). Approaching MD 355 the bicycle lanes transition to shared road facility with no changes to the lane configuration at MD 355 (Figure 37).

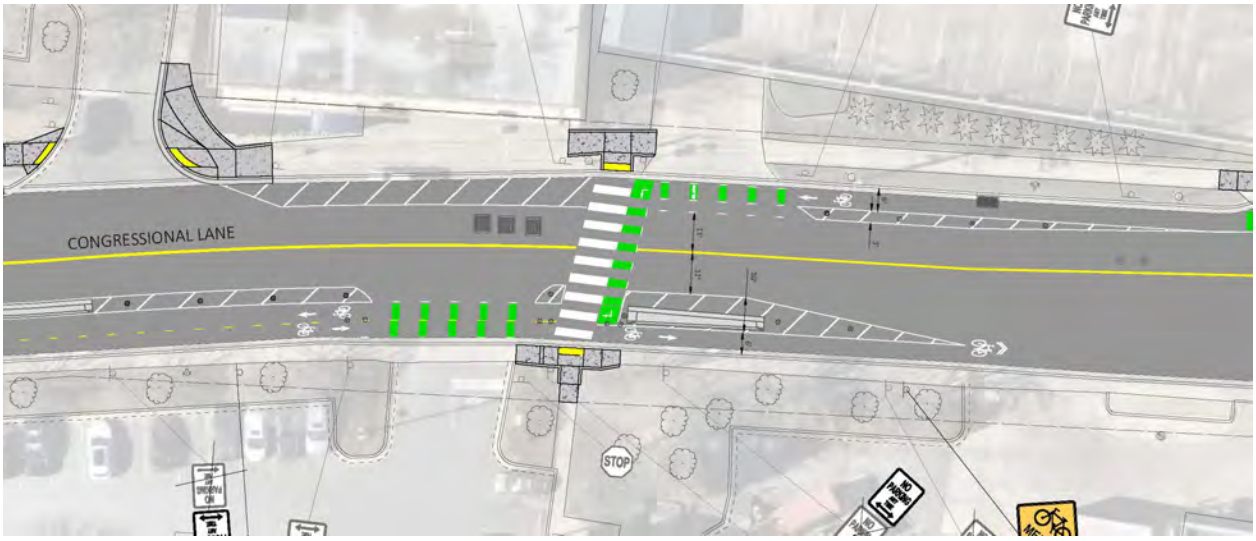

Figure 36. Cycletrack transitions to bicycle lanes at the modified midblock crossing (Concept 3, sheet 5).

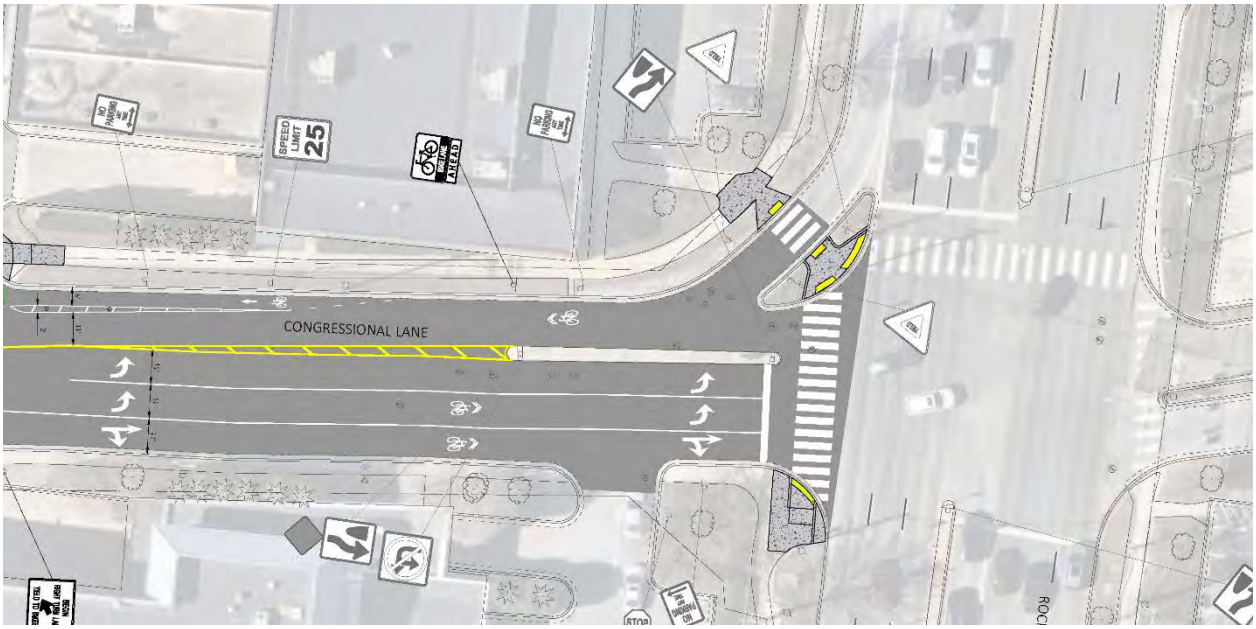

Figure 37. No changes to the lane configuration approaching MD 355 (Concept 3, sheet 6).

IMPACTS ANALYSIS

A set of design metrics and performance measures for evaluating complete streets projects are listed in Table 1. Overall, the potential concept alternatives presented are expected to have negligible impact on traffic operations, with no changes to intersection delay, Level of Service, or queuing expected from baseline existing conditions. Concepts 1 and 3 maximize pedestrian and cyclist accommodations at the expense of parking, while concept 2 strikes a balance between parking and multimodal needs along the corridor.

Table 1. Design metrics and performance measures for evaluating complete streets.

Metric	**Concept 1** Buffered Bicycle Lanes	**Concept 2** Shared Roadway and Buffered Bicycle Lanes	**Concept 3** Cycletrack
LOW/RW	Limit of work is consistent for all concepts and is within the existing right-of-way for Congressional Lane.		
Utility Relocations	The design for all concepts avoid impacts to existing utilities.		
On-street Parking Reduction Rollins Ave. to E. Jefferson St.	-92	-9	-92
On-street Parking Reduction E. Jefferson St. to MD 355	-8	-8	-13
Change in Traffic Level of Service	No Change	No Change	No Change
Traffic Operations	No Change	No Change	No Change
Bicycle Level of Stress Rollins Ave. to E. Jefferson St.	Level 1 - Low	Level 3 – High	Level 1 - Low
Bicycle Level of Stress E. Jefferson St. to MD 355	Level 1 - Low	Level 1 - Low	Level 1 - Low
Estimated Construction Cost	$295,139	$330,572	$300,041
Additional Notes			

Parking Impacts

Assessment of parking utilization and impacts is evaluated by corridor segments based on the contrast in character between the commercial land use, E. Jefferson Street to MD 355, and the residential land use, Rollins Avenue to E. Jefferson Street. Refer to Figure 38 for information on existing parking utilization.

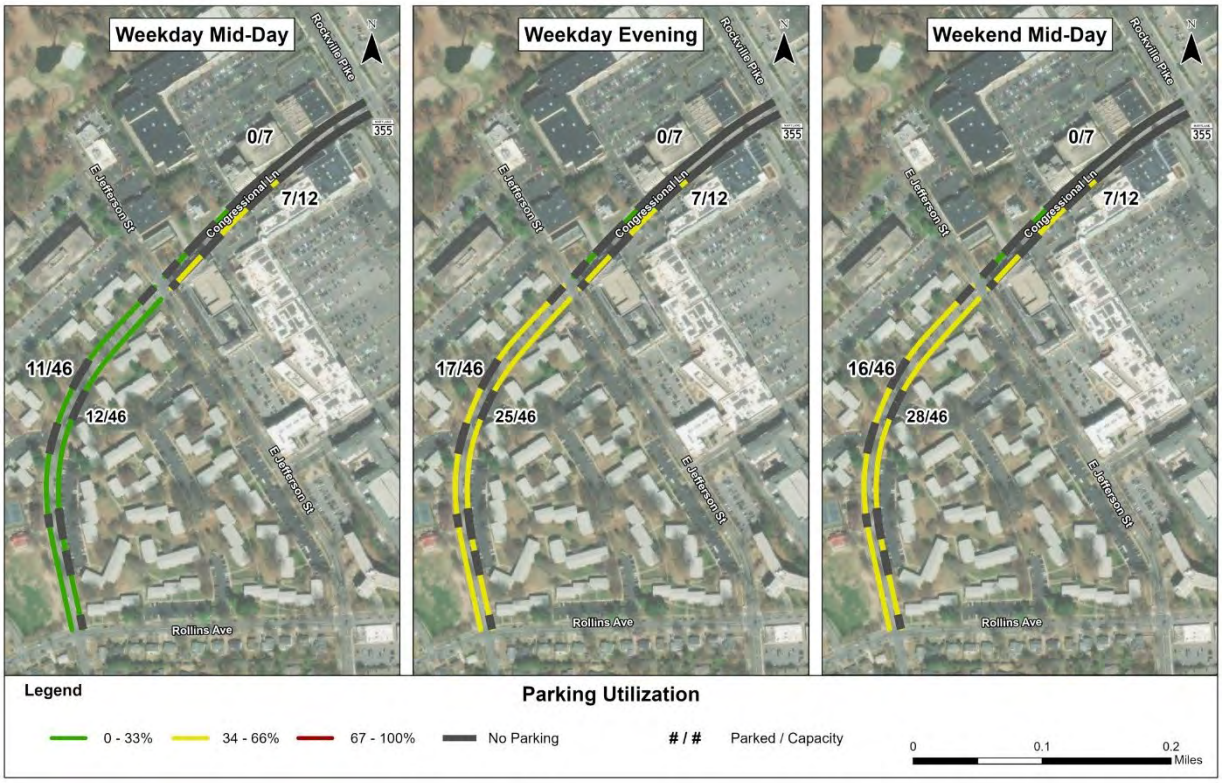

Figure 38. Parking utilization map.

For the commercial segment of the corridor, parking reductions associated with the concept alternatives are not anticipated to cause a hardship to the existing uses. The businesses and residential uses provide easy to access surface parking and or access to parking garages. The on-street parking is supplemental in nature, however, it does function as a secondary buffer to proposed bicycle facilities.

For the residential segment of the corridor, parking reductions associated with Concepts 1 and 3 are comprehensive in that all on-street parking is eliminated to reallocate space within the public right-of-way. This is necessary to create a low stress dedicated bikeway that shifts Congressional Lane into the category of a complete street accommodating all modes of movement and transportation within the corridor. The existing residential complexes located along this segment provide surface parking for residents. However, on-street parking also serves Montrose Park which provides recreation facilities and a community center for this and surrounding neighborhoods. Connecting roadways currently allow on-street parking, however, mitigating this loss of parking to park users needs additional consideration if Concepts 1 or 3 are selected as the preferred alternative. Refer to Table 2 for a summary of impacts to parking per each potential concept alternative.

Parking Needs	Thresholds (%)
Low	0-33
Medium	34-66
High	67-100
Over Capacity	>100

Parking Impact Summary Table			Existing Conditions		Build Alt 1 - PBL		Build Alt 2 - PBL/Shared Road		Build Alt 3 - 2-Way Cycle Track	
			West	East	West	East	West	East	West	East
MD 355 to Jefferson St	Day & Time	Capacity	7	12	0	14	0	14	9	0
	Weekday Mid-Day	Demand	0	7	0	7	0	7	7	0*
		Utilization	0%	58%	NA	50%	NA	50%	78%	NA
	Weekday Evening	Demand	0	7	0	7	0	7	7	0*
		Utilization	0.0%	58%	NA	50%	NA	50%	78%	NA
	Weekend Mid-Day	Demand	0	7	0	7	0	7	7	0*
		Utilization	0%	58%	NA	50%	NA	50%	78%	NA
Jefferson St to Rollins Ave	Day & Time	Capacity	46	46	0	0	41	51	0	0
	Weekday Mid-Day	Demand	11	12	11	12	11	12	11	12
		Utilization	24%	26%	NA	NA	27%	24%	NA	NA
	Weekday Evening	Demand	17	25	17	25	17	25	17	25
		Utilization	37%	54%	NA	NA	41%	49%	NA	NA
	Weekend Mid-Day	Demand	16	28	16	28	16	28	16	28
		Utilization	35%	61%	NA	NA	39%	55%	NA	NA

*Assumed to park on west side.

Table 2. Parking impact summary.

Pedestrian and Cyclist Level of Stress

Level of Stress (LTS) ratings of roadways is based on the posted speed, volume of vehicles and whether bicycle infrastructure is present. The LTS concept is important for bikeway design as it helps planners and engineers understand the varying levels of comfort and safety experienced by different types of cyclists, using an objective measurement. As part of the rating, separated bikeways reduce LTS more than standard (paint-only) bicycle infrastructure. Roadways are rated on a scale of 1 to 5, with 1 being the least stressful roadways to bike on, and 5 being the most stressful. Utilizing this metric, Congressional Lane from MD 355 to E. Jefferson Street rank at level 4, while west of E. Jefferson Street to Rollins Avenue, the street ranks at level 3 as shown in Figure 40. This is in keeping with observations made by Mead & Hunt in the field – the commercial sections of the corridor are more stressful to walk and bike on due to the nature of the built environment. The residential section is much more accommodating but can still use improvement to make it more walkable and bikeable.

The following maps color code level of stress through the corridor for the existing condition and the potential concept alternatives (Figure 39 – Figure 43).

LTS	Target Audience	Bicycle Facility Types
0	All ages and abilities	Rail-trails, shared-use paths
1	Almost everyone	Protected bikeways, sidepaths
2	Interested but concerned	Bike lanes, bike boulevards
3	Enthused and confident	Bike lanes, shared lanes, shoulders
4	Strong and fearless	No bike facility or bike lane on a major roadway
5	Bicycle Access Prohibited	Bicycle access is prohibited by managing roadway agency

Figure 39. Level of stress: Legend

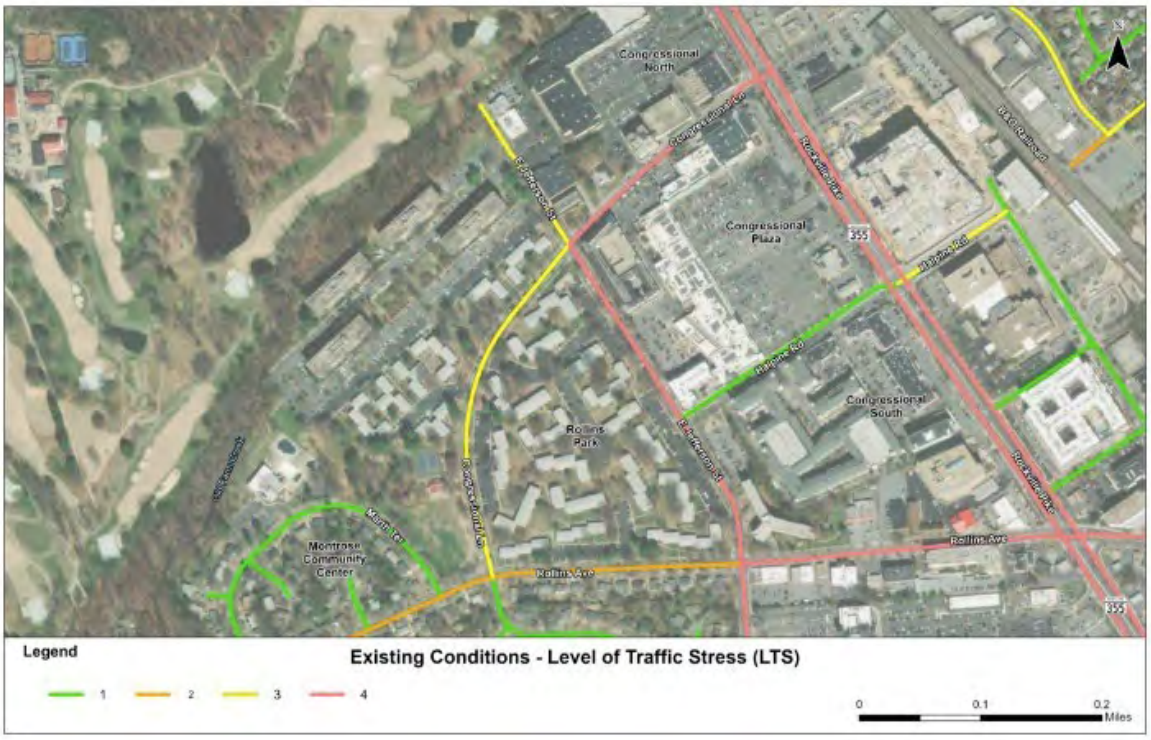

Figure 40. Level of stress, existing condition.

Figure 41. Level of stress, concept 1.

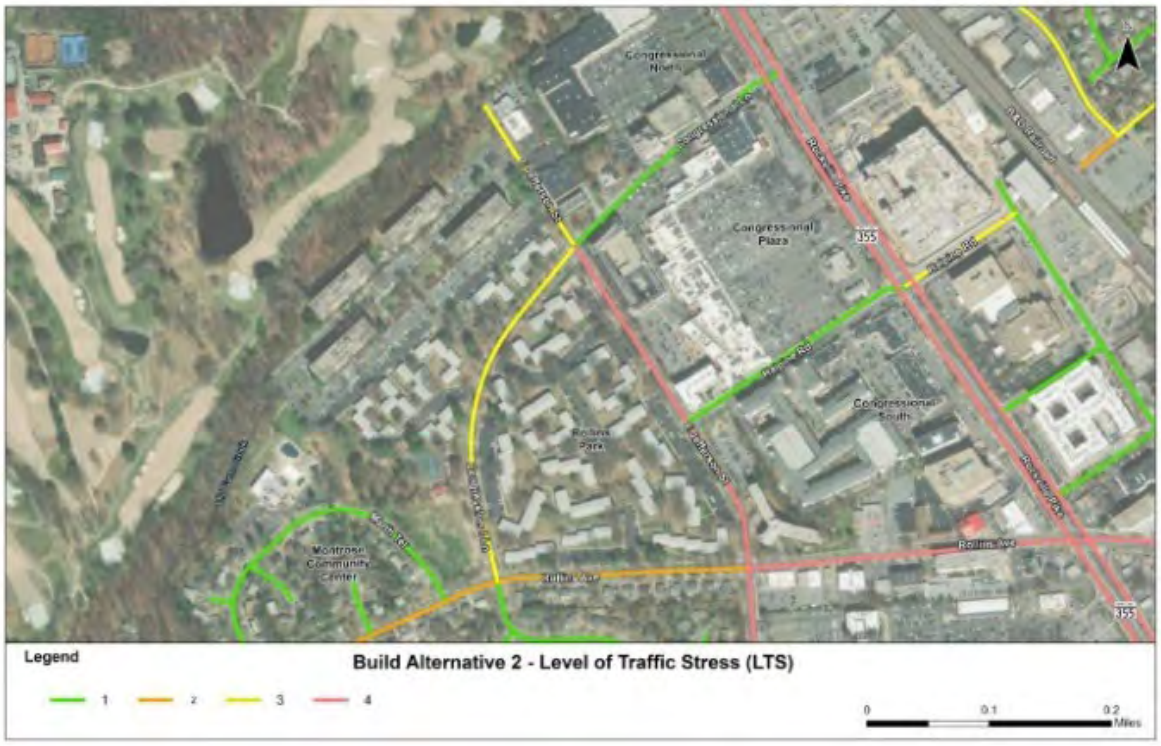

Figure 42. Level of stress, concept 2.

Figure 43. Level of stress, concept 3.

Traffic Operations and Level of Service

All study intersections were evaluated for traffic operations. Geometric data such as number of lanes, lane configuration, storage lengths, tapers, and distances between intersections were considered. Additionally, existing signal timing and phasing were obtained from MCDOT and coded into the traffic model along with traffic volumes. Intersection turning movement counts are provided in Appendix A.

Intersection capacity analyses were performed using the industry standard HCM and an intersection capacity analysis during weekday AM and PM peak hours was conducted. Performance measures of effectiveness include level of service (LOS), volume-to-capacity (v/c) ratio, and average vehicle delay. The results and queuing reports are provided in Appendix B.

LOS is a qualitative measure describing operational conditions of an intersection or any other transportation facility. LOS measures the quality of traffic service and may be determined for intersections on the basis of delay, and volume to capacity (v/c) ratio. At intersections, LOS is a letter designation that corresponds to a certain range of roadway operating conditions. The levels of service range from 'A' to 'F,' with 'A' indicating free flow traffic – and 'F' indicating a condition where the intersection would not be able to handle all queued traffic in a single signal cycle.

Figure 44 shows the existing conditions LOS ratings. All build concepts maintain the same number of travel lanes and types of intersection traffic control; therefore, no changes in Level of Service are expected from the Existing Conditions.

Figure 44. Level Of Service (LOS) ratings for existing conditions.

Construction Cost Estimates

A construction cost estimate has been prepared outlining bid items, quantities, and unit pricing. Allowances of 10% of estimate for each of the following are included: design and permitting, environmental and construction management. A contingency of 25% of estimate is included.

Unit pricing is based on bid sheets from Maryland municipal DOT projects within the past 2 years.

The following are planning level construction cost for each of the concept alternatives:

- Concept 1 - Buffered Bicycle Lanes: $292,659
- Concept 2 - Shared Roadway and Bicycle Lanes: $313,212
- Concept 3 - Cycletrack: $297,561

These estimates include costs for removing and installing new pavement markings, installing speed humps/raised crosswalks, installing curb ramps, installing curb and gutter, and installing bikeway flex post delineators and bikeway separator concrete curbs, and signage. The construction cost estimate breakdown is provided in Appendix F.

Summary Matrix

Table 3. Alternative impact summary chart.

Alternative	Parking	Bike/Pedestrian Safety	Traffic Operations*	Costs
1 - Protected Bike Lanes (PBL)	High	Good	Good	Moderate
2 - PBL + Sharrows	Good	Moderate	Good	Moderate
3 - 2-Way Cycle Track	High	Good	Good	Moderate

**no degradations in traffic operations are expected with any of the alternatives.*

Stakeholder Engagement and Public Comment

On March 27, 2025, a virtual public meeting was held with City residents. The meeting was advertised by the City's Department of Public Works, and it coincided with the publishing of a presentation and conceptual drawings set on the City's Vision Zero Projects website, https://www.rockvillemd.gov/2393/Vision-Zero-Projects. The public meeting consisted of a presentation, review of three concept plans alternatives and discussion contrasting the changes to the corridor that would be required to implement the different options. The presentation can be found in Appendix G and generally covered the project's purpose and need; concept overview; low/moderate/high impacts to parking capacity, pedestrian and bicycle safety, traffic operations, and construction cost; design assumptions, and next steps in project process. 15 attendees representing the general public attended this meeting.

Residents and City staff could also submit their comments in writing. 32 emails, letters, and form submissions were received.

The following is a summary of public comments expressed during public comment portion of the public meeting or received via letter or email correspondence to the City's Project Manager:

Traffic Operations

- Drivers use this area as a cut-through and occasionally make a left turn from Montrose Road onto either Evelyn Drive or Wilmart Street that is not allowed.
- Multiple city, metro, and school buses, as well as delivery trucks, regularly stop on the road. Space is required for these uses to continue uninterrupted.
- Congestion would increase if bike lanes were installed, and this is already a busy road.
- This seems like a very short stretch for a bike lane, especially if it would not connect to any other bike infrastructure.

Parking Concerns	• Losing any street parking at all in this area is a major concern. • Residents in the adjacent apartment complexes depend on street parking. Any removed spots would be an impediment for them. • The civic association, park, and preschool depend on the street parking for pickup/dropoff, sports events, and other activities. • Rockville Recreation & Parks and the Montrose Civic Association both note adverse impacts to their users if parking is removed. • Rockville Bicycle Advisory Committee also noted the importance and high usage of the street parking. • Parking currently is sufficient in the area, but becomes difficult when there are maintenance activities occurring. This would become permanent if street parking were removed. • Paid parking within the apartment complexes is unaffordable for some residents. • Alternative parking options are minimal. Other nearby streets are too far to walk to, are already at capacity, or require a permit. There are no nearby parking lots.
Pedestrian or Cyclist Safety	• Pedestrian safety and usability is a higher priority concern than bike lanes. • The road is busy enough to already feel hazardous to navigate, especially to those with disabilities. • The Rockville Bicycle Advisory Committee supports separated bike lanes over sharrows and cycletrack as providing the maximum safety for cyclists. • Current sidewalks are in poor condition. In certain spots, ADA access is also an issue. • Expanding the sidewalks to accommodate both pedestrians and bicyclists was suggested in several comments.
Accessibility Concerns	• The pedestrian walk light at the intersection of Congressional Lane and Rockville Pike is quite short. • Sidewalks are narrow in some places. In spots, curb ramps are obstructed, forcing wheelchair users to use the street instead. • A bus platform at the north side of Congressional Lane would be helpful.

Public input revealed an overwhelming perceived negative impact associated with the loss of on-street parking near Montrose Park. As such, a majority of the public that provided input prefer Concept 2 or suggested no change should be made to the corridor.

There is support for traffic calming measures such as speed humps and enhancements to the midblock crossings that may include pedestrian refuge islands, curb bump outs, raised crossings and restriping are warranted.

Pedestrian and bicycle advocacy organizations provided letters in support of improvements that increase safety of pedestrians and cyclists with specific concept preferences identified. Copies of the letters as well as a full list of public comments are included in Appendix H.

Concept to Remove Free Right Turn Lane / Slip Lane at MD 355

In response to public input that raised safety concerns for pedestrian movements at the MD 355 intersection, the following concept shows the removal of the free right turn lane, also referred to as a slip lane, for vehicles traveling southbound on MD 355 and turning onto Congressional Lane. MD 355 is a state owned right-of-way and will require coordination with Maryland Department of Transportation State Highway Administration for any changes proposed to this road or intersection. MD 355 existing condition is shown in Figure 45 and the proposed concept is shown in Figure 46.

Figure 45. Existing Condition at MD 355.

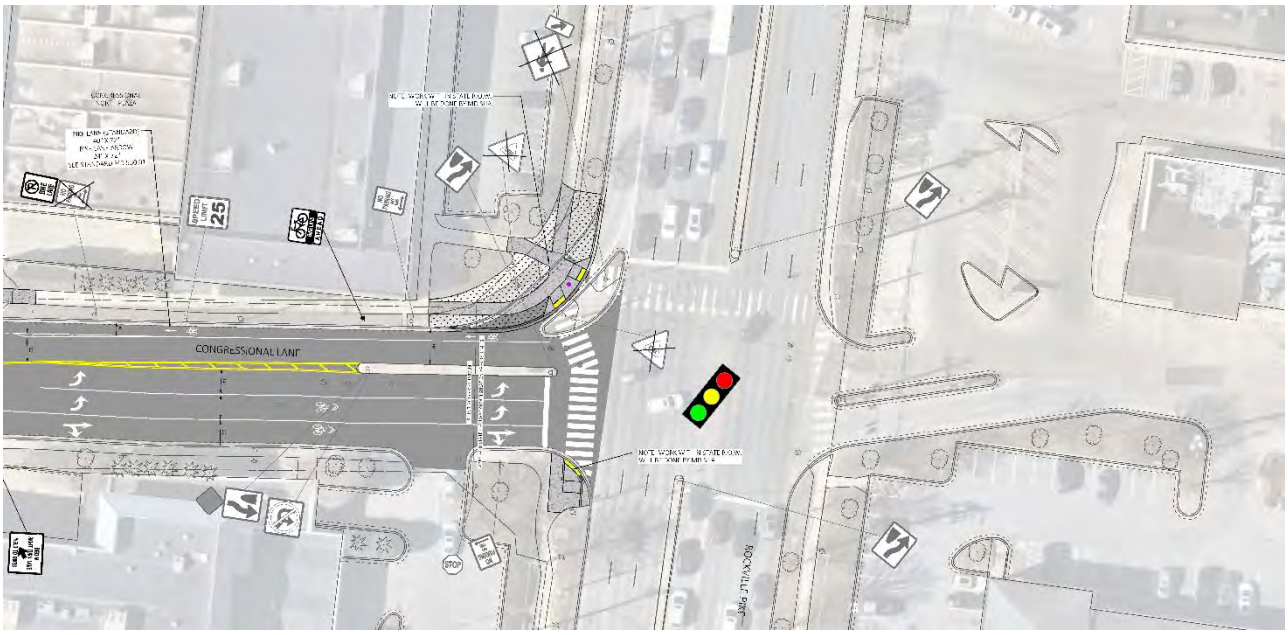

Figure 46. Proposed removal of slip lane at MD 355, in response to community input about its impact on safety.

CONCLUSION

The study conducted a comprehensive evaluation of potential improvements aimed at enhancing safety and accessibility for all users of the corridor. The most impactful components of the plan include the introduction of dedicated bicycle facilities, traffic calming measures, and pedestrian safety enhancements. These elements are designed to transform Congressional Lane into a more inclusive and user-friendly environment, aligning with the goals of the City of Rockville's Bikeway and Pedestrian Master Plans. While public outreach highlighted concerns about losing on-street parking, especially near Montrose Park, Concept 2 did take this into consideration by providing means to improve bike and pedestrian safety while minimizing parking impacts. Overall, residents preferred Concept 2 or no changes at all, focusing on maintaining parking for Park users. There was also strong support for traffic calming and pedestrian safety improvements like speed humps, raised crosswalks, and refuge islands.

Concept 1 - Buffered Bicycle Lanes: Concept 1 proposes the installation of buffered bicycle lanes from MD 355 to Rollins Avenue. These lanes are designed to increase cyclist comfort and confidence by creating a physical separation from motor vehicles. The plan includes five-foot bicycle lanes on either side of the road, with a one-foot painted buffer and flex post delineators spaced every 20 feet. This configuration necessitates the removal of all on-street parking. The buffered bicycle lanes will start at the Rollins Avenue and Congressional Lane intersection, transitioning to a shared roadway facility in all directions. Enhancements include green skips painted in the bicycle lanes at bus stops and driveways, a raised midblock crossing at Montrose Park, and modified pedestrian crossings at the E. Jefferson Street intersection. East of E. Jefferson Street, the bicycle lanes and buffers widen slightly, accommodating 14 parking spots along the south side of the roadway.

Concept 2 - Shared Roadway and Bicycle Lanes: Concept 2 maintains the current lane and parking configuration from E. Jefferson Street to Rollins Avenue, with the addition of shared roadway pavement markings (sharrows) and traffic calming features. Protected bicycle lanes are proposed from MD 355 to E. Jefferson Street, separated by a precast concrete curb rather than flex post delineators. The midblock crossing at Montrose Park will be improved with curb bump outs, a raised crosswalk, and replaced curb ramps. One additional speed hump will be installed between the midblock crossing and E. Jefferson Street. The intersection of E. Jefferson Street and Congressional Lane will see modified pedestrian crossings, and the buffered bicycle lanes will continue east of this intersection with minimal parking reductions.

Concept 3 - Cycletrack: Concept 3 introduces a two-way cycletrack along the south side of Congressional Lane from MD 355 to Rollins Avenue. This 11-foot wide cycletrack, with a two-foot painted buffer and flex post delineators, provides a high level of separation and safety for cyclists. The cycletrack starts at the Rollins Avenue and Congressional Lane intersection, avoiding conflicts with transit stops on the north side of the corridor. Enhancements include green skips painted in the cycletrack at driveways, a raised midblock crossing at Montrose Park, and modified pedestrian crossings at the E. Jefferson Street intersection. East of E. Jefferson Street, the cycletrack transitions to bicycle lanes at a modified midblock crossing, with travel lanes reduced to 11 feet and minimal changes to the lane configuration approaching MD 355.

In conclusion, while each concept offers unique benefits and trade-offs, the feedback from public outreach highlights the need to carefully balance safety improvements with the preservation of parking

as an asset. The City of Rockville Department of Public Works will consider all factors associated with this Complete Streets Study and identify the best alternative to advance as part of the city's roadway improvement and Vision Zero programs. The city will take into account safety benefits, cost of construction, on-street parking impacts, and public comments as this project moves forward.